Base Load Power Hub (BLPH)

SAFOP Close Out Report

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Crosswind, a Shell and Eneco joint venture, was awarded the tender to develop the offshore Hollandse Kust Noord (HKN) wind farm, located 18.5km off the coast of Netherlands near the town of Egmond aan Zee. The consortium plans to have HKN operational in 2023 with an installed capacity of 759MW generating at least 3.3TWh per year. This is sufficient renewable power to supply more than 1 million Dutch households with green electricity.

Offshore wind farms produce intermittent electricity and balancing these dips and peaks and integrating this electricity into the national energy system requires new technologies. For this reason, the offshore wind farm will include several new technologies that could be implemented at full-scale in the future. The new technologies being explored include a floating solar park, a short-duration battery storage as well as long-term storage via green hydrogen produced by water electrolysis and subsequently consumed in a fuel cell. The combination of these individual measures, herein referred to as the Base Load Power Hub (BLPH) will ensure a continuous power supply regardless of the wind situation.

1.1.1 Project Location

The Hollandse Kust Noord (HKN) wind farm is located 18.5km off the coast of the Netherlands near the town of Egmond aan Zee.

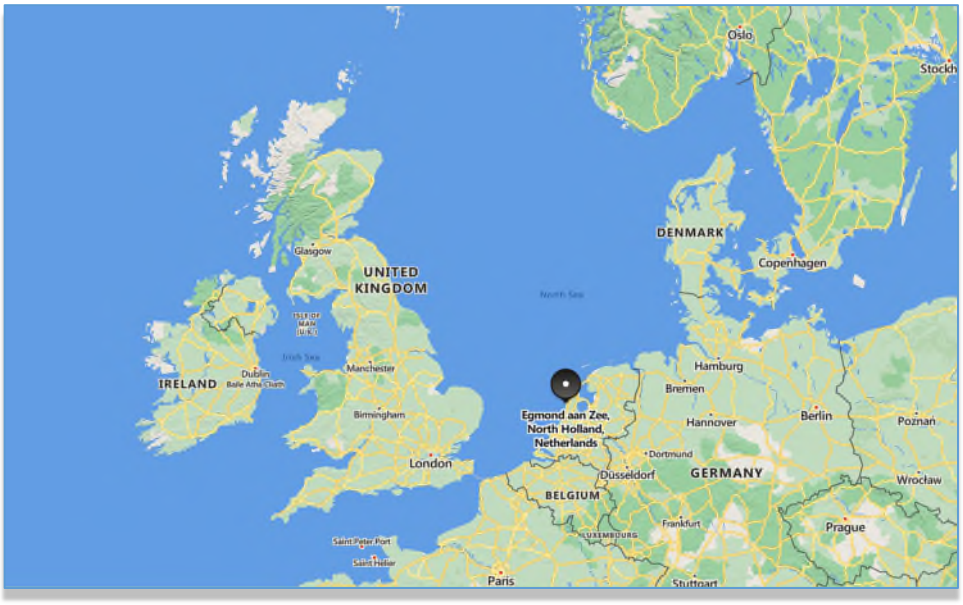


Figure 1 HOLLANDSE KUST NOORD WIND PARK Location Map

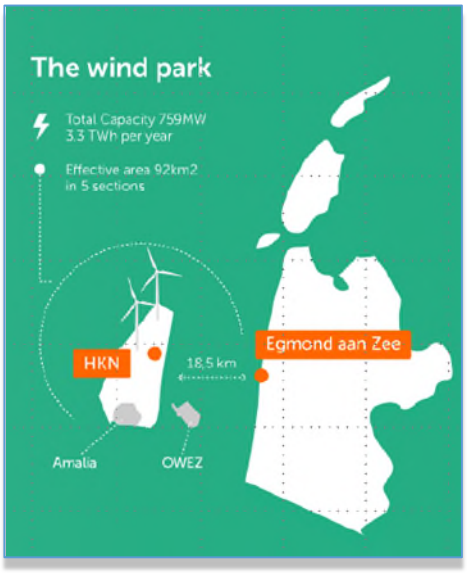


Figure 2 - Wind Park Details

The wind farm will consist of No. 69 x 11.5MW wind turbine generators each to be installed on a dedicated monopile structure. A 70th monopile located on coordinates E 590719.1, N 5841602.3 is reserved for installing the platform accommodating the BLPH. The monopile structure was designed and installed by Van Oord Offshore Wind (VooW) and therefore not part of the BLPH scope.

1.1.2 Project Concept

All components included in the BLPH will be integrated onshore on a topsides and installed in an offshore location within the boundaries of the HKN wind farm. At its simplest, the BLPH will store energy during periods of high electricity generation from renewable sources (a wind turbine generator and the floating solar PV farm) and release it during periods of low generation. In practice. It is expected that the energy stored will supplement generation from renewable sources to ensure that at least 1.0MW of power is exported to the electrical grid regardless of wind/solar availability.

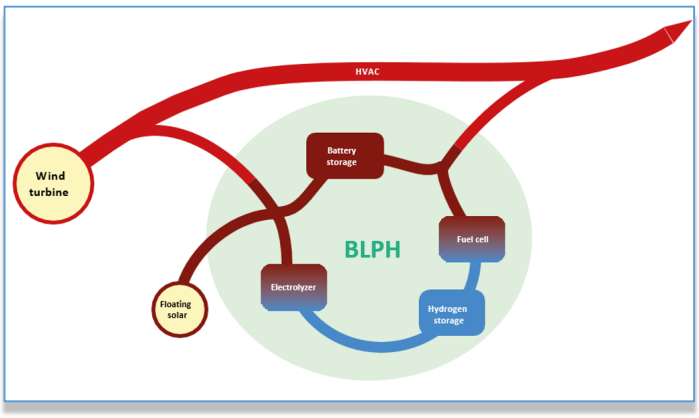


Figure 3 – BLPH Concept

Electricity in the BLPH will be stored in the form of electrons in a battery energy storage system (BESS) as well as converted into green hydrogen via water electrolysis. When the power output from the connecting wind turbine drops to below 1 MWe, the BLPH will return its stored energy to supplement the remaining power output. This will be by discharging the BESS, while stored hydrogen will be converted back into electricity using a fuel cell to extend the discharge duration.

The purpose of the BLPH s to function as a testbed for the integration of energy storage technologies with renewable generation. It is expected that equipment installed on the BLPH will operate as Normally Unmanned Installation for at least two (2) years with no or minimal maintenance and it will have its own independent control room with the ability to communicate with Crosswind's control room.

2 DOCUMENT SCOPE

The objective of the present document is to provide a formal close out record for all actions that have been responded to. This includes both FEED Deferred Actions (i.e., all the actions that have not been closed out in that Project Phase) and EPC Actions.

The SAFOP Close Out Report has been implemented on the Project to ensure that all actions raised from formal SAFOP workshop are managed and tracked.

Actions raised from other sources are not recorded in this document.

2.1 REFERENCES

Doc. No.	Description
[1] 123A90-DDL-EL-RE-20178	SAFOP Report

Table 1 - Reference Documents

2.2 DEFINITIONS AND ABBREVIATIONS

COMPANY or Client (CPY):	Crosswind
CONTRACTOR (CTR):	ROSETTI MARINO S.p.A.
PROJECT:	HOLLANDSE KUST NOORD WIND PARK Project

Table 2 – Definitions

3 SAFOP CLOSE OUT REPORT

3.1 ACTION STATUS DEFINITION

The action status may be defined as listed below:

- Open – Actions for which any form of response has yet to be submitted.
- Ongoing - The proposed response is considered approved by Contractor and the Action is under implementation in the engineering document.
- For Approval – The proposed response is considered approved and closed by Contractor and the Action is in the approval process by Client.
- Closed – Responses that have been approved as incorporated in the design (or otherwise closed) at EPC. Approval given by Contractor and Client.

3.2 ACTION STATUS

The following sections show the status of actions as a total and by Action Source (i.e., study).

3.3 FEED SAFOP ACTIONS

FEED SAFOP Actions

Status	Totals	%
Open	0	0
Ongoing	1	6
For Approval	0	0
Closed	17	94
TOTAL	**18**	**100**

3.4 EPC SAFOP ACTIONS

EPC SAFOP Actions

Status	Totals	%
Open	0	0
Ongoing	4	11
For Approval	0	0
Closed	33	89
TOTAL	**37**	**100**

3.5 Appendix 1 – FEED SAFOP ACTIONS

From the FEED SAFOP action list – Feb 2023.

Appendix 1 – FEED SAFOP ACTIONS *From the FEED SAFOP action list – Feb 2023.*

Sr. No.	Item	Description	Recommendation	RM Response	Comment – Execute SAFOP	Discipline	Action Response	Date	Action Status
1	Remote Operation	Remote monitoring and control not working properly. Sluggish control. Difficult to access large data remotely	Standardized remote monitoring for package vendors (Data Tunnel) à copy Siemens WTG method, if possible. Redundant fiber connection from Off to On-shore	Redundant fiber connection from Off to On-shore	**CW** to define data steam and to allow or not remote access and to what extent (High cybersecurity risk) Service network is in place. Missing "rules" for access to non-operators. Ensure suitable equipment to provide full data connection capacity.	**CW**	CWD REMOTE ACCESS SOLUTION: CWD to extend the Wind Farm solution to BLPH control room as soon as Yokogawa panels will be submitted. VENDORs REMOTE ACCESS SOLUTION: CWD and RM agreed on Remote Solution process and procedure has been issued from RM. CPI remote access list has been shared with RM and accepted.	19/11/2024	**Closed**
					YOKOGAWA will program data stream dedicated to alarm communication to ensure fast communication	**YOKO**	Form ITER to OER there will be a dedicated redundant FO link, which is part of PIN network. This link will transfer only traffic related to Yokogawa systems (SCADA and IT infrastructure). For this reason, we don't foresee any problem related to bandwidth and latency of this network. This is also one of the reasons why service network uses different FO links.	25/092024	Closed
					Each vendor shall provide alarm categorization (as per DEP) of their own alarm.	**CPI**	Alarm workshop report will be issued, Master Alarm Database 123A90-DDL-IN-LIS-40027 will be updated accordingly. - Elogen alarm list > ELO-INN-BPH-OTH-00007, update by 31st of Jan - OOE > no data - BESS > Alarm list and categorization will be issued by 31st of Jan - FC > alarm list and categorization to be issued? **RM share the document 1724000594-IN-LIS-00004 for CrossWind use.**	19/11/2024	**Ongoing**
2	Permit to operate	No permit to operate	Not meeting the TSO's connection requirements (Tennet) Unclear responsibilities regarding PCC. Effect of BLPH on PCC to be investigated / communicated with TENNET Both CW and BLPH teams to align towards Tennet.	CW to reply	There is no influence in terms of harmonics and BLPH is compliant to Tennet/grid regulation (ENSOL report). There could be interaction with the grid when full WT string is not producing and only BLPH is operating. Issue for this scenario will be investigated. **CW** (ENSOL) will take care of compliancy by extending the model to cover multiple scenarios for connection requirements – report ongoing (Saran Ganesh might support)	**CW**	ENSOL model study will not take place	19/09/2024	Closed
3	Grid-forming	Energizing transformers not working due to insufficient capacity (Q) of inverters to overcome the energization inrush of transformers.	During island operation the network short circuit capacity is too low to energize power transformers resulting in inverter trip. Re-consider the need for grid-forming operations.	CW to reply	There is a Black start scenario procedure being produced now. Current strategy is to use a temporary 200kW diesel generator to energize DC power and recharge the UPS to be hoisted on BLPH. For initial installation and commissioning is facilitated by the presence of the crane for BLPH installation. For other operations a vessel will have to bring a generator (can't keep it full with Diesel on the platform) **RM + CW** to explore Alternative by using 66kV breaker re-close discussed and will be considered – Please check **123A90-DDL-EL-SP-20141** for detailed description.	**CW**	The alternative have been explored and black start from grid is possible. Decision shall be made by RM and write the operational procedures **RM reply:** here the possible solution investigated: 1) Plant restart with DC and AC UPS enough residual battery energy 2) Portable temporary DC and AC UPS to allow plant restart 3) Portable small generator (in the range of 50 kVA) 4) Temporary generator 5) Permanent generator on platform Decision shall be made by CW and official TQ will be sent to ROS	02/10/2024	Closed
4	Non-standard	Switchgear room allows for a fire&gas sensors leading to tripping the platform.	Consider installing smoke and heat detectors and hook them up to a centralized system for alarm purpose only. E-room should be free from any combustible materials! Note: Electrical switchgear systems have their own protection barriers which will avoid sustained fires.	F&G detectors installed in each room	H2 and smoke detectors are installed. Signal to the offshore control room. Smoke detectors on air ingress (2/3) will trip ESD1D (we do not want smoke inside containers). Same as Smoke in UPS rooms. Smoke in other electrical rooms only de-energization. **RM** Consider guidelines from DEP and consequences from both wanted and unwanted shutdown.	**CW**	DEP guidelines are followed (see doc.: Design HSSE Plan *123A90-DDL-SAF-RE-30002)* , the result of actions are detailed in doc.: Fire & Gas Cause & Effect Matrix 123A90-DDL-IN-CE-40002.	25/09/2024	Closed
					Crosswind recommendations				
5	New design	Explosion and or fire	System to be transported, filled with H2 and charged batteries Review the details of the (im)possibilities of transporting the module charged or discharged and create a transportation philosophy document	BLPH will be transported without H2, since explosion risk is elevated and BESS battery charged less than 30%.	Transport has been discussed – No transport philosophy doc –SoC for BESS (~30%) **RM** Generate sea transportation philosophy document of BLPH	**MNG + T&I**	Document with the information for BLPH transport will be in ROAD MAP file present in document 123A90-DDL-TI-RE-99012: TOPSIDE YARD CHECKLIST	19/11/2024	**Closed**
6	Operational error	Wrong circuit breaker being switched or maintained, due to 66 and 6.6 kV look alike	Blackout and or wrong selection of panel to maintain Make use of colors and clear text to avoid mistake	Mistakes not possible due to proper tagging of cables and equipment	The item was referring to SCADA HMI interface not to physical tagging. Completely different physical spaces – to be addressed in SCADA – 2 step confirmation (?) **RM** Make Yokogawa aware for SCADA HMI design	**YOKO**	The HMI will show the TAG of each SWG nearest to the bus-bar and each page of feeder will show the same SWG's TAG se doc.: 1724000594-IN-DD-00028_HMI screens print out	01/10/2024	Closed
7	Standardization with Crosswind	Operators being confronted with different systems leading to confusion	Mishap in switching Ask Crosswind to share the standardized interlocking scheme for the 66 kV ring main unit Ask Crosswind to share the make and model from a WTG RMU and use at BLPH	Mitigation and recommendation taken	CW couldn't cooperate with Siemens, Hyosung provider (identical SLDs) **CW:** follow up with Hyosung to ensure coordinated operations for different system sections	**CW**	Different operational team for WTG and BLPH	19/09/2024	Closed
8	Electrical safety rules	Different contractors and package vendors will be working under different safety rules and Permit to Work systems	Come to a minimum safety standard that is valid for all working on BLPH during the commissioning phase	HSSE plan for on-shore and off-shore will be present. SIMOPS workshop will be organized.	HSSE always under control – **RM** Electrical safety operation doc to be shared with CW team before commissioning **RM** organize SIMOPS workshop	**HSE COMM**	SIMOPS workshop has been done at present of: CW representative, ROS Commissioning and Safety manager, see doc.: IMOP-MOPO report 123A90-DDL-SAF-RE-30038 for details.	25/09/2024	Closed
9	Interfacing	Incomplete understanding of system	Confusion Show TENNET 66 kV substation on SLD and interfacing signals (maybe via note) to/from BLPH	CW to reply.	Control will not receive messages from Tennet. Information can be requested to HV-SCADA on status of complete grid. In previous SW list of available messages has been provided and **CW** will update the strategy document to include BLPH with those messages.	**CW**	CWD sent the signals list to RM in October 2024	19/11/2024	**Closed**
					RM: Provide operations document		**RM:** Signal exchanged between HV-SCADA and BLPH through OPC-UA communication will be present int the 1724000594-IN-LIS-00005_ EMCS IO List (HW and SW)	01/10/2024	Closed

Sr. No.	Item	Description	Recommendation	RM Response	Comment – Execute SAFOP	Discipline	Action Response	Date	Action Status
					Crosswind recommendations				
10	New design	New control system covering ENMCS as well as process control functionality (DCS) and packages control. Control system not working as needed/expected leading to unreliable/unsafe situations	-Explore existing ENMC systems early to copy functionality into new system -Explore package control functionality early -Start development of overall control system early	PCS and SIS systems are designed in fail safe mode, so that in case of overall failure commands will be in safe condition.	**CW:** to check. Assessed – logic control of 6.6kV SWG is under review currently – remote control is avail.	**CW**	The logic control of 6.6kV SWG are defined and can be found in docs.: 1724000594-IN-SP-00019 1723002197-EL-DG-00023/25/26/27/28/29	01/10/2024	Closed
11	Fault finding	Clock of different systems not synchronized. Can't put the events that have been recorded by the different systems/packages in sequence	-Define synchronization of time/signal/power for integration of packages in BLPH and Crosswind for event sequencing	NTP server is present in BLPH for synchronizing the packages.	**CW:** to check Assessed during Control Workshop (Oct 23) – Ongoing	**CW**	NTP server is present in BLPH for synchronizing the packages, see doc.: 1724000594-IN-DD-00015_	01/10/2024	Closed
12	Isolation	Isolation of package / transformer omitted Fault not fully isolated due to LV and HV power sources	-Ensure implementation of inter-trips to isolate packages and transformers -Make use of protection DEP 33.64.10.17-Gen	Electrical intertrips have not been requested for packages (CPIs included) Intertrip signals are managed by serial connection to each CPI. To be noted that reported DEP is not contractual.	**CW:** to check Use of individual package intertrips – details to be finalized	**CW**	All intertrip via serial trip	19/09/2024	Closed
13	Freeze protection	Heat-tracing not operational when BLPH is isolated from the grid Damage to equipment	-This could be a reason to have a grid-forming capability. Understand the risk of freezing and decide if mitigation is required. -Consider Heat-tracing breakers (contactors?) with remote control. -Consider heat-tracing EF protection with high threshold	Heat tracing will be powered through DP-200N1 and have a general contactor commanded by ambient thermostat (NO remote control) 30mA RCD are provided according to project requirements	**CW:** to check No grid forming from blackstart available – Heat tracing have been discussed – to be checked	**CW**	Blackstart operations will be initiated only when weather/ambient conditions are suitable for not requiring Heat Tracing. HT is no vital load. To insert this condition on blackstart operation requirements Vital load are provided and HT was not part of it - need confirmation from RM to acknowledge it **RM reply:** confirms that HT is not part of vital loads	26/09/2024	Closed
14	Integration	Lose components not interfacing with digital protection relay. Operator confusion when system trips with no information on what caused the trip	Consider including the protection functions 86 and 87 as well as 94 into the digital protection relay	See ELECTRICAL CONTROL, PROTECTION & METERING DIAGRAMS	**CW:** to check	**CW**	All protection provided by RM is confirmed/revied see doc.: 123A90-DDL-EL-SP-20166_Electrical Protection Philosophy	01/10/2024	Closed
15	Arc flash	Switching in front of the 66 kV, 6.6 kV and 400 V switchboard due to absence of control station. Short circuit and arc flash incidents leading to trauma.	Provide a possibility to remote switch the main breakers on BLPH, with a possible safe location in the Plant Instrument Room.	CCS HMI is accessible on BLPH from the sliding monitor installed in the Server panel	**CW:** to check general rule no switching in the room – level 2 PPE required	**CW**	PPE level confirmed	19/09/2024	Closed

3.6 Appendix 2 – EPC SAFOP ACTIONS

From Execute Phase SAFOP June 12th – 13th

Appendix 2 – EPC SAFOP ACTIONS *From Execute Phase SAFOP June 12th – 13th*

Sr. No	Item	Description	Recommendation	Responsible	Actions	Discipline	Action Response	Date	Action Status
16	Document	CPI SAFOP Reports	-	CW	Share CPI SAFOP Reports with RM	**CW**	Shared	01/10/2024	Closed
17	Earthing management during island	In case of earth fault during island mode the 6.6kV bus will move from TN to IT network.	The strategy is to sequentially open the 6.6kV breakers to exclude packages/lines. Max time limit of ~8h not to generate dangerous voltages, procedures on BLPH might take ~1min.	RM	**RM**: Check voltage specs with CT, VT and switchgear manufacturers.	**RM**	**RM:** As per test report : - CTs are tested at 20 kV 50 Hz, 60 s - VTs are tested at 20 kV, 100 Hz, 60 s - the entire switchgear is fully tested at 20 kV, 50 Hz, 60 s Testing voltage is well above the maximum voltage (11.43 kV) during a phase to ground failure in case of IT operation. Moreover, protection tripping time is lower than 2 s. *(see all certification attached to IR-IME-2197-01)*	25/09/2024	Closed
					RM: Share previous experiences with 59(N) protection for IT earth faults.		**RM:** Examples from previous projects have been shown during a dedicated meeting done after SAFOP workshop.	13/06/2024	Closed
					RM: Check internally with specialist on ferro-resonance and possible addition to the model		**RM:** Considerations relevant to the ferro resonance have been shared via mail, clarifying that this problem is not expected on the project due to the limited extension of the 6.6 kV network.	10/07/2024	Closed
				CW	**CW**: Share paper on phenomenon of ferro-resonance	**CW**	**CW** shared the ferro resonance paper.	10/07/2024	Closed
18	Protection during island	Protection of BLPH during island → low SC current	ENSOL will be developing a model for load flow and SC analysis - RM checked on load flow and SC but ONLY for BLPH not for anything 'above' the interface.	CW	Engage with ENSOL for model developing	**CW**	ENSOL model study will not take place	19/09/2024	Closed
19	Protection coordination relay BLPH	-	Protection specialist is working on it this week, next week will be available for review.	RM	Share protection coordination study for review	**ELE**	Please refer to the document 123A90-DDL-EL-RE-20168 - Electrical Protection Relay Selectivity Study Repor.	25/09/2024	Closed
20	EMCS & Alarm management	Alarm management philosophy is a project requirement but it has not been developed fully yet. There is one for process control. Electrical is still missing.	Will there be 24/7 monitoring? All alarms are collected and communicated to CCS but currently there is not yet a defined strategy on how to distribute it to "outside world" ERP - Emergency response plan will be available for BLPH	CW (CPI)	**CW:** Provide alarm lists with "priority" and expected operator follow-up reaction.	**CW**	Overall BLPH Alarms are listed in the Master Alarm Database (123A90-DDL-IN-LIS-40027 - Master Alarm Database); Elogen alarm list ELO-INN-BPH-OTH-00007 **RM share the document 1724000594-IN-LIS-00004 for CrossWind use.**	19/11/2024	**Closed**
				RM	**RM:** Develop electrical alarm management philosophy .	**ELE**	Electrical alarm managment philosphy is present in doc.: 123A90-DDL-EL-LIS-20156		**Closed**
21	Alarm management	Batteries and UPS will be in the same room	Tripping strategy for smoke detection in UPS room	CW/RM	Pending on the assessment of the risk of having a sustained fire in the UPS room, determine if tripping on smoke detection is a requirement.	**HSE + INS**	The risk analysis (Electrical/Iter Containers – Fire duration calculation 123A90-DDL-SAF-CA-30047) was done demonstrate no escalation from internal to external of containers is credible.	01/10/2024	Closed
							Relating the B-300 (UPS container) anyhow the platform abandon will be started to avoid operation without vital system according to HSE Design Philosophy 123A90-DDL-SAF-RE-30046 and Fire & Gas Cause & Effect Matrix 123A90-DDL-IN-CE-40002.		Closed
22	Commissioning	Commissioning of BLPH done in steps	Precom: IO list, checking all the switchgears and boards 1st step: connecting 400V aux from external source 2nd step: connecting after transformer on 6.6kV energize aux transformer, close aux circuit breaker.	RM	Share the commissioning schedule and activity plan	**COMM**	OTP's detailing the commissioning activities planned for the 400V Switchboard SG-200N1 and 6,6kV Switchgear SG-100D1 prepared and issued to CW. Ref. 123A90-PML-COM-PRO-03047 _ OTP - LV Switch Boards and LV Distribution Board Systems and 123A90-PML-COM-PRO-03046 _ OTP - 6.6 kV Switchgear & Transformer Systems. The schedule for all activities is detailed on project baseline schedule with breakdown by respective sub-systems.	01/10/2024	Closed
23	Commissioning	66kV cable termination	What tests will be performed on the cable connection between TP and 66kV switchgear? Company terminating and connecting cable to supply required qualifications. Cable connecting the SWG and the connection point with the subsea cable (stored in TP during transport) should be IEC tested in the yard, to avoid re-test offshore. Note: monopile has the 66 kV cable installed with surplus length. Verify if it can be routed directly to the 66 kV switchgear.	RM	Provide test results Supervise tests of connection cable	**CONSTR/QUA**	Test results will be included into the doc.: 123A90-PML-QHSE-RE-00115 - Mechanical Completion Final Dossier (ITR A). RM confirms the supervision of tests. Detail of location and regulations is present in the doc.: 123A90-DDL-EL-TBE-20055, according to Vendor procedure	07/01/2024	**Closed**
24	Commissioning	Yard commissioning	For the integrating testing 5MVA across 4 generators in parallel with 2 step-up transformers and load bank 1MW Procurement is ongoing. Planning is finalizing to generate a contract in few weeks. BESS powers won't be able to be given back to the grid. Synchronization will be done via generators.	RM	Finalize and share plan for yard commissioning (generators, load bank procurement)	**COMM**	Information will be included in doc.: 123A90-PML-COM-SP-03014 _ Commissioning - Temporary equipment and Facilities.	01/10/2024	**Ongoing**
25	Commissioning	Yard commissioning – H2 operation	Expectation is to finalize all the packages installation before introducing H2 in the system. Generally, sensors are tested with actual calibrated H2 or CH4 to ensure proper reading.	RM	Define H2 operations for commissioning in the yard and offshore.	**COMM**	RM confirm that before start the CPIs and move the H2 in the BLPH, sensors are tested according to Vendor procedure and the central system will work correctly upon receipt of the "anomaly". (ATEX inspection fire brigade) Yard document : 123A90-PML-COM-PRO-03019 Offshore document: 123A90-PML-COM-PRO-03007	12/12/2024	**Ongoing**
26	Commissioning	Preparation for sailing/transport	Sail away plan will be developed. UPS will be fully charged. H2 storage fully discharged and fully inerted. BESS should be around 30% SOC. There will be no power during transport. -> blind transport Every requirement from CPI or other packages is expected. NAVAID battery will be fully charged.	RM CW	Sail away plan development Share sail away/transport requirement of CPIs	**LOGISTIC**	Document with the information is ROAD MAP file present in document 123A90-DDL-TI-RE-99012 _ TOPSIDE YARD CHECKLIST	01/10/2024	**Closed**
27	66kV -GIS	It will be partially commissioned in the Yard. Canister with filling gas will be provided by supplier for partial refill.	Recommended to have it fully tested before sail away. CW representative to witness FAT.	RM	Prepare a table listing risks of commissioning activities to be repeated offshore – All the offshore tests will be performed without power on the GIS	**COMM**	All onshore and offshore commissioning activities will be detailed within dedicated OTP, doc. N. 123A90-PML-COM-PRO-03045 _ OTP - HV Switchgear and 66 kV Transformer Systems. Yard activities also defined within vendor SAT doc. N. 1723001595-QC-PRO-00028 _ Site acceptance test (SAT) procedure.	01/10/2024	**Closed**
28	Metering	Smart metering for BLPH	Smart/fiscal metering was not considered for the platform. Existing protection and control relay (REX640 and REF615) has embedded functions for monitoring power and energy exchanged.					12/08/2024	Closed

Sr. No	Item	Description	Recommendation	Responsible	Actions	Discipline	Action Response	Date	Action Status
29	CPI control	Control strategy for power request	Currently discussion was always on providing ">1MW" 99% of the time. However, control EMCS should take into consideration both P (kW) and Q (kVAR) to be communicated to CPIs (BESS in particular)	RM	**RM**: Define the setpoint given to CPIs based on information exchange with WTG.	**ELE**	V and Q is not controlled when the BLPH is connected to the Wind Farm; only P setpoint will be passed to each CPI. V control is active only in Emergency Mode through the BESS control system (not managed by BLPH). Q value will be shown on HMI. See doc.: 1724000594-IN-SP-00019 _EMCS Software Functional Design Specification (FDS-SW).	01/10/2024	Closed
				CW	More definition needed on control strategy for V, P & Q. **CW**: define what is WTG contribution to Q		Control Strategy Power Request – as discussed with e Crosswind Windfarm team, the BLPH EMCS only needs to consider P (kW) – the windfarm looks after Q (kVAr). When the BLPH is in "island Mode", the BESS will need to consider Q for running Aux. loads on the platform.	19/11/2024	**Closed**
30	Hotspot measurement	6.6kV SWG has hotspot measurement in each of the SWG columns	There are multiple sensors located in the best spots (according to manufacturer) The connected reaction is a simple alarm and not a trip. These devices are generally used to predict long term maintenance (20+ yrs) Suggested to exclude it from future project unless strictly necessary for economical purposes AND to have it installed but not connected in the current layout to avoid additional commissioning and maintenance.		Decision on hotspot measurements use and commissioning.	**CW**	Use hot spot measurement as pure monitoring system no action linked to them	19/09/2024	Closed
31	6.6kV SWG	Lock out relays reset management	The relay is able to reset from shore - After a 3ph fault the system CAN be reset remotely.	RM	Define control philosophy and operators access management.	**CW**	RM confirms the possibility to reset from shore the 6.6kV relays, from HMI (password protected); HMI access shall be granted via MFA.	01/10/2024	Closed
			The logic and philosophy documents will be specifying on operators actions.	CW			Lock out relays – reset management – as described in the Electrical Protection Philosophy (doc. No. 123A90-DDL-EL-SP-20166) - Tripping Requirements (86). Protection trips shall be via local or remote reset, lockout relay functions (86). All alarms should be able to be reset/acknowledged remotely. One lockout relay shall lock out the primary switching device and the other lockout relay shall lockout the secondary switching device. The associated Logic Diagrams for SG-100D1 6.6kV Switchgear show the rest interface logic	19/11/2024	**Closed**
			SUGGESTION to have some sort of 'barrier' to ensure only dedicated operators can reset it. SCADA from Yokogawa is password protected and one can choose the access level.						
32	Solar Feeder	Specs and ratings of connections equipment	Due to IT management of network on solar farm, in case of earth faults the voltage would rise from 800VAC to 1385VAC. Can the switchboard withstand the voltage (SG-200D2) – rated for 3kV but what is the operating voltage? ABB seems to be rated for 690VAC with max voltage 1000VAC.	RM	To check on devices/ratings.	**ELE**	The EMAX version (Sace EMAX 2/E9) installed in the switchgear SG-200D2 has a rated voltage of 900 V. CW confirms that earth fault detection and command are present in Solar Farm package. Waiting for confirmation of OoE design.	01/10/2024	**Closed**
			Strongly recommended to trip the system on detection of earth fault to limit damages.	CW/OoE		**CW**			**Ongoing**
			Need to be checked with OOE for ability to trip low voltage when they have fault.	OoE		**CW**			**Ongoing**
33	Solar interface	Subsea cable might not have circular external profile	Define the interface to properly design junction box on BLPH for cable entry, cable glands.	RM/CW	Coordinate with OOE with the support of CW	**ELE + CW**	The connection between the Solar Farm Subsea cable and platform cable will be done trought Junction Box, only the power conductors (round shape) will be entering in the junction box. For detail see TDS cable 240213_RJIT-O 18_3 (36) kV NKT.	01/10/2024	Closed
34	AUX	5x3x(1x300)+3x(1x300) cables lay-down	Ensure clear instructions are given to installers for trefoil configuration of phases (L1,L2,L3)	RM	Provide clear instruction for cable layout	**COSTR**	See doc.:123A90-DDL-EL-DD-20092 - Electrical Typical Installation Details - Power System and Cable Installation Ref. Code C05A and C06 (sheet 9 and 10) and according to cable ladder section view (L-750-101-LVT-001) on sheet 07of18 doc.: 123A90-DDL-EL-DL-20108 - Electrical Cable Routing Layout Lower deck.	01/10/2024	Closed
35	Fire safety	No paper allowed in LV and MV switchgear rooms	To avoid spreading/generation of fires no combustibles (including paper documents/ schematics) should be present in the containers. Operators to ensure removing them after maintenance operations.	RM	Ensure correct procedure/check in place to avoid combustible materials in switchgear rooms.	**MNG**	Recommendation will be present in the platform operating manual doc.: 123A90-DDL-PR-MAN-80001 _ Operations and Maintenance Manuals	12/02/2025	**Closed**
36	Fuse – Contactor combo for protection		Check design of fuse + contactor (curves intercepts) considering the SC levels to minimize the risk of accidental fuse trip and ensure correct selectivity. Is the contactor's rating Fault-making or -breaking?	RM	Check design and selectivity	**ELE**	Fuses are properly selected and coordinated with the contactors, as per ABB instructions, to prevent contactor operation at too high currnets that could damage the contactor itslef. Contactor will open currents lower that the maximum admissible value. Refere to the document 123A90-DDL-EL-RE-20168 _ Electrical Protection Relay Selectivity Study Report.	01/10/2024	Closed
37	Fuel cell transformer interface		Clarify the interface with the incoming transformer MV cables – space requirements and connections	RM/CW/Ballard	Coordinate with Fuel Cell	**ELE/CW/Ballard**	Interface space on MV connection point is clarified according to attached document Power Interface Connection 10 F. Container and as reported in the points 55/55a/55b in Electrical Weekly Meeting MoM	19/09/2024	Closed
38	Electrolizer	Latest interface schematics and transformer connections	Review the latest drawings received from Fores. Review SAFOP open points with Fores to ensure implementation	CW	Review SAFOP open points with Fores to ensure implementation	**CW**	Refer to C63-ELE-002 Electrical Single Line Diagram Power distribution for overview, ELO-INN-BPH-PLN-00011 NIDEC_C63-NID-ELO-DED01_A.5 Detailed Electrical Drawing for Rectifier and Transformer detailed information and FORES-INN-BPH-DWG-00029 Power and Control Panel Layout & Single Line Diagram and FORES-INN-BPH-DWG-00028 LV Single Line Diagram for the complete wiring and SLD's.	21/01/2025	**Closed**
39	Electrolizer	Grounding of piping system	Due to floating system of stacks, necessity to ensure proper insulation of metal piping for gas and liquid from ground. Electrolizer should list requirements and RM should study solutions to accommodate	CW	Coordinate with electrolizer on requirements and solutions around piping grounding	**CW**	The Grounding system layout and details (C0063-FOR-LAY-EL-003) document created by Fores (with input of Elogen) describes the grounding/earthing philosophy for the Process piping. This documents proves all piping (for gas and liquid) are bonded and connected to earthing.	21/01/2025	**Closed**
40	BESS	Neutral connection to ground missing	Previous electrical system schematic showed direct connection between transformer 2nd start center with PE. On current design this connection is missing. Need explanation and strategy to manage faults. Need explanation on why connecting transformer star center to DC bus mid-point.	CW	Confirm neutral point connection and grounding strategy with BESS	**CW**	There was a mistake on drawings, PE and neutral Trafo are actually connected. See latest electrical drawings 10354_23A2007_Statron_Shell Crosswind BESS FQ 1MW 5MWh Offshore_20240809_V0.7 (1) – (final version to be shared officially via Aconex)	03/10/2024	Closed
41	Interfaces	SW interface with packages	Missing definition of SW interfaces and interactions between EMCS and packages.	RM	Define SW interfaces	**YOKO**	SW interfaces are developed and will be tested during Pre-Commissioning / Commissioning in Yard.	01/10/2024	Closed
42	Interfaces	Interface with WTGs, BLPH and TENNET	The interfaces were discussed as a reaction to opening of CBs located on different points on the 66kV network. Further discussion in dedicated coordination workshops will clarify what is the signal exchange between parties and what are the consequences on the different packages in case of a trip on the 66kV network.	RM/CW	Follow up during coordination workshops	**CW / ROS / YOKO**	BLPH doesn't have any interface with TENNET. Communication between EMCS and HV-SCADA will be via OPC-UA protocol; list of signals already been agreed with CW and interface will be tested off-shore.	01/10/2024	Closed
43	Maintenance operations	Ordinary and extraordinary maintenance procedures	During planned maintenance electrolizer and fuel cell will be off and the H2 system will remain pressurized, creating exclusion zones. During unplanned maintenance activities, to ensure operators safety, BLPH will receive a ESD1D command (emergency stop with depressurization), the incoming breaker will open, so operators will be able to safely board the platform. Suggestion is to re-address this with the team (incl. HHSE) as this could lead to more risks rather than reduce them. Suggestion is to blow out the H2 from the equipment , excluding the H2 tanks, and keep the whole electrical distribution system live and have the possibility of remote monitoring.	RM	Reconsider the risks connected to the maintenance strategy and the need for complete ESD1D during extraordinary maintenance.	**PROCC / HSE / INS / ELE / MNG**	The maintenance strategy and the correlated risk was analyzed during the SCTA workshop (at present of CW, RM and external third parties) and the results are reported in doc.: Safety Critical Task Analyses Report 123A90-DDL-SAF-RE-30040.	01/10/2024	Closed

3.7 Attachment– SAFOP ACTIONS

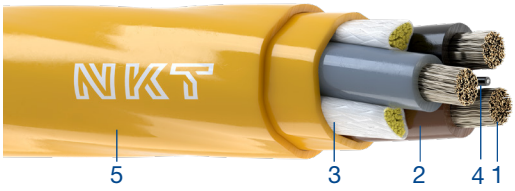
RJIT-O 1,8/3 (3,6) kV

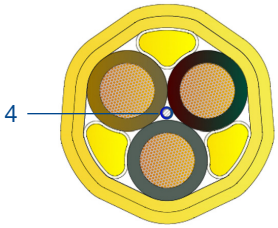
Dynamisk kraftkabel

Dynamic power cable

Standard: IEC 60502-1 i tillämpliga delar

Standard: IEC 60502-1 in applicable parts





Konstruktion:

Construction:

1 Ledare: Flertrådig glödgad förtent koppar enligt IEC 60228 klass 5: Rund.
Conductor: Annealed and tinned copper according to IEC 60228 class 5: Round.

2 Isolering: Termoplastisk polyester elastomer
Partfärger:
3-ledare: Brun, svart, grå.
Insulation: Thermoplastic polyester elastomer
Colour identification:
3-core: Brown, black, grey.

3 Inre fyllnad: Aramidgarn.
Inner filler: Aramid yarn.

4 Nanokabel (12 fiber).
Nano cable (12 fibers).

5 Mantel: Gul polyuretan
Märkning exempel: RJIT-O 3x50 1,8/3 (3,6) kV samt metermärkning.
Sheath: Yellow polyurethane
Example of marking: RJIT-O 3x50 1,8/3 (3,6) kV and meter marking.

Användning:

Application:

Kablar enligt denna standard är avsedda för förläggning i vatten. Kablarna är flexibla vilket gör dem användbara i tillämpningar med rörliga stationer/platformar, även i havsvatten.

Cables according to this standard are intended for permanent installation in water. The cables are flexible which makes them suitable for applications with moving stations/platforms, also for offshore use.

Egenskaper:

Properties:

Spänning Rated voltage	1,8/3 (3,6) kV
Max. ledartemperatur Max. conductor temperature	90°C vid kont. drift 90°C continuous
Max. kortslutningstemperatur Max. short circuit temperature	250°C
Min. förläggningstemperatur Min. temperature for laying	-10°C
Högsta tillåtna dragkraft vid utdragning Maximum pulling force	30 N/mm^2
Min. lagringstemperatur Min. storage temperature	-40°C

Min. böjningsradie Min. bending radius	8xD
CPR brandklass CPR fire class	F_{ca}
RoHS	2011/65/EU
REACH	2006/121/EC

02/2024

Tekniska data
Technical data

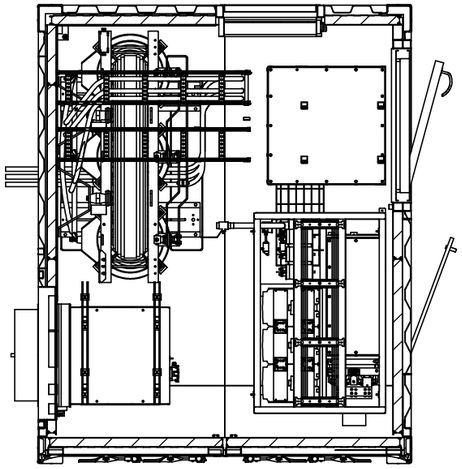
Ledarantal och area No. of cores and cross-section (mm²)	**Förpackning/ lev.längd** Packaging, delivering length	**Ledare (diameter över)** Nominal Conductor diameter (mm)	**Isolering (diameter över)** Nominal insulation diameter (approx.) (mm)	**Yttre diameter (ca)** Outer diameter (approx.) (mm)	**Ca vikt** Cable mass approx. (kg/km)	**Resistans** Resistance (Ω/km)	**Kapacitans** Capacitance (µF/km)	**Nominellt strömvärde i luft** Nominal load current in air (A)
3x50	Trumma/drum 500 (K18)	9,5	14,5	40	2300	0,393	0,62	192
3x95	Trumma/drum 500 (K20)	12,8	17,8	47	3600	0,210	0,81	298
3x120	Trumma/drum 500 (K22)	14,1	19,1	50	4400	0,164	0,88	346
3x150	Trumma/drum 500 (K24/28)*	16,0	21,0	54	5300	0,132	0,98	399
3x185	Trumma/drum 500 (K24)	17,6	22,6	58	6300	0,108	1,07	437

(*)
600 m: K24 (kabelvikt~3700 kg & trumman klarar 5000 kg)
1400 m: K28 (kabelvikt~8200 kg & trumman klarar 12000 kg)
600 m: K24 (kabelmass~3700 kg & the drum handles 5000 kg)
1400 m: K28 (kabelmass~8200 kg & the drum handles 12000 kg)

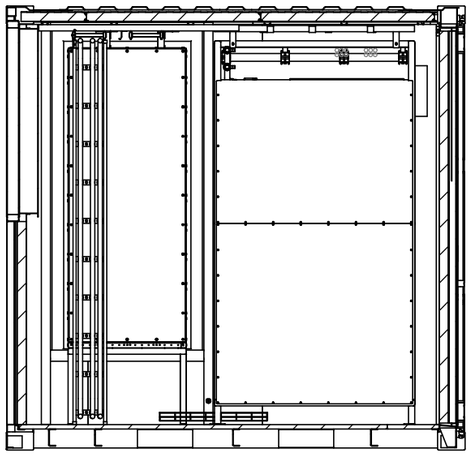
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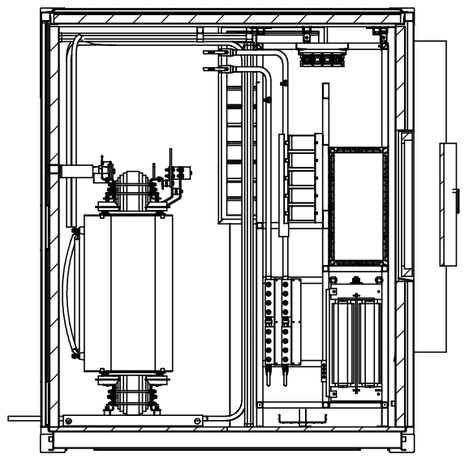
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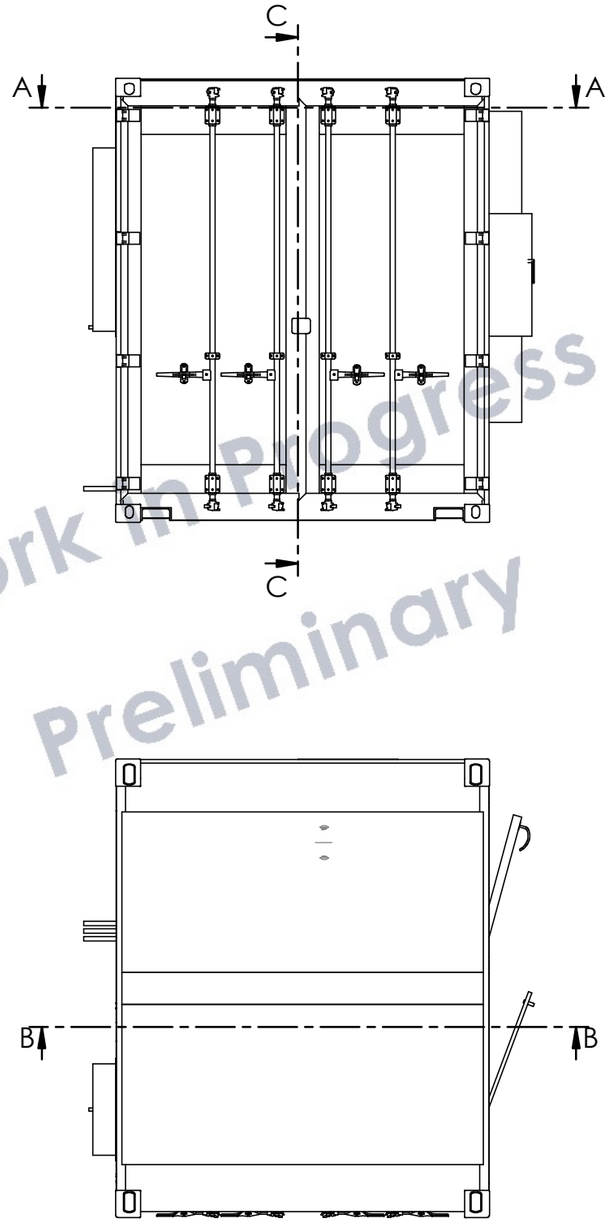
SECTION A-A

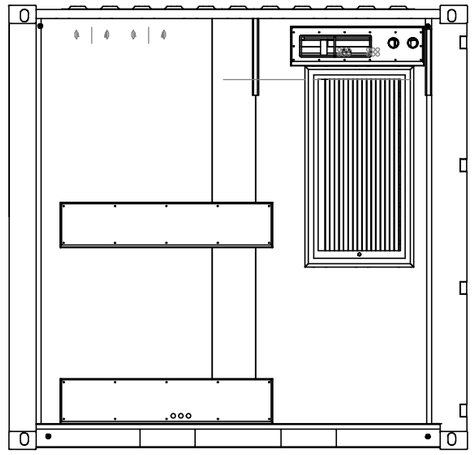


SECTION C-C



SECTION B-B





Work in Progress
Preliminary

MATERIAL

Material must comply to Directive 2002/95/EC of the European Parliament (RoHS) and to Regulation (EC) No 1907/2006 of the European Parliament (Reach)

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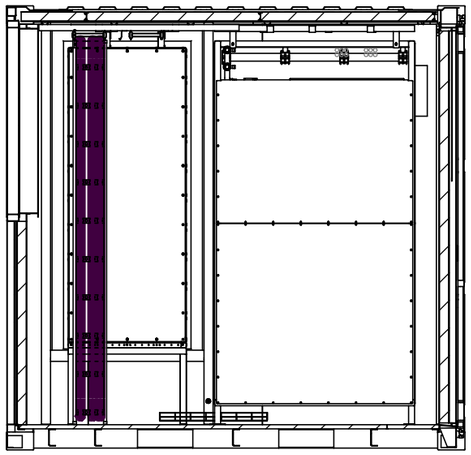
Power Interface Connection 10 F. Contain

		By	Date
Tolerances for linear and angular dimensions without individual tolerance according to DS/EN 22768-1 m	Drawn	NSV	15-11-2023
Surface appearance, if not specified, according to reference table LZT 142 0001, category 6	Revision		
	Released		

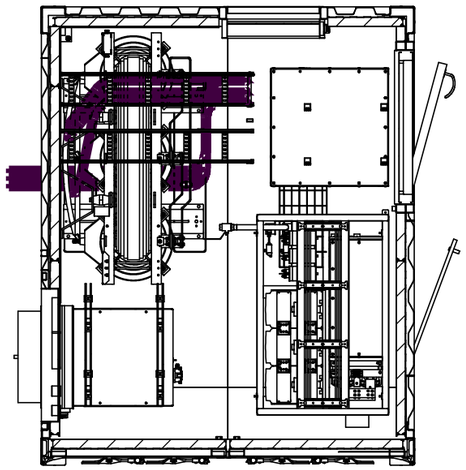
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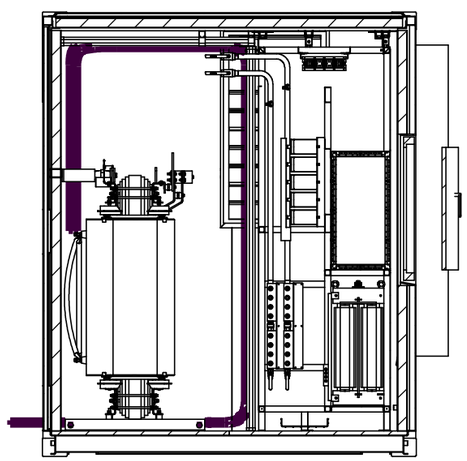
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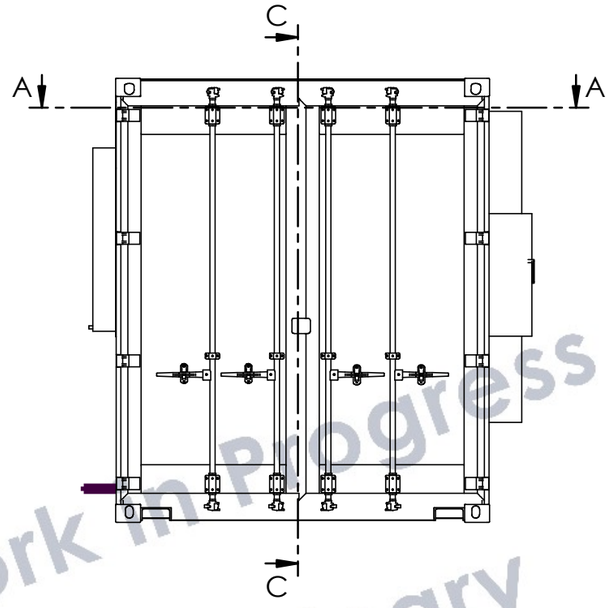
SECTION C-C

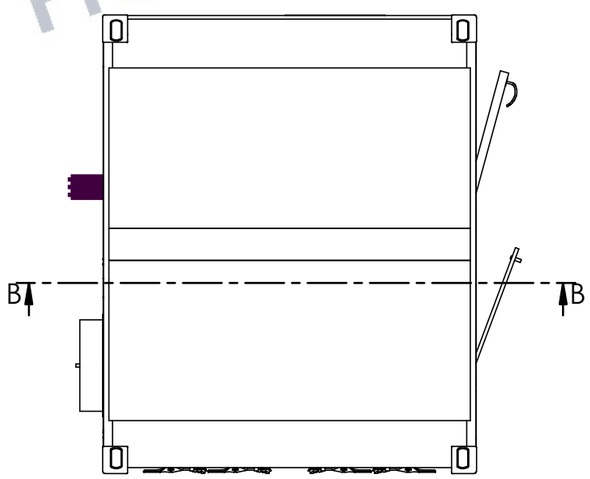


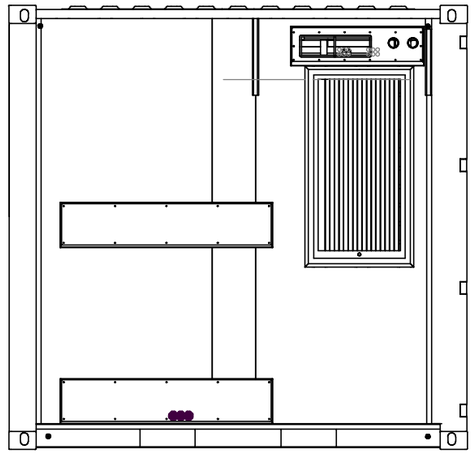
SECTION A-A



SECTION B-B







Work in Progress
Preliminary

MATERIAL

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Tolerances for linear and angular dimensions without individual tolerance according to DS/EN 22768-1 m		By	Date
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Surface appearance, if not specified, according to reference table LZT 142 0001, category 6	Revision		
	Released		

Power Interface Connection 10 F. Contain

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WEIGHT		SIZE	SHEET	SCALE	PART NUMBER:	REVISION
3982369 g	1st angle projection	A3	1/1	1:40	Power Interface	Connec

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info@freqcon.com

Customer:	Statron	
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Type:	BESS MSC-1000-620-8	
Product	CONVERTER CONTAINER	
Circuit diagram No:	10354_23A2007	20240809_V0.7

Producer (company):	Freqcon GmbH	53396
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore	CT_Ausbau_1 53457 CT_Ausbau_2 53765
Type:	BESS MSC-1000-620-8	CONV 53399
Project manager:	Freqcon_CP	

created on:	17.09.2019			
edited on:	09.08.2024	edited by:	Freqcon_DG	total pages: 482

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&EAB		Contents		
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	2	INDEX	02.07.2024	Freqcon_JD
	3	INDEX	02.07.2024	Freqcon_JD
	4	INDEX	02.07.2024	Freqcon_JD
	5	INDEX	02.07.2024	Freqcon_JD
	6	INDEX	02.07.2024	Freqcon_JD
	7	INDEX	02.07.2024	Freqcon_JD
	8	INDEX	02.07.2024	Freqcon_JD
	9	INDEX	02.07.2024	Freqcon_JD
	10	INDEX	02.07.2024	Freqcon_JD
	11	INDEX	02.07.2024	Freqcon_JD
	12	INDEX	02.07.2024	Freqcon_JD
	13	INDEX	02.07.2024	Freqcon_JD
&EAC		Explanatory documents		
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	18	MV-TRANSFORMER UNIT_01+02	18.06.2024	Freqcon_JD
	18a	TEMPERATURE TRANSFORMER UNIT_01+02	18.06.2024	Freqcon_JD
&EFS ++CONV		Circuit diagram Converter		
	78	GRID CONNECTION	18.06.2024	Freqcon_JD
	80	BG CIRCUIT BREAKER 1000A AC GRID	18.06.2024	Freqcon_JD
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	203	IGBT & INDUCTOR FOR GRID PHASE 3	18.06.2024	Freqcon_JD
	207	IGBT & INDUCTOR SUB 3_1 - 3_3	18.06.2024	Freqcon_JD
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	227.a	SUBSYSTEM 3_1 - 3_1 DC 3 x 250A	18.06.2024	Freqcon_JD
	228	DC SURGE ARRESTER 3_1 - 3_3	18.06.2024	Freqcon_JD
	231	SUBSYSTEM 2_1 - 2_3 DC 3 x 250A	18.06.2024	Freqcon_JD
	231.a	SUBSYSTEM 2_1 - 2_3 DC 3 x 250A	18.06.2024	Freqcon_JD
	237	SUBSYSTEM 4_1 - 4_3 DC 3 x 250A	18.06.2024	Freqcon_JD
	237.a	SUBSYSTEM 4_1 - 4_3 DC 3 x 250A	18.06.2024	Freqcon_JD

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	238b	DC SURGE ARRESTER 4_1 - 4_3	18.06.2024	Freqcon_JD
	260	SMOKE DETECTOR	18.06.2024	Freqcon_JD
	279	CONVERTER CABINET CLIMATE	18.06.2024	Freqcon_JD
	281	CIRCUIT BREAKER CABINET CLIMATE	18.06.2024	Freqcon_JD
&EFS ++CT		Circuit diagram Control cabinets		
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	113b	ETHERNET / PROFINET ISOLATOR	18.06.2024	Freqcon_JD
	114	HELMHOLZ	02.07.2024	Freqcon_JD
	115	UMTS ROUTER	18.06.2024	Freqcon_JD
	120	ET200 24V DC	20.06.2024	Freqcon_JD
	121	ET200SP DIGITAL INPUTS DI_01 - DI_03	14.06.2024	Freqcon_JD
	122	ET200SP DIGITAL INPUTS DI_04 + DI_05	14.06.2024	Freqcon_JD
	123	ET200SP DIGITAL OUTPUTS DO_01 - DO_03	14.06.2024	Freqcon_JD
	123.a	ET200SP DIGITAL OUTPUTS DO_01 - DO_03	18.06.2024	Freqcon_JD
	124	ET200SP ANALOG INPUTS AI_01 - AI_03	14.06.2024	Freqcon_JD
	125	ET200SP ANALOG INPUTS AI_04	14.06.2024	Freqcon_JD

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&EFS ++CT		Circuit diagram Control cabinets		
	126	INPUTS CONTROL ELEMENTS	02.07.2024	Freqcon_JD
	127	DIGITAL INPUTS CB 1	18.06.2024	Freqcon_JD
	128	DIGITAL INPUTS CB 2	18.06.2024	Freqcon_JD
	129	DIGITAL INPUTS SUBSYSTEM 2_1 / 2_2	18.06.2024	Freqcon_JD
	130	DIGITAL INPUTS SUBSYSTEM 2_3 / 3_1	18.06.2024	Freqcon_JD
	131	DIGITAL INPUTS SUBSYSTEM 3_3 / 4_1	18.06.2024	Freqcon_JD
	132	DIGITAL INPUTS SUBSYSTEM 4_2 / 4_3	18.06.2024	Freqcon_JD
	133	DIGITAL INPUTS SPARE	18.06.2024	Freqcon_JD
	134	DIGITAL INPUTS SMOKE DETECTORS	18.06.2024	Freqcon_JD
	135	OUTPUTS FAN	19.06.2024	Freqcon_JD
	136	OUTPUTS COMMUNICATION	02.07.2024	Freqcon_JD
	137	OUTPUTS CIRCUIT BREAKER	18.06.2024	Freqcon_JD
	138	OUTPUTS CONTROL ELEMENTS	01.07.2024	Freqcon_JD
	139	OUTPUTS COOLING	14.06.2024	Freqcon_JD
	140	OUTPUTS CONTROL ELEMENTS	14.06.2024	Freqcon_JD
	145	ANALOG INPUTS (TEMPERATURE SUBSYSTEM 1_1 -1_3)	14.06.2024	Freqcon_JD
	146	ANALOG INPUTS (TEMPERATURE SUBSYSTEM 1_4 -1_6)	18.06.2024	Freqcon_JD
	147	ANALOG INPUTS CABINET TEMPERATURE	18.06.2024	Freqcon_JD
	148	ANALOG INPUTS COOLING WATER TEMPERATURE	18.06.2024	Freqcon_JD
	149	ANALOG INPUTS MEASURING VOLTAGE	18.06.2024	Freqcon_JD
	150	OUTPUTS DC CONTACTORS 2_1	18.06.2024	Freqcon_JD
	151	OUTPUTS DC CONTACTORS 2_2, 2_3	18.06.2024	Freqcon_JD
	160	INTERFACE HVIO 1	18.06.2024	Freqcon_JD
	161	INTERFACE HVIO 2	18.06.2024	Freqcon_JD
	162	INTERFACE HVIO 2 ANALOG	18.06.2024	Freqcon_JD
	163	INTERFACE HVIO 3	18.06.2024	Freqcon_JD
	164	INTERFACE HVIO 4	18.06.2024	Freqcon_JD

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&EFS ++CT		Circuit diagram Control cabinets		
	171	PRE-CHARGING UDC	18.06.2024	Freqcon_JD
	173	DISCHARGE UDC	18.06.2024	Freqcon_JD
	181	WATER SYSTEM	18.06.2024	Freqcon_JD
	182	HEAT EXCHANGER	18.06.2024	Freqcon_JD
	183	Supply for cabinet fan	18.06.2024	Freqcon_JD
	185	FAN / HEATING CONTROL CABINET	18.06.2024	Freqcon_JD
	186	THERMOSTAT	18.06.2024	Freqcon_JD
	187	24V DC SUPPLY CB	18.06.2024	Freqcon_JD
	188	24V DC SUPPLY CON / CB GRID	18.06.2024	Freqcon_JD
	189	TEST TERMINAL BLOCK	18.06.2024	Freqcon_JD
	190	CONTAINER COOLING, LIGHT 230V SUPPLY	14.06.2024	Freqcon_JD
	191	CONTAINER COOLING	18.06.2024	Freqcon_JD
	195	SHUTDOWN CIRCUIT BREAKERS, DC CONTACTORS	18.06.2024	Freqcon_JD
	278	CONTROL CABINET CLIMATE	18.06.2024	Freqcon_JD
	306	Feedback DC contactors 1_4 - 1_6	18.06.2024	Freqcon_JD
	307	Feedback DC contactors 2_1 - 2_3	18.06.2024	Freqcon_JD
	308	Feedback DC contactors 2_4 - 2_6	18.06.2024	Freqcon_JD
	350	OUTPUTS DC CONTACTORS SUBSYSTEM 3_1	18.06.2024	Freqcon_JD
	351	OUTPUTS DC CONTACTORS SUBSYSTEM 3_2 - 3_3	18.06.2024	Freqcon_JD
	352	OUTPUTS DC CONTACTORS SUBSYSTEM 4_1	18.06.2024	Freqcon_JD
	353	OUTPUTS DC CONTACTORS SUBSYSTEM 4_2 - 4_3	18.06.2024	Freqcon_JD
	440	PIII PROFINET IGBT IRT INTERFACE 1	18.06.2024	Freqcon_JD
	441	PIII PROFINET IGBT IRT INTERFACE 2	18.06.2024	Freqcon_JD
	442	PIII PROFINET IGBT IRT INTERFACE 3	18.06.2024	Freqcon_JD
	443	PIII PROFINET IGBT IRT INTERFACE 4	18.06.2024	Freqcon_JD

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&EFS ++Container		Circuit diagram		
	190	CONTAINER INSTALLATION	18.06.2024	Freqcon_JD
&EPC ++TRA		Parts List medium voltage transformer		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CONV		Parts List Converter		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CONV +CON		Parts List Converter Converter cabinet		
	1	PARTS LIST	02.07.2024	Freqcon_JD
	2	PARTS LIST	02.07.2024	Freqcon_JD
	3	PARTS LIST	02.07.2024	Freqcon_JD
	4	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CONV +IND		Parts List Converter Inductor cabinet		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CONV +CIR		Parts List Converter Circuit Breaker cabinet		
	1	PARTS LIST	02.07.2024	Freqcon_JD
	2	PARTS LIST	02.07.2024	Freqcon_JD
	3	PARTS LIST	02.07.2024	Freqcon_JD
	4	PARTS LIST	02.07.2024	Freqcon_JD
	5	PARTS LIST	02.07.2024	Freqcon_JD
	6	PARTS LIST	02.07.2024	Freqcon_JD
	7	PARTS LIST	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EPC ++CONV +CIR		Parts List Converter Circuit Breaker cabinet		
	8	PARTS LIST	02.07.2024	Freqcon_JD
	9	PARTS LIST	02.07.2024	Freqcon_JD
	10	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CONV +AC_DC		Parts List Converter AC and DC connection cabinet		
	1	PARTS LIST	02.07.2024	Freqcon_JD
	2	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT		Parts List Control cabinets		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1.1		Parts List Control cabinets Control cabinet 1 Cabinet door		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1.2		Parts List Control cabinets Control cabinet 1 Left side		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1.3		Parts List Control cabinets Control cabinet 1 Main mounting plate		
	1	PARTS LIST	02.07.2024	Freqcon_JD
	2	PARTS LIST	02.07.2024	Freqcon_JD
	3	PARTS LIST	02.07.2024	Freqcon_JD
	4	PARTS LIST	02.07.2024	Freqcon_JD
	5	PARTS LIST	02.07.2024	Freqcon_JD
	6	PARTS LIST	02.07.2024	Freqcon_JD
	7	PARTS LIST	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EPC ++CT +CTRL_1.3		Parts List Control cabinets Control cabinet 1 Main mounting plate		
	8	PARTS LIST	02.07.2024	Freqcon_JD
	9	PARTS LIST	02.07.2024	Freqcon_JD
	10	PARTS LIST	02.07.2024	Freqcon_JD
	11	PARTS LIST	02.07.2024	Freqcon_JD
	12	PARTS LIST	02.07.2024	Freqcon_JD
	13	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1.4		Parts List Control cabinets Control cabinet 1 Right side		
	1	PARTS LIST	02.07.2024	Freqcon_JD
	2	PARTS LIST	02.07.2024	Freqcon_JD
	3	PARTS LIST	02.07.2024	Freqcon_JD
	4	PARTS LIST	02.07.2024	Freqcon_JD
	5	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1.5		Parts List Control cabinets Control cabinet 1 above		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_1		Parts List Control cabinets Control cabinet 1		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL_2.1		Parts List Control cabinets Control cabinet 2 Cabinet door		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPC ++CT +CTRL.4		Parts List Control cabinets		
	1	PARTS LIST	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EPC ++FAN		Parts List FAN		
	1	PARTS LIST	02.07.2024	Freqcon_JD
&EPA ++TRA		Summarized part list medium voltage transformer		
	1	SUMMARIZED PARTS LIST	02.07.2024	Freqcon_JD
&EPA ++CONV		Summarized part list Converter		
	1	SUMMARIZED PARTS LIST	02.07.2024	Freqcon_JD
	2	SUMMARIZED PARTS LIST	02.07.2024	Freqcon_JD
&EPA ++CT		Summarized part list Control cabinets		
	1	SUMMARIZED PARTS LIST	02.07.2024	Freqcon_JD
	2	SUMMARIZED PARTS LIST	02.07.2024	Freqcon_JD
&EMB ++TRA		Cable list medium voltage transformer		
	1	CABEL LIST	02.07.2024	Freqcon_JD
&EMB ++CONV		Cable list Converter		
	1	CABEL LIST	02.07.2024	Freqcon_JD
	2	CABEL LIST	02.07.2024	Freqcon_JD
	3	CABEL LIST	02.07.2024	Freqcon_JD
	4	CABEL LIST	02.07.2024	Freqcon_JD
	5	CABEL LIST	02.07.2024	Freqcon_JD
	6	CABEL LIST	02.07.2024	Freqcon_JD
	7	CABEL LIST	02.07.2024	Freqcon_JD
	8	CABEL LIST	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EMB ++CONV		Cable list Converter		
	9	CABEL LIST	02.07.2024	Freqcon_JD
	10	CABEL LIST	02.07.2024	Freqcon_JD
	11	CABEL LIST	02.07.2024	Freqcon_JD
	12	CABEL LIST	02.07.2024	Freqcon_JD
	13	CABEL LIST	02.07.2024	Freqcon_JD
	14	CABEL LIST	02.07.2024	Freqcon_JD
	15	CABEL LIST	02.07.2024	Freqcon_JD
&EMB ++CONV +CIR		Cable list Converter Circuit Breaker cabinet		
	1	CABEL LIST	02.07.2024	Freqcon_JD
	2	CABEL LIST	02.07.2024	Freqcon_JD
	3	CABEL LIST	02.07.2024	Freqcon_JD
&EMB ++CT		Cable list Control cabinets		
	1	CABEL LIST	02.07.2024	Freqcon_JD
	2	CABEL LIST	02.07.2024	Freqcon_JD
	3	CABEL LIST	02.07.2024	Freqcon_JD
	4	CABEL LIST	02.07.2024	Freqcon_JD
	5	CABEL LIST	02.07.2024	Freqcon_JD
	6	CABEL LIST	02.07.2024	Freqcon_JD
	7	CABEL LIST	02.07.2024	Freqcon_JD
	8	CABEL LIST	02.07.2024	Freqcon_JD
	9	CABEL LIST	02.07.2024	Freqcon_JD
	10	CABEL LIST	02.07.2024	Freqcon_JD
	11	CABEL LIST	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EMB ++FAN		Cable list FAN		
	1	CABEL LIST	02.07.2024	Freqcon_JD
&EMB ++EXTERN		Cable list		
	1	CABEL LIST	02.07.2024	Freqcon_JD
&EMZ ++CONV +IND		Terminals Converter Inductor cabinet		
	1000	Klemmenleistenübersicht : =UNIT_01++CONV+IND-207L1.1 - =UNIT_01++CONV+IND-217L1.3	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++CONV+IND-207L1.1	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++CONV+IND-207L1.2	02.07.2024	Freqcon_JD
	2002	Klemmenplan =UNIT_01++CONV+IND-207L1.3	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_01++CONV+IND-211L1.1	02.07.2024	Freqcon_JD
	2004	Klemmenplan =UNIT_01++CONV+IND-211L1.2	02.07.2024	Freqcon_JD
	2005	Klemmenplan =UNIT_01++CONV+IND-211L1.3	02.07.2024	Freqcon_JD
	2006	Klemmenplan =UNIT_01++CONV+IND-217L1.1	02.07.2024	Freqcon_JD
	2007	Klemmenplan =UNIT_01++CONV+IND-217L1.2	02.07.2024	Freqcon_JD
	2008	Klemmenplan =UNIT_01++CONV+IND-217L1.3	02.07.2024	Freqcon_JD
&EMZ ++CONV +CIR		Terminals Converter Circuit Breaker cabinet		
	1000	Klemmenleistenübersicht : =UNIT_01++CONV+CIR-227U1-X3.1 - =UNIT_01++CONV+CIR-237U1-X3.2	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++CONV+CIR-227U1-X3.1	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++CONV+CIR-227U1-X3.2	02.07.2024	Freqcon_JD
	2002	Klemmenplan =UNIT_01++CONV+CIR-231U1-X3.1	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_01++CONV+CIR-231U1-X3.2	02.07.2024	Freqcon_JD
	2004	Klemmenplan =UNIT_01++CONV+CIR-237U1-X3.1	02.07.2024	Freqcon_JD
	2005	Klemmenplan =UNIT_01++CONV+CIR-237U1-X3.2	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EMZ ++CONV +AC_DC		Terminals Converter AC and DC connection cabinet		
	1000	Klemmenleistenübersicht : =UNIT_01++CONV+AC_DC-X3.43 - =UNIT_01++CONV+AC_DC-X3.43	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	02.07.2024	Freqcon_JD
	2002	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	02.07.2024	Freqcon_JD
&EMZ ++CT		Terminals Control cabinets		
	1000	Klemmenleistenübersicht : =UNIT_01++CT+-XT1 - =UNIT_01++CT+-XT1	02.07.2024	Freqcon_JD
&EMZ ++CT +CTRL_1.3		Terminals Control cabinets Control cabinet 1 Main mounting plate		
	1000	Klemmenleistenübersicht : =UNIT_01++CT+CTRL_1.3-X1 - =UNIT_01++CT+CTRL_1.3-XV	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++CT+CTRL_1.3-X1	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3	02.07.2024	Freqcon_JD
	2002	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.10	02.07.2024	Freqcon_JD
	2004	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.11	02.07.2024	Freqcon_JD
	2005	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.12	02.07.2024	Freqcon_JD
	2006	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.13	02.07.2024	Freqcon_JD
	2007	Klemmenplan =UNIT_01++CT+CTRL_1.3-X5	02.07.2024	Freqcon_JD
	2008	Klemmenplan =UNIT_01++CT+CTRL_1.3-X5	02.07.2024	Freqcon_JD
	2009	Klemmenplan =UNIT_01++CT+CTRL_1.3-X5.1	02.07.2024	Freqcon_JD
	2010	Klemmenplan =UNIT_01++CT+CTRL_1.3-150X1	02.07.2024	Freqcon_JD
	2011	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC1	02.07.2024	Freqcon_JD
	2012	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC1	02.07.2024	Freqcon_JD
	2013	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	02.07.2024	Freqcon_JD
	2014	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	02.07.2024	Freqcon_JD

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Assignment	Page	Page description	Date	Edited by
&EMZ ++CT +CTRL_1.3		Terminals Control cabinets Control cabinet 1 Main mounting plate		
	2015	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	02.07.2024	Freqcon_JD
	2016	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC3	02.07.2024	Freqcon_JD
	2017	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC4	02.07.2024	Freqcon_JD
	2018	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC5.1	02.07.2024	Freqcon_JD
	2019	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC5.2	02.07.2024	Freqcon_JD
	2020	Klemmenplan =UNIT_01++CT+CTRL_1.3-XE	02.07.2024	Freqcon_JD
	2021	Klemmenplan =UNIT_01++CT+CTRL_1.3-XT	02.07.2024	Freqcon_JD
	2022	Klemmenplan =UNIT_01++CT+CTRL_1.3-XT	02.07.2024	Freqcon_JD
	2023	Klemmenplan =UNIT_01++CT+CTRL_1.3-190XT1	02.07.2024	Freqcon_JD
	2024	Klemmenplan =UNIT_01++CT+CTRL_1.3-191XT1	02.07.2024	Freqcon_JD
	2025	Klemmenplan =UNIT_01++CT+CTRL_1.3-XV	02.07.2024	Freqcon_JD
&EMZ ++CT +CTRL_1.4		Terminals Control cabinets Control cabinet 1 Right side		
	1000	Klemmenleistenübersicht : =UNIT_01++CT+CTRL_1.4-350X1.21 - =UNIT_01++CT+CTRL_1.4-XV.20	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++CT+CTRL_1.4-350X1.21	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++CT+CTRL_1.4-350X1.22	02.07.2024	Freqcon_JD
	2002	Klemmenplan =UNIT_01++CT+CTRL_1.4-XE2	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_01++CT+CTRL_1.4-XV.20	02.07.2024	Freqcon_JD
&EMZ ++FAN		Terminals FAN		
	1000	Klemmenleistenübersicht : =UNIT_01++FAN+-52G1-181X1 - =UNIT_01++FAN+-52G1-181X3	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_01++FAN+-52G1-181X1	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_01++FAN+-52G1-181X3	02.07.2024	Freqcon_JD

SPECIFICATION

TERMINAL STRIP

-XE1	MAIN POWER SUPPLY 600V AC
-XE2	DC POWER SUPPLY 1000V DC
-XE	MAIN POWER SUPPLY 400V AC
-X1	MAIN POWER 400V/230V AC
-X2	LIGHT CABINET 230V AC
-X3	CONTROL VOLTAGE 24V DC
-14X1	CONTROL VOLTAGE 24V DC (TO DC CONTACTORS)
-X5	LOW-VOLTAGE SIGNALS
-XDC0	24V DC POWER SUPPLY
-XDC1-4	CONTROL VOLTAGE 24V DC (UPS)
-XT	TRANSFER TERMINAL BLOCK 24V DC / 230V AC

WIRING COLOR

L1 / L2 / L3	=	BLACK
N	=	LIGHT BLUE (IEC) / GREY (UL)
PE	=	YELLOW-GREEN
EXTERNAL VOLTAGE	=	ORANGE
CONTROL VOLTAGE 24 V DC	=	DARK BLUE
ANALOG SIGNALS	=	WHITE

PLACE

+CTRL	=	Control cabinet
+CON	=	Converter cabinet
+IND	=	Inductor cabinet
+CIR	=	Circuit breaker cabinet
+COSY	=	Cooling System
+FAN	=	External fan

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SPECIFICATION of grounding

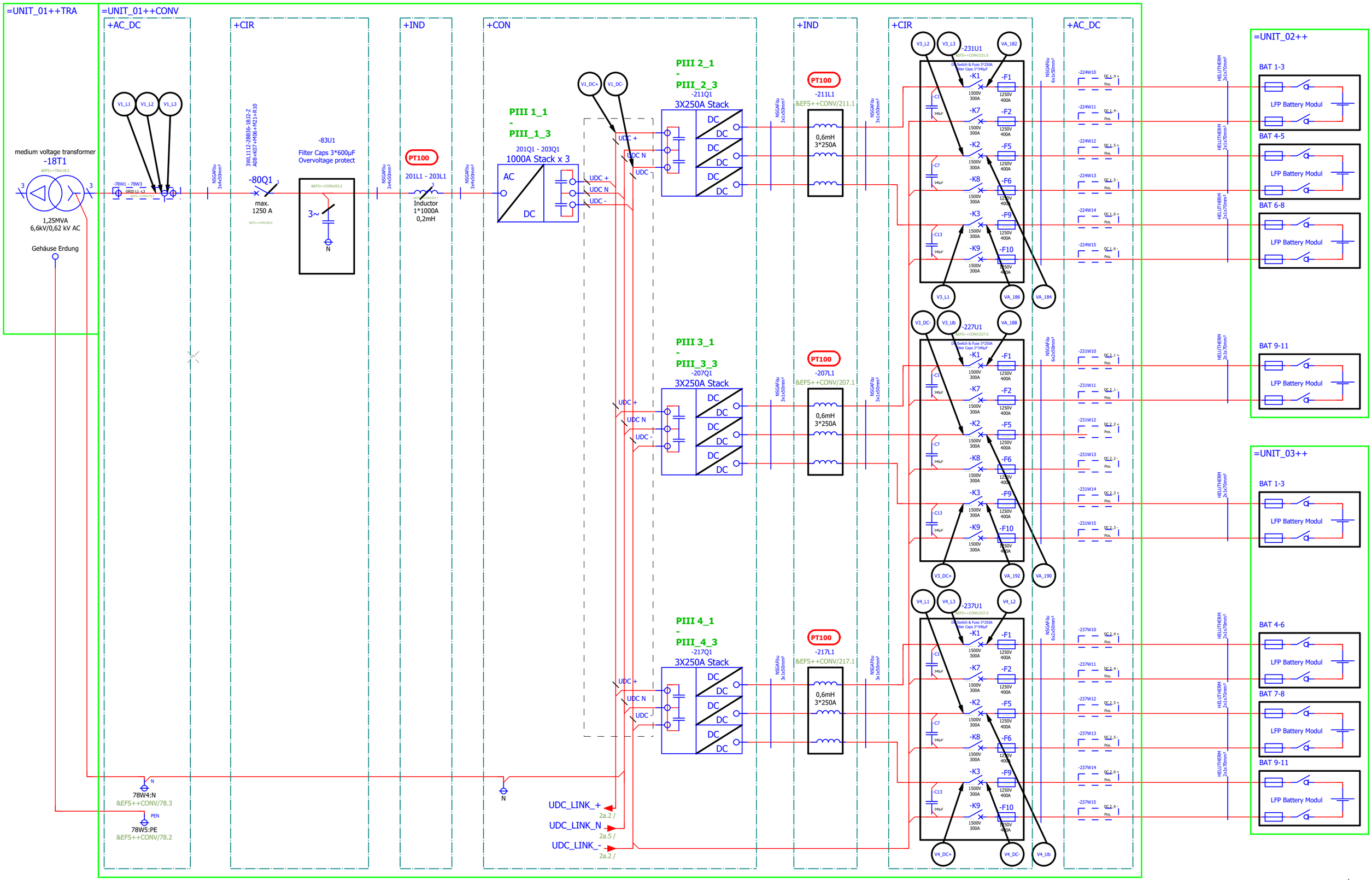
	from frame to			
1	**roof & side walls & doors**	**EVD_1**	**Flachband**	**2x25 mm²**
2	**frame**	**EVD_2**	**Flachband**	**2x25 mm²**
3	**base**	**EVD_3**	**Flachband**	**2x25 mm²**
4	**Mounting plate & partitions**	**EVD_4**	**H07-V-K**	**2x25 mm²**
5	**inductors**	**EVD_5**	**H07-V-k**	**2x25 mm²**
6	**Powerstack**	**EVD_6**	**H07-V-K**	**2x25 mm²**
7	**DC Switch & Fuse**	**EVD_7**	**H07-V-K**	**2x25 mm²**
8	**AC Filter**	**EVD_8**	**H07-V-K**	**2x25 mm²**
9	**circuit-breaker**	**EVD_9**	**H07-V-K**	**2x25 mm²**
10	**Freqcon_Fast_Disconektor**	**EVD_10**	**H07-V-K**	**2x25 mm²**
11	**Freqcon_Rectifier_Modul**	**EVD_11**	**H07-V-K**	**2x25 mm²**
12	**capacitor banks**	**EVD_12**	**H07-V-K**	**2x25 mm²**
13	**water distributor**	**EVD_13**	**H07-V-K**	**2x25 mm²**
14	**SPARE**	**EVD_14**	**H07-V-K**	**2x25 mm²**
15	**SPARE**	**EVD_15**	**H07-V-K**	**2x25 mm²**
16	**SPARE**	**EVD_16**	**H07-V-K**	**2x25 mm²**
17	**SPARE**	**EVD_17**	**H07-V-K**	**2x25 mm²**
18	**SPARE**	**EVD_18**	**H07-V-K**	**2x25 mm²**
	from door to			
19	**PROFINET IRT IGBT Interface**	**EVD_19**	**H07-V-K**	**1,5 mm²**
20	**HMI**	**EVD_20**	**H07-V-K**	**1,5 mm²**
21	**SPARE**	**EVD_21**	**H07-V-K**	**??? mm²**
22	**SPARE**	**EVD_22**	**H07-V-K**	**??? mm²**

previous page: 1a

next page: &EFA/1a

Editor	Freqcon_JD			Statron	FREQCON	Specification Earthing	20240809_V0.7	= UNIT_01	Converter Container 1
Date	14.06.2024	Norm						& EAC	Explanatory documents
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++	page: 6a
Date								+	total: 482

Single line diagram



previous page:
&EAC/6a

next page:
2a

Editor	Freqcon_JD			Statron	FREQCON	SYSTEMS OVERVIEW	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024	Norm						& EFA	Single line diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore				++	page: 1a
Date							10354_23A2007	+	total: 482

Single line diagram

Control circuit

++CONV

++CT
+CTRL_1

CTRL

UDC_LINK_+ / 1a.4

UDC_LINK_- / 1a.4

UDC_LINK_N / 1a.4

+4

-173F2 &EFS++CT/173.2 10A

-173F3 &EFS++CT/173.4 1A

-173K2 1500V 30A DC

-173R3 500 Ohm 150 W

-173R4 500 Ohm 150 W

-173K1 1500V 30A DC

-173R1 500 Ohm 150 W

-173R2 500 Ohm 150 W

V1_DC-

V1_DC+

+4

V1_L1 V1_L2 V1_L3

-85U1 &EFS++CT/85.6 L1 L2 L3 DC+ DC-

-171F1 &EFS++CT/171.2 10A

-171K1 &EFS++CT/171.7 1500V 50A DC

-171K2 &EFS++CT/171.8 1500V 50A DC

-171R1 &EFS++CT/171.1 15 Ohm 300W

-171R2 &EFS++CT/171.2 15 Ohm 300W

Grid 400V
inc. overvotage fuse
& Fuse ??A(20A)

+3
Main mounting plate

1-6
-XE
1

-84F2

>+
CTRL_1.1
-84Q1

AC L1,L2,L3

101T1 &EFS++CT/101.2

24V DC supply unit

102G1 &EFS++CT/102.2
24V DC UPS

+24VDC GND

+ 24V DC
24V GND

-102G2 &EFS++CT/102.6 Battery

-103F1 - 103F4 &EFS++CT/103.2 F2, 10A 60VDC

-103F5 &EFS++CT/103.9 F2, 10A 60VDC

-186K1 &EFS++CT/186.6

-186B1 &EFS++CT/186.6

24V Supply
Main PLC
ET200SP

+24V DC
for Control Cabinet

24V GND

Precharge
Resistors

400V AC
Control Cabinet

Thermostat
for start PLC

previous page: 1a

next page: &ELU/5a

Editor	Freqcon_JD			Statron	FREQCON	SYSTEMS OVERVIEW	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024	Norm						& EFA Single line diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++	page: 2a
Date								+	total: 482



+CTRL_1
Control cabinet 1

+CTRL_2
Control cabinet 2

++CT Control cabinets



+CON
Converter cabinet

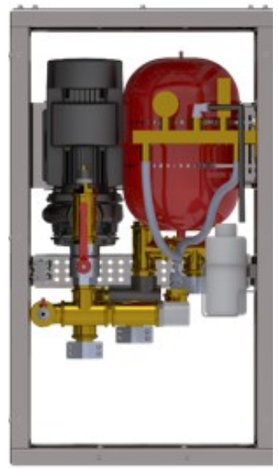
+IND
Inductor cabinet

+CTRL_1
Control cabinet 1

+AC_DC
AC and DC connection cabinet

++CONV Converter



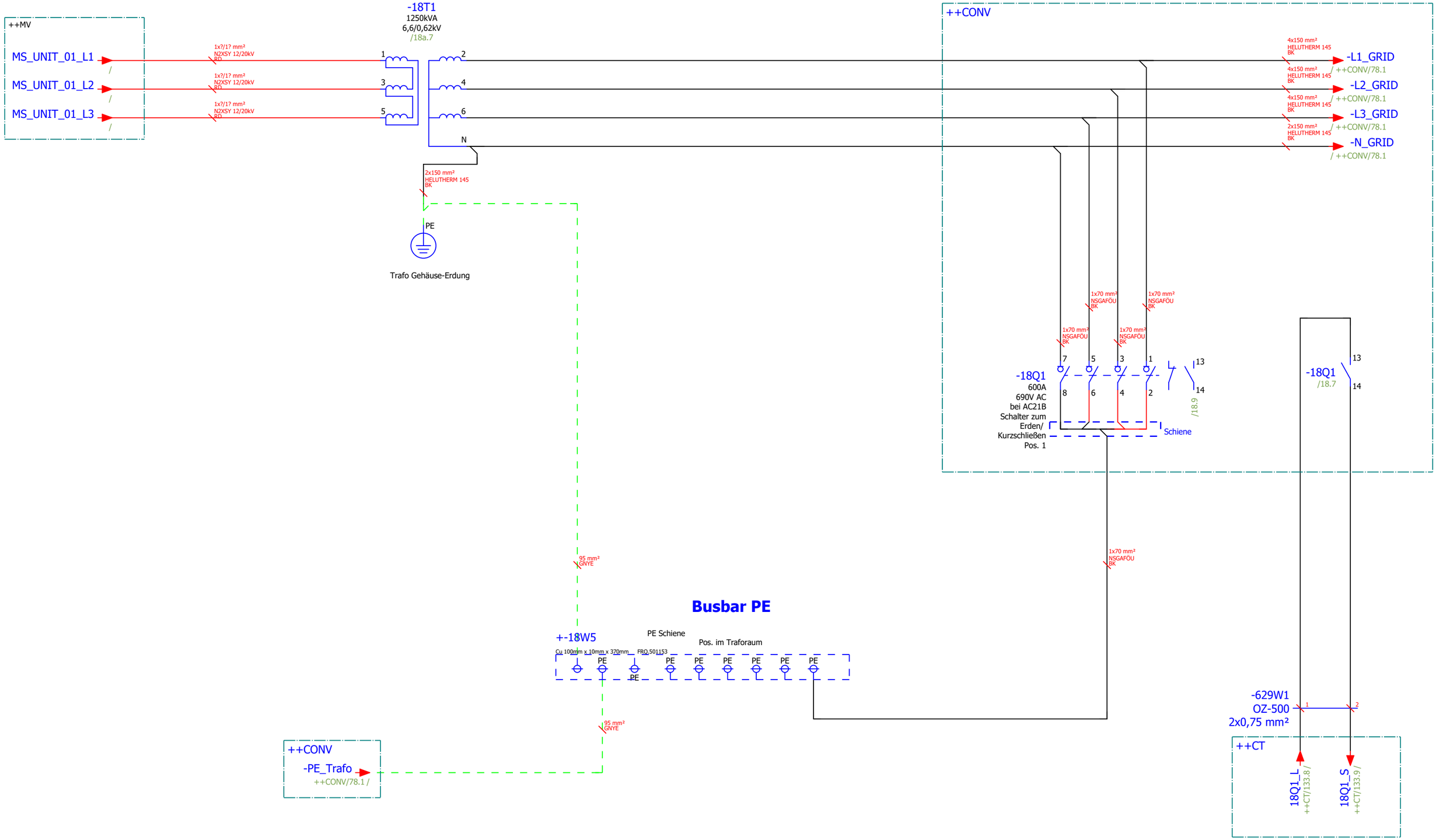


++FAN
FAN

previous page:
&EFA/2a

next page:
&EFS++TRA/18

Editor	Freqcon_JD			Statron	FREQCON	CABINETS OVERVIEW	20240809_V0.7	= UNIT_01	Converter Container 1
Date	14.06.2024	Norm						& ELU	Cabinet Overview
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++	page: 5a
Date								+	total: 482



Earthing switch in On
Transformer 620V side

previous page:
&ELU++/5a

next page:
18a

Editor	Freqcon_JD			Statron	FREQCON	MV-TRANSFORMER UNIT_01+02	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ TRA medium voltage transformer page: 18
Date								+ total: 482

++CT
+CTRL_1.2
-18B1
PWR07
Trafo-
Temperaturüberwachung
Pos: in Tür +ASC

SUPPLY
24-240V AC DC

ALARM

FAULT

FAN

PT100 SENSORS

CH 1

CH 2

CH 3

CH 4

40 41 42 4 5 6 7 8 9 1 2 3 4 5 6 13 14 15 16 17 18 19 20 21 22 23 24

0,75 mm² RT

-18W2
JZ-500
8G1,5 mm²

1 GNYE 2 3 4 5 6

-18W1
F-CY-OZ (LiY-CY)
10x1,5 mm²
500V
geschirmt

1 2 3 4 5 6 7 8 9

-18T1
/18.2

3x PT100 Fühler in NS-Wicklung Trafo

CH 3 CH 2 CH 1

3 2 1 3 2 1 3 2 1

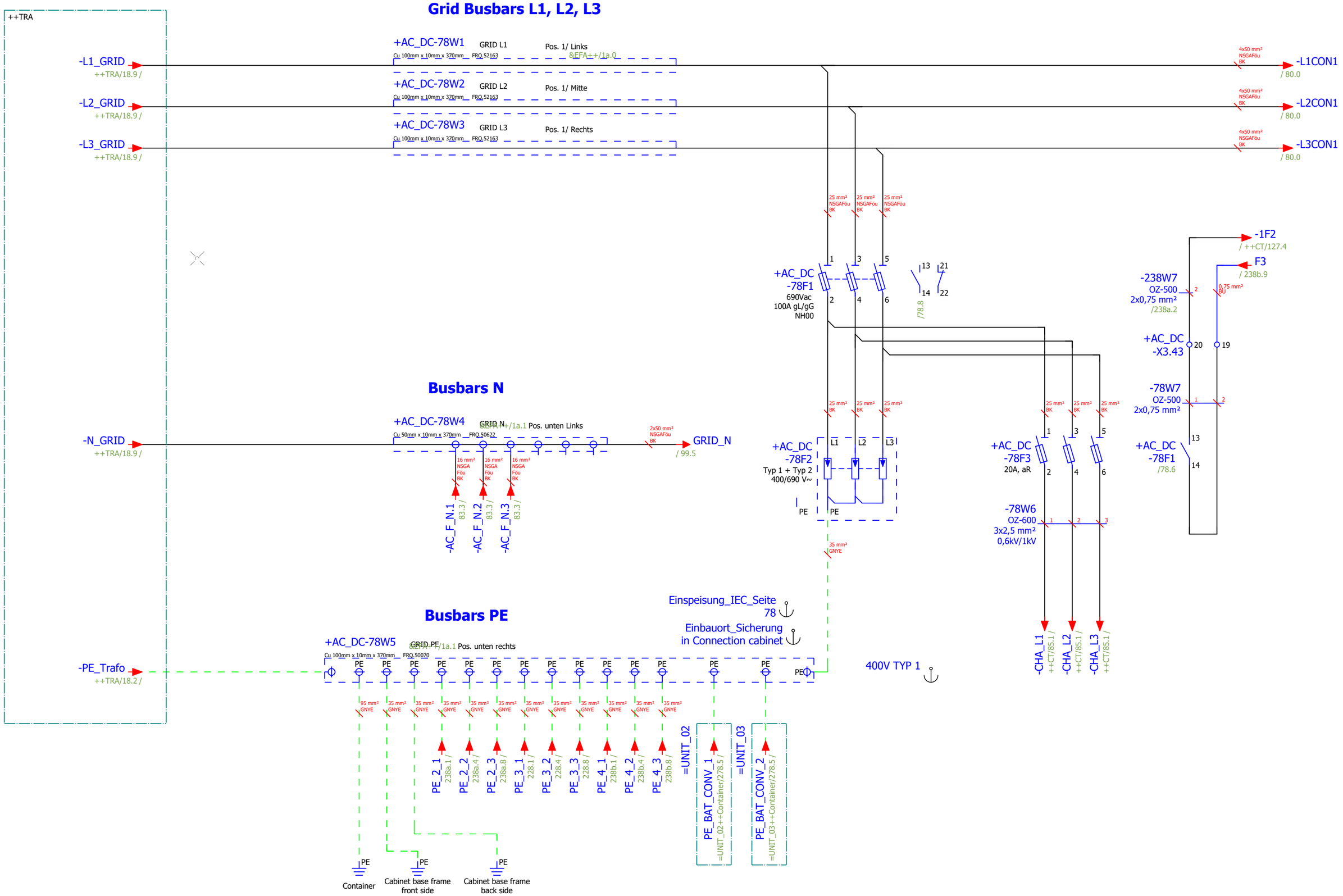
++CT

-1L+3 ++CT/103.2/
-1PE5 ++CT/103.4/
-1M6 ++CT/103.3/
-PreAlarm ++CT/133.0/
-Trip ++CT/133.0/
-Fault ++CT/133.0/
-Fan ++CT/133.0/

previous page:
18

next page:
++CONV/78

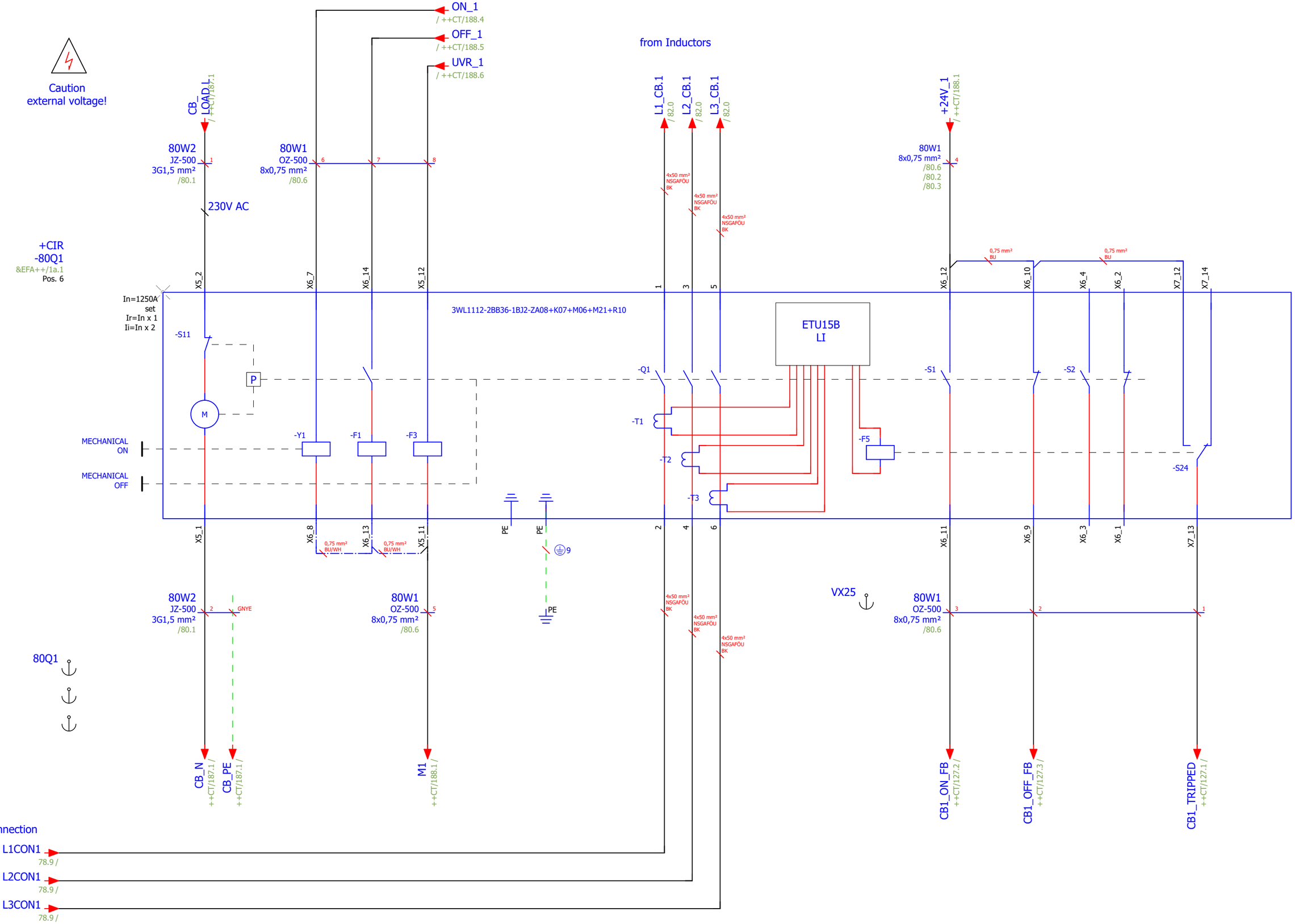
Editor	Freqcon_JD			Statron	FREQCON	TEMPERATURE TRANSFORMER UNIT_01+02	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ TRA	medium voltage transformer	page: 18a
Date								+		total: 482



previous page:
++TRA/18a

next page:
80

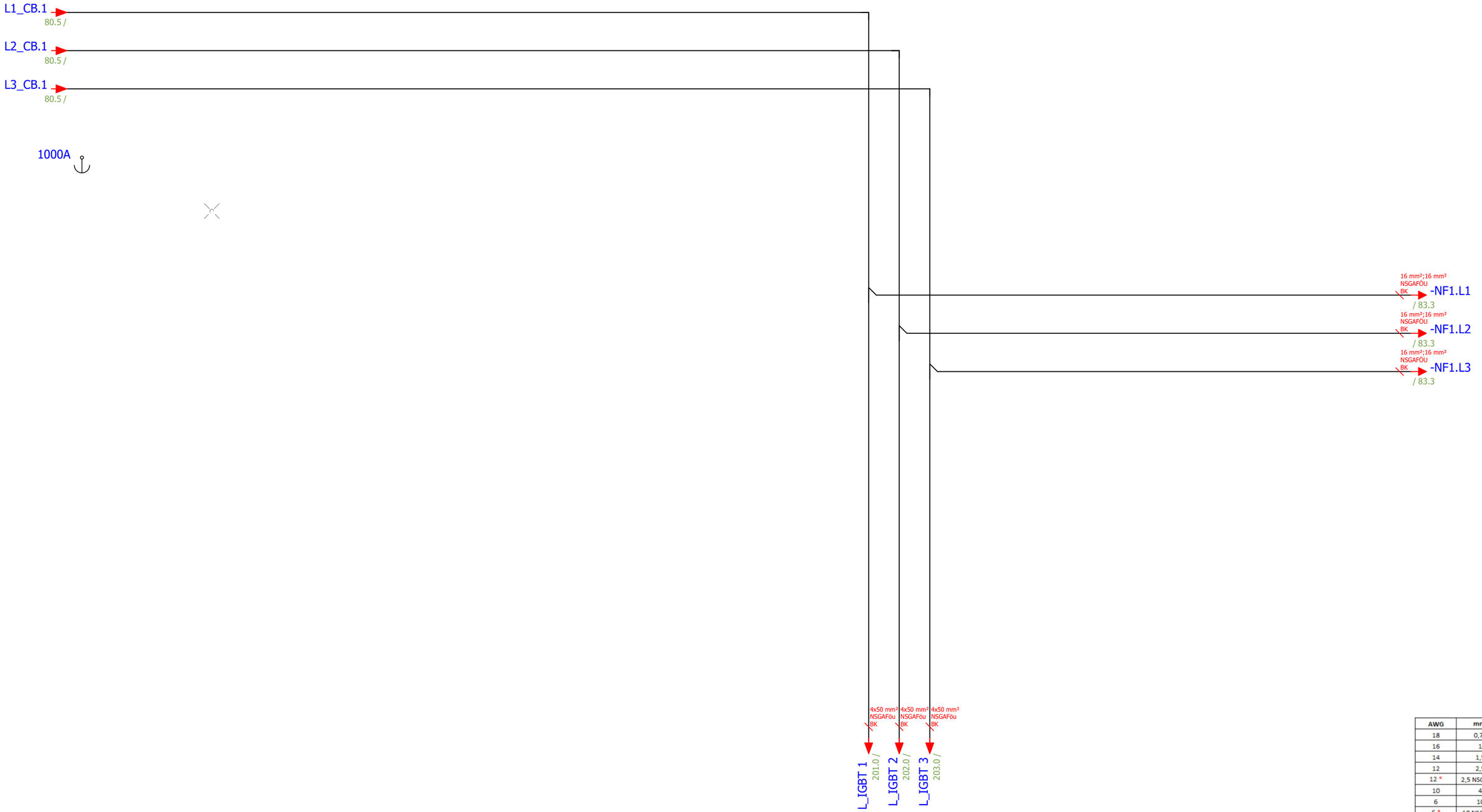
Editor	Freqcon_JD			Statron	FREQCON	GRID CONNECTION	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter
Date								+	



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Editor	Freqcon_JD			Statron	FREQCON	BG CIRCUIT BREAKER 1000A AC GRID	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 80
Date								+	total: 482



AWG	mm²
18	0,75
16	1
14	1,5
12	2,5
12 *	2,5 NSGAFÖu
10	4
6	10
6 *	10 NSGAFÖu
4	16
2	25
2 *	16 NSGAFÖu
1	35
250 kcmil	95 ALU
2x2	1x70 NSGAFÖu
2x4	2x70 NSGAFÖu
4x250 kcmil	4x70 NSGAFÖu
6x250 kcmil	6x70 NSGAFÖu

*cable into seperate UL protective tube

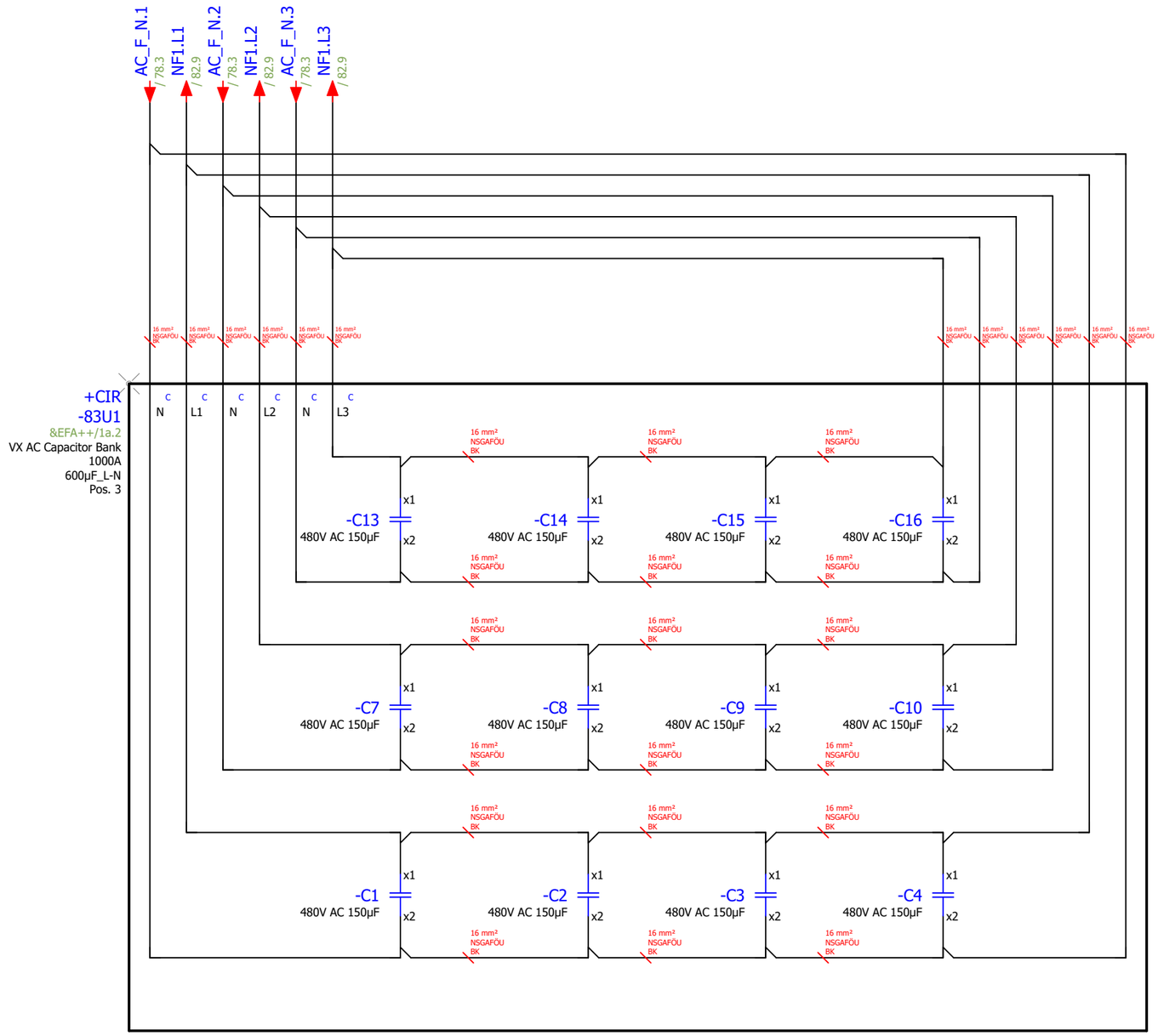
previous page:
80

next page:
83

Editor	Freqcon_JD			Statron	FREQCON	PI INDUCTORS GRID SIDE	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter	page: 82
Date								+		total: 482

to polarity bar

behind main breaker



AWG	mm²
18	0,75
16	1
14	1,5
12	2,5
12 *	2,5 NSGAFöu
10	4
6	10
6 *	10 NSGAFöu
4	16
2	25
2 *	16 NSGAFöu
1	35
250 kcmil	95 ALU
2x2	1x70 NSGAFöu
2x4	2x70 NSGAFöu
4x250 kcmil	4x70 NSGAFöu
6x250 kcmil	6x70 NSGAFöu

*cable into seperate UL protective tube

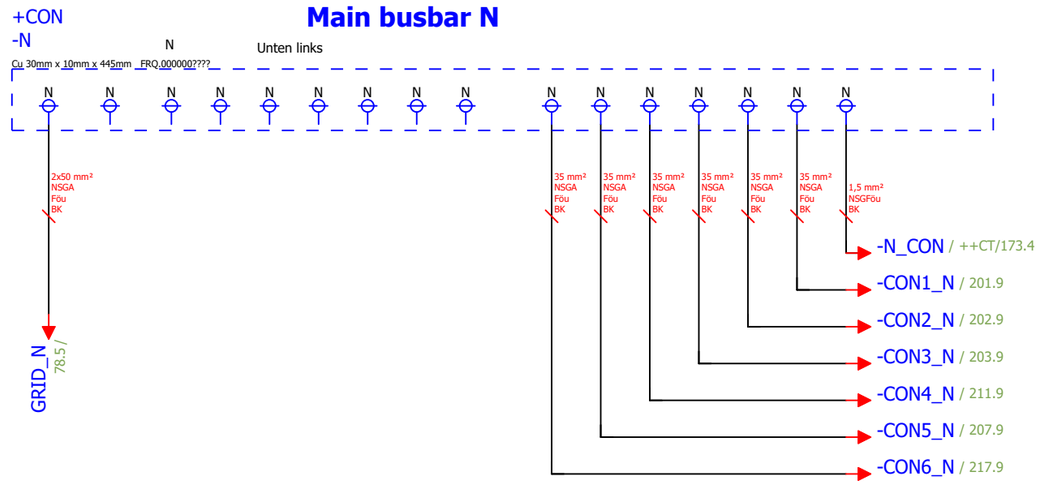
83U1

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next page: 99

Editor	Freqcon_JD			Statron	FREQCON	GRID AC FILTER 3* 600 µF + OVERVOLTAGE PROTECTOR	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter	page: 83
Date								+		total: 482

in converter cabinet



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1000A

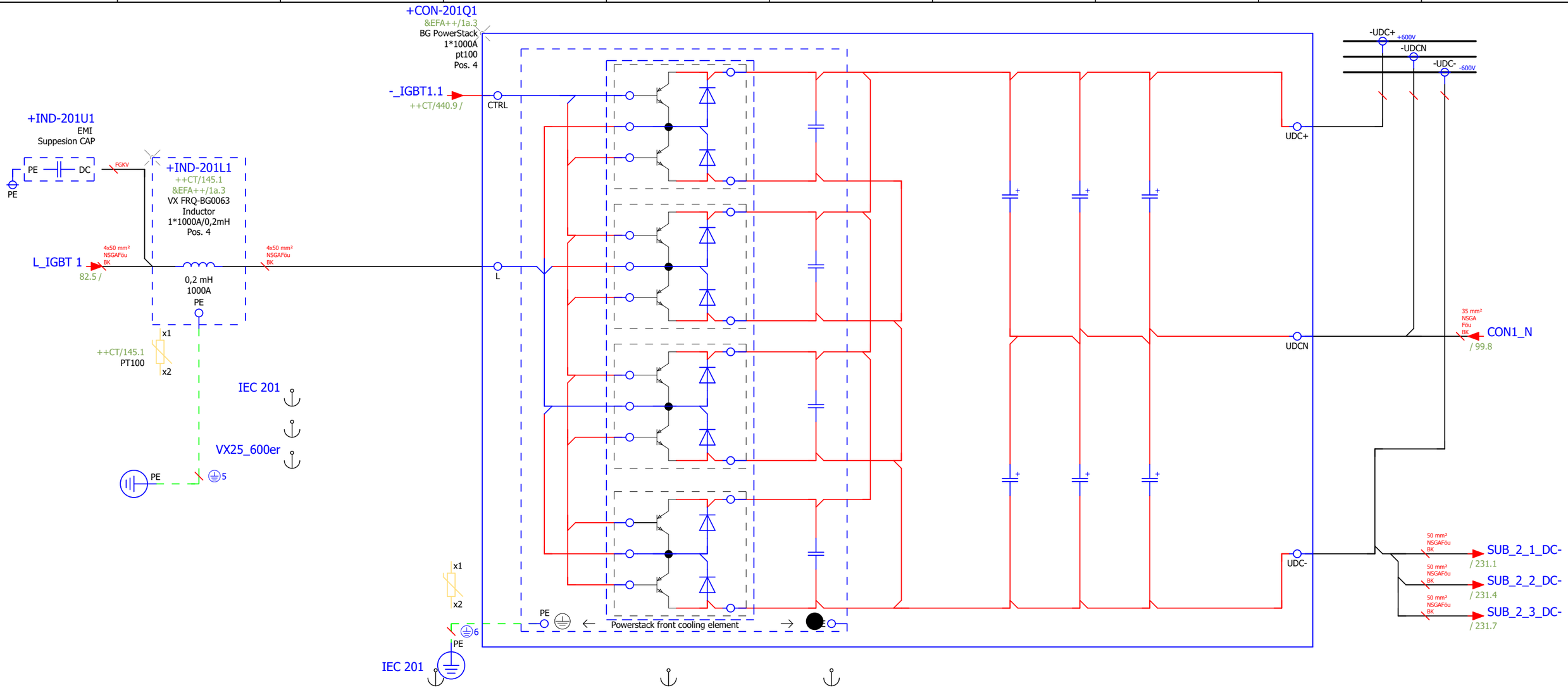
next page: 200

Editor	Freqcon_JD			Statron	FREQCON	BUSBARS N, PE	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 99
Date								+	total: 482

Power Circuits

Pages 200 - 299

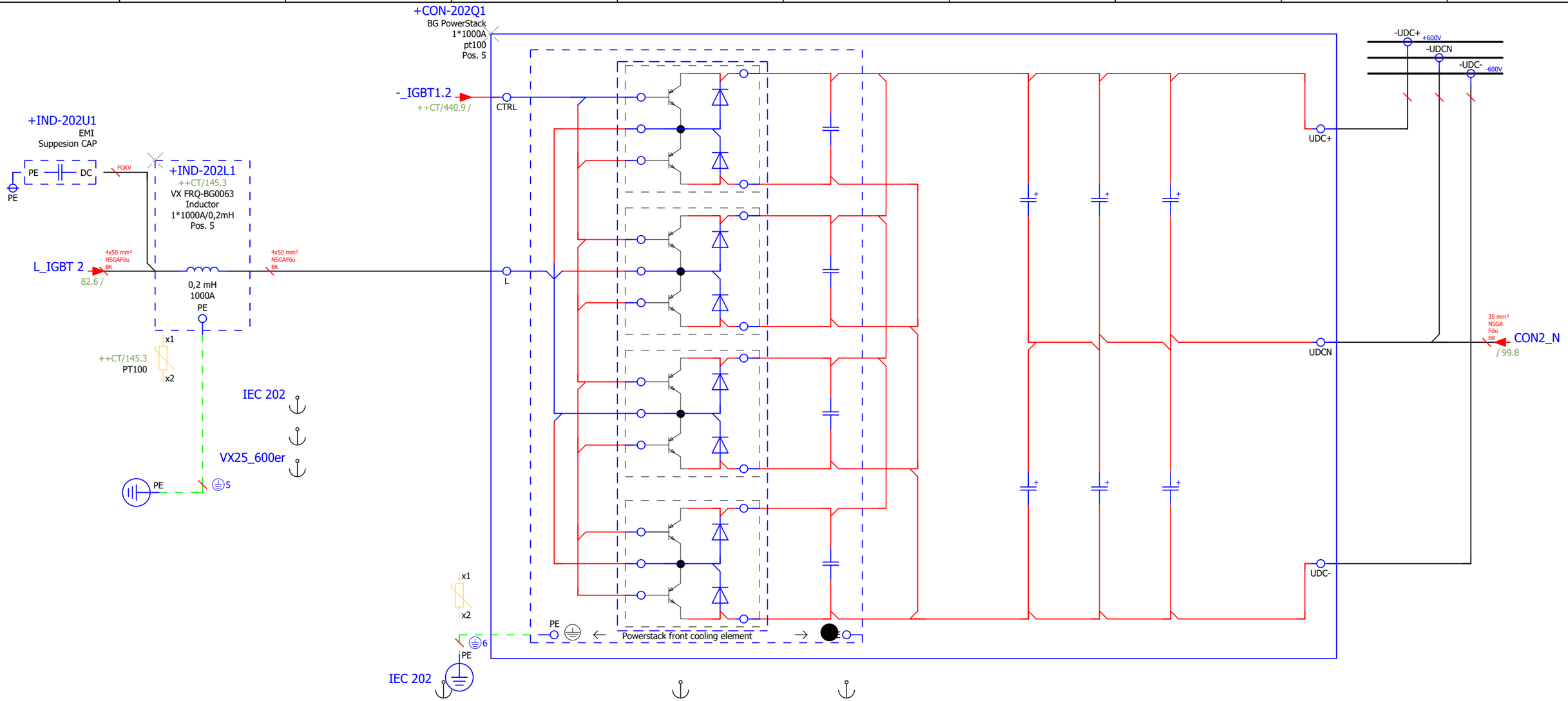
- Converter cabinet
- Inductor cabinet
- Circuit Breaker cabinet



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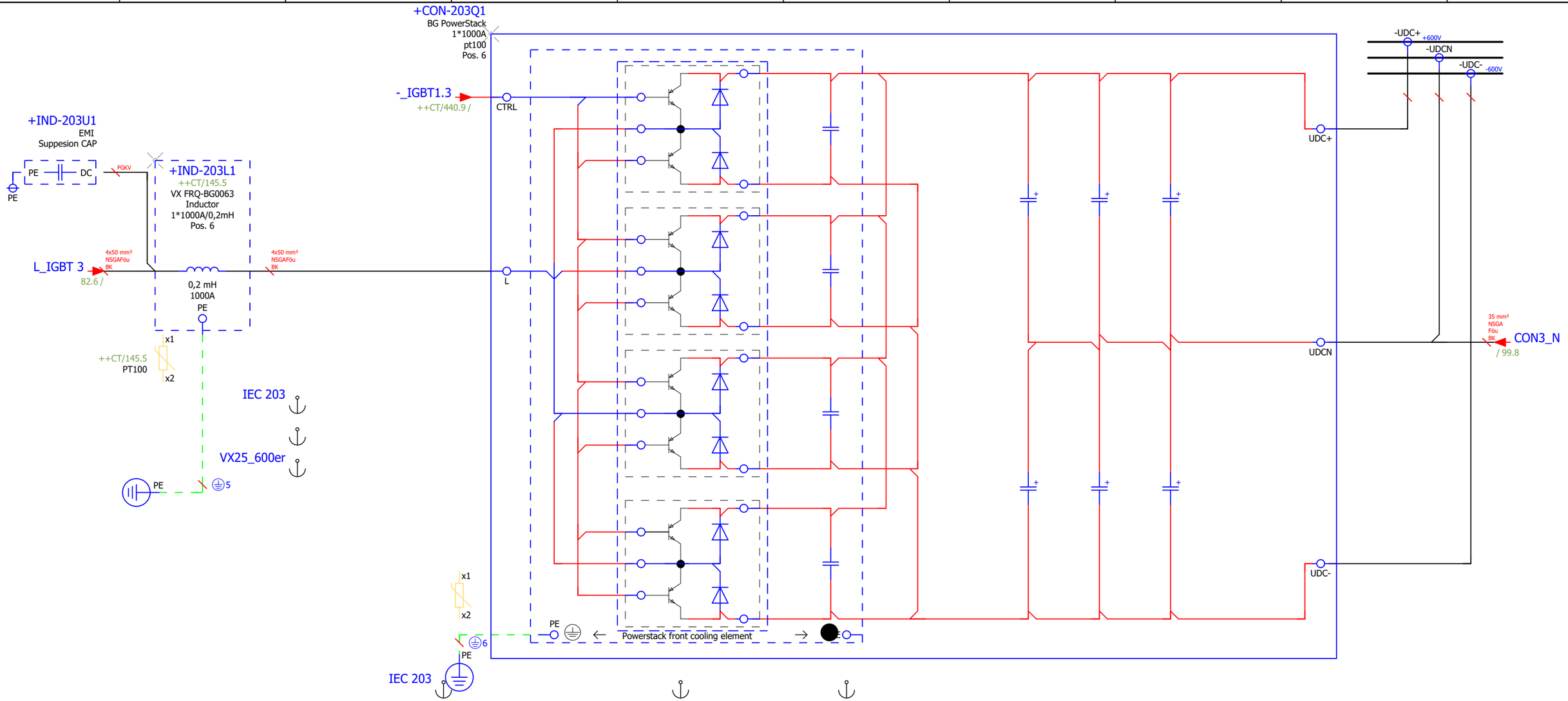
Editor	Freqcon_JD			Statron	FREQCON	IGBT & INDUCTOR FOR GRID PHASE 1	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 201
Date								+	total: 482



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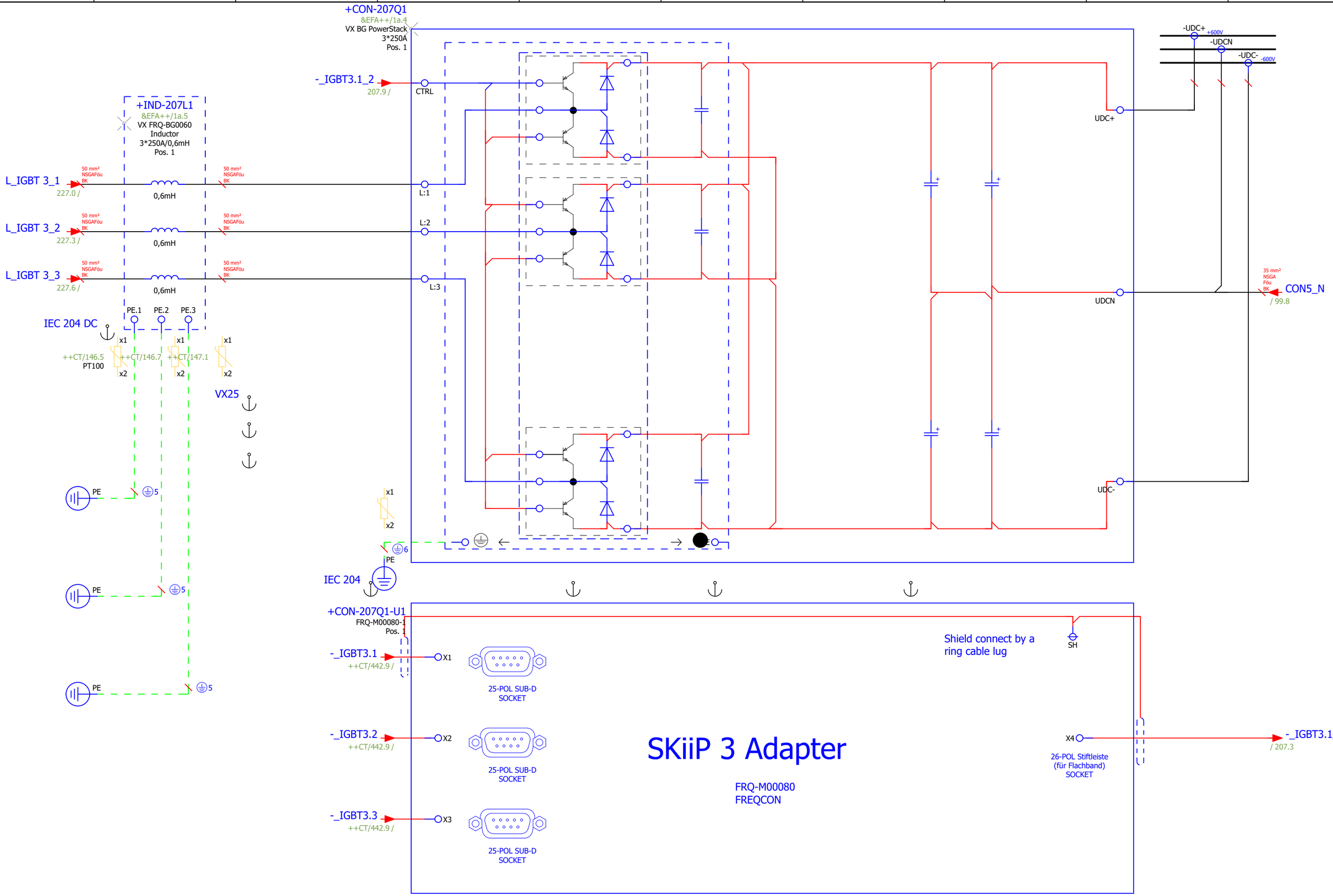
Editor	Freqcon_JD			Statron	FREQCON	IGBT & INDUCTOR FOR GRID PHASE 2	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 202
Date								+	total: 482



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202

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207

Editor	Freqcon_JD			Statron		IGBT & INDUCTOR FOR GRID PHASE 3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024				FREQCON			& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 203
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	IGBT & INDUCTOR SUB 3_1 - 3_3	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter
Date								+	

+CON-211Q1
&EFA++/1a.4
VX BG PowerStack
3*250A
Pos. 2

-_IGBT2.1_2
211.9 /

CTRL

+IND-211L1
&EFA++/1a.5
VX FRQ-BG0060
Inductor
3*250A/0,6mH
Pos. 2

L_IGBT 2_1
231.0 /
50 mm² NSGAFöu BK
0,6mH
L:1

L_IGBT 2_2
231.3 /
50 mm² NSGAFöu BK
0,6mH
L:2

L_IGBT 2_3
231.6 /
50 mm² NSGAFöu BK
0,6mH
L:3

PE.1 PE.2 PE.3

IEC 211 DC

++CT/145.7
PT100
x1 x2
++CT/146.1
++CT/146.3

VX25

PE
5

x1 x2
6

IEC 211

-UDC+ +600V
-UDCN
-UDC- -600V

UDC+
UDCN
UDC-

35 mm² NSGA Föu BK
CON4_N
/ 99.8

+CON-211Q1-U1
FRQ-M00080-1
Pos. 1

-_IGBT2.1
++CT/441.9 /
X1
25-POL SUB-D SOCKET

-_IGBT2.2
++CT/441.9 /
X2
25-POL SUB-D SOCKET

-_IGBT2.3
++CT/441.9 /
X3
25-POL SUB-D SOCKET

SKiiP 3 Adapter

FRQ-M00080
FREQCON

Shield connect by a ring cable lug
SH

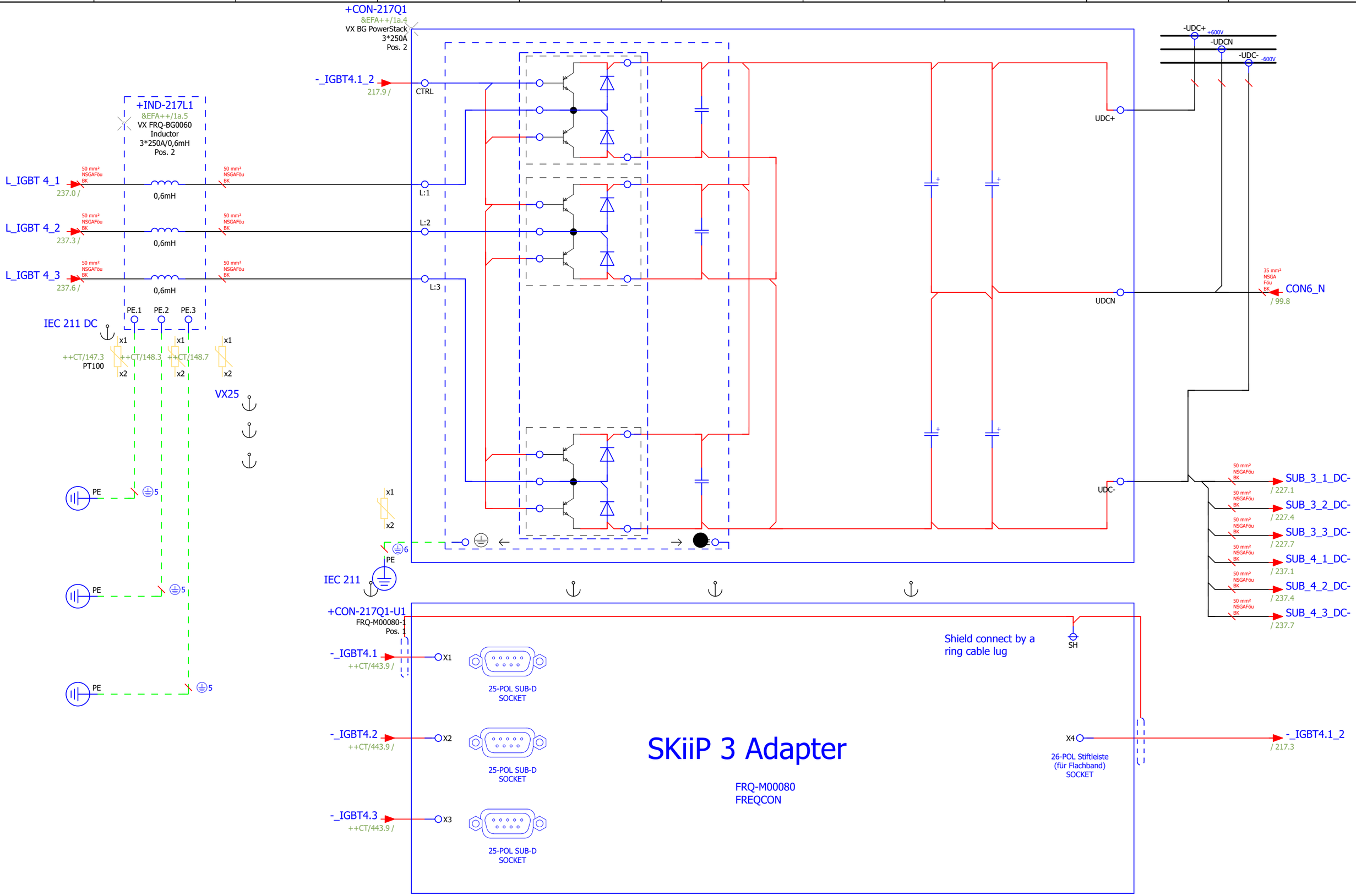
X4
26-POL Stiftleiste (für Flachband) SOCKET
-_IGBT2.1_2
/ 211.3

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Editor	Freqcon_JD			Statron	FREQCON	IGBT & INDUCTOR SUB 2_1 -2_3	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter
Date								+	

page: 211
total: 482



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next page: 227

Editor	Freqcon_JD			Statron	FREQCON	IGBT & INDUCTOR SUB 4_1 -4_3	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter
Date								+	

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total: 482

VX25

224

Spare connections, if the BSU will be from here 20A supplied.

* cable intro seperate UL protrctive tube

+CIR
-227U1
/227.a.0
&EFA++/1a.6
VX DC switch and Fuse
3*250A
1000V
Pos. 1

L_IGBT 3_1 / 207.0 — 227W1 OZ-600 2x0,75 mm² — SUB_3_1_V / ++CT/163.9 — SUB_3_1_DC- / 217.9 — SUB_3_1_V.1 / ++CT/162.9

L_IGBT 3_2 / 207.0 — 227W2 OZ-600 2x0,75 mm² — SUB_3_2_V / ++CT/163.9 — SUB_3_2_DC- / 217.9 — SUB_3_2_V.1 / ++CT/162.9

L_IGBT 3_3 / 207.0 — 227W3 OZ-600 2x0,75 mm² — SUB_3_3_V / ++CT/163.9 — SUB_3_3_DC- / 217.9 — SUB_3_3_V.1 / ++CT/162.9

50 mm² NSGAFöu BK

PE — 7 — PE — Rear mounting plate

IGBT1 1+ — V_IGBT1 1+ — F3 1A — 2,5 mm² NSGAFöu BK — -C1 — x1 x2 — 340µF, 1320V DC Epcos — 16 mm² NSGAFöu BK

UDC [1]- — V_DC1 1+ — F4 1A [20A, aR (BSU)] — V_DC 1- — F0 [20A, aR (BSU)]

IGBT2 2+ — V_IGBT2 2+ — F7 1A — 2,5 mm² NSGAFöu BK — -C7 — x1 x2 — 340µF, 1320V DC Epcos — 16 mm² NSGAFöu BK

UDC [2]- — V_DC2 2+ — F8 1A

IGBT3 3+ — V_IGBT3 3+ — F11 1A — 2,5 mm² NSGAFöu BK — -C13 — x1 x2 — 340µF, 1320V DC Epcos — 16 mm² NSGAFöu BK

UDC [3]- — V_DC3 3+ — F12 1A

2,5 mm² NSGAFöu BK

Front mounting plate — PE — 16 mm² FGKV — -U1 EMI Suppesion CAP — 1 2 3 4 5 6 — 16 mm² in Shrin-kable Tube FGKV

-K1 /227.a.1 1500V 300A — -K7 /227.a.3 1500V 300A — -K2 /227.a.2 1500V 300A — -K8 /227.a.4 1500V 300A — -K3 /227.a.2 1500V 300A — -K9 /227.a.5 1500V 300A

70 mm² NSGAFöu BK

-F1 /227.a.7 1250V 400A 1KN/110 HLS — -F2 /227.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS — -F5 /227.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS — -F6 /227.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS — -F9 /227.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS — -F10 /227.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS

IEC

Datenblatt

DC1 + — DC1 - — DC2 + — DC2 - — DC3 + — DC3 -

*2 The single conductor must be placed in the protective tube

AWG	mm²	*cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

EEC

+AC_DC-227W10 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_1 + Pos. =UNIT_02 — DC+3_1_BAT / =UNIT_02++ASC/678.7

+AC_DC-227W11 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_1 - Pos. — DC-3_1_BAT / =UNIT_02++ASC/678.7

DC+3_1 / 228.1 — DC-3_1 / 228.1

+AC_DC-227W12 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_2 + Pos.

+AC_DC-227W13 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_2 - Pos.

DC+3_2 / 228.4 — DC-3_2 / 228.4

+AC_DC-227W14 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_3 + Pos. =UNIT_03 — DC+3_3_BAT / =UNIT_03++ASC/678.0

+AC_DC-227W15 Cu 100mm x 10mm x 195mm FRQ.50604 — SUB 3_3 - Pos. — DC-3_3_BAT / =UNIT_03++ASC/678.0

DC+3_3 / 228.7 — DC-3_3 / 228.8

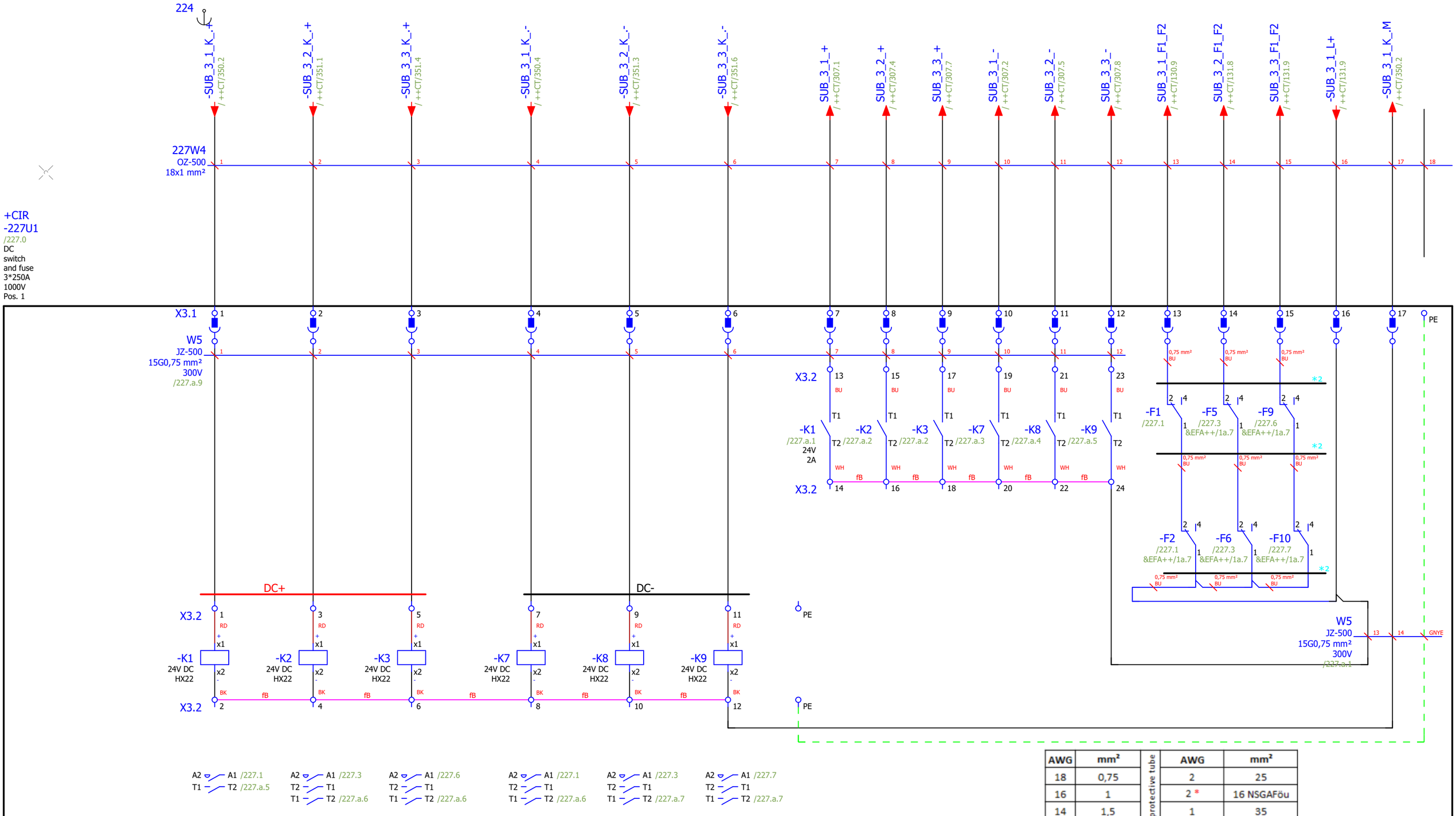
DC+ and DC- Busbars in Connection cabinet

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next page: 227.a

Editor	Freqcon_JD			Statron	FREQCON	SUBSYSTEM 3_1 - 3_1 DC 3 x 250A	20240809_V0.7
Date	18.06.2024						10354_23A2007
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			
Date							

=	UNIT_01	Converter Container 1	
&	EFS	Circuit diagram	
++	CONV	Converter	page: 227
+			total: 482



AWG	mm²	* cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

*2 The single conductor must be placed in the protective tube

IEC

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Editor	Freqcon_JD			Statron	FREQCON	SUBSYSTEM 3_1 - 3_1 DC 3 x 250A	20240809_V0.7
Date	18.06.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_01	Converter Container 1
&	EFS	Circuit diagram
++	CONV	Converter
+		

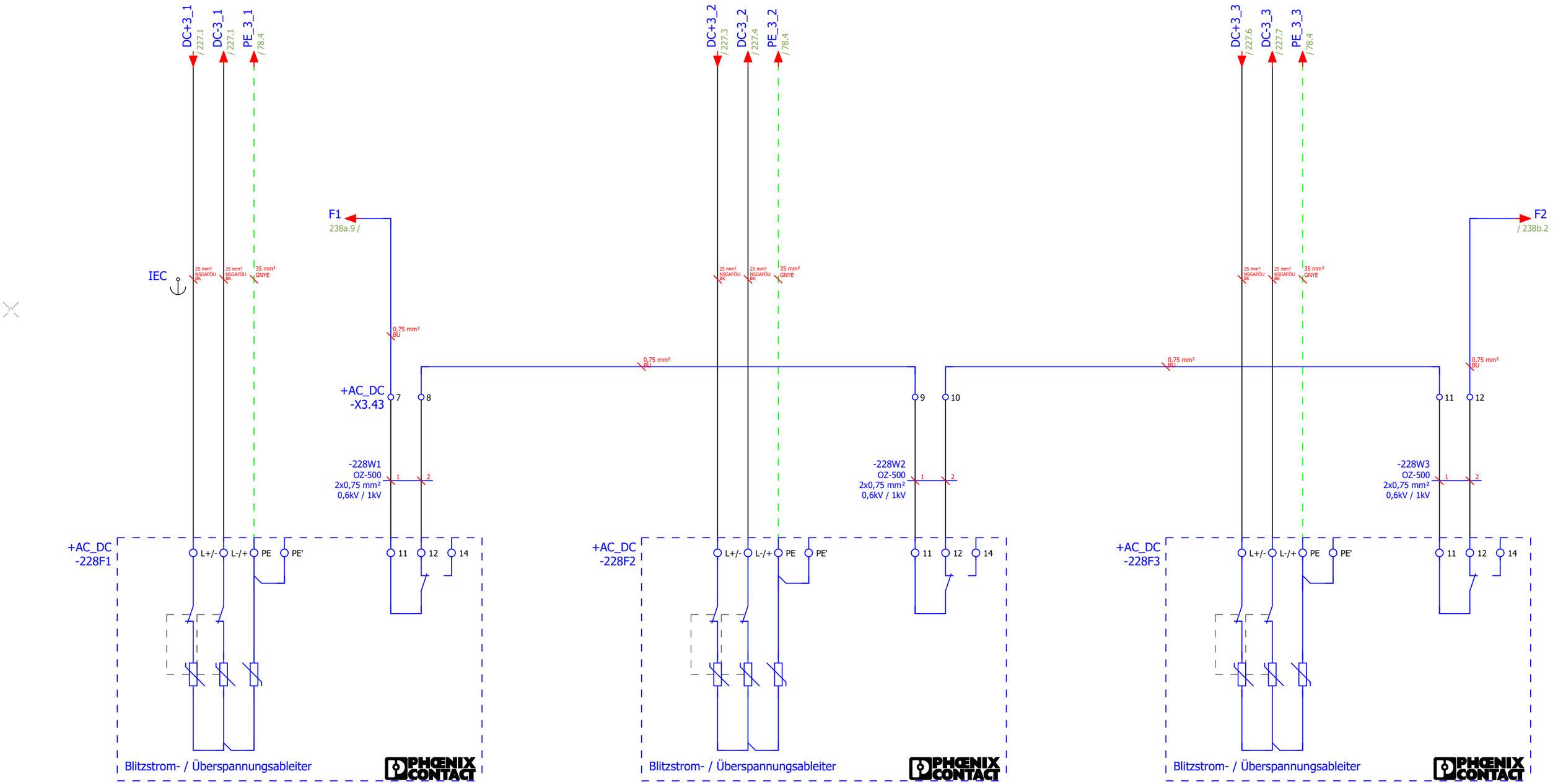
page: 227.a

total: 482

DC+ and DC- Busbars

DC+ and DC- Busbars

DC+ and DC- Busbars



SURGE ARRESTER
DC SUBSYSTEM 3_1

SURGE ARRESTER
DC SUBSYSTEM 3_2

SURGE ARRESTER
DC SUBSYSTEM 3_3

in Connection cabinet

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227.a

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Editor	Freqcon_JD			Statron	FREQCON	DC SURGE ARRESTER 3_1 - 3_3	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter page: 228
Date								+ total: 482

VX25

221

Spare connections, if the BSU will be from here 20A supplied.

* cable intro seperate UL protrctive tube

+CIR
-231U1
/231.a.0
&EFA++/1a.6
VX DC switch and Fuse 3*250A 1000V
Pos. 2

L_IGBT 2_1 / 211.0 — SUB_2_1_V / ++CT/163.9 — SUB_2_1_DC- / 201.9 — SUB_2_1_V.1 / ++CT/162.9
L_IGBT 2_2 / 211.0 — SUB_2_2_V / ++CT/163.9 — SUB_2_2_DC- / 201.9 — SUB_2_2_V.1 / ++CT/162.9
L_IGBT 2_3 / 211.0 — SUB_2_3_V / ++CT/163.9 — SUB_2_3_DC- / 201.9 — SUB_2_3_V.1 / ++CT/162.9

231W1 OZ-600 2x0,75 mm² (1 / 2)
231W2 OZ-600 2x0,75 mm² (1 / 2)
231W3 OZ-600 2x0,75 mm² (1 / 2)

50 mm² NSGAFöu BK

PE — PE — Rear mounting plate — 7

IGBT1 1+ — V_IGBT1 1+ — UDC [1]- — V_DC1 1+ — V_DC 1-
IGBT2 2+ — V_IGBT2 2+ — UDC [2]- — V_DC2 2+
IGBT3 3+ — V_IGBT3 3+ — UDC [3]- — V_DC3 3+

F3 1A — F4 1A [20A, aR (BSU)] — F0 [20A, aR (BSU)]
F7 1A — F8 1A
F11 1A — F12 1A

2,5 mm² NSGAFöu BK

-C1 — -C7 — -C13
x1 x2
340µF, 1320V DC Epcos

16 mm² NSGAFöu BK

Front mounting plate — PE — -U1 EMI Suppesion CAP — PE — Front mounting plate — PE
16 mm² FGKV
1 2 3 4 5 6
16 mm² in Shrinkable Tube FGKV

-K1 /231.a.1 1500V 300A — -K7 /231.a.3 1500V 300A
-K2 /231.a.2 1500V 300A — -K8 /231.a.4 1500V 300A
-K3 /231.a.2 1500V 300A — -K9 /231.a.5 1500V 300A
A1 A2

70 mm² NSGAFöu BK

-F1 /231.a.7 1250V 400A 1KN/110 HLS Datenblatt
-F2 /231.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F5 /231.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F6 /231.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F9 /231.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F10 /231.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS

IEC

DC1 + — DC1 - — DC2 + — DC2 - — DC3 + — DC3 -

*2 The single conductor must be placed in the protective tube

AWG	mm²	*cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

EEC

+AC_DC-231W10 — SUB 2_1 + — =UNIT_02 — DC+2_1_BAT / =UNIT_02++ASC/678.0
+AC_DC-231W11 — SUB 2_1 - — DC-2_1_BAT / =UNIT_02++ASC/678.0
+AC_DC-231W12 — SUB 2_2 + — =UNIT_02 — DC+2_2_BAT / =UNIT_02++ASC/678.2
+AC_DC-231W13 — SUB 2_2 - — DC-2_2_BAT / =UNIT_02++ASC/678.2
+AC_DC-231W14 — SUB 2_3 + — =UNIT_02 — DC+2_3_BAT / =UNIT_02++ASC/678.5
+AC_DC-231W15 — SUB 2_3 - — DC-2_3_BAT / =UNIT_02++ASC/678.5

Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_02&EFA++/1a.5
Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_02&EFA++/1a.7
Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.0

DC+2_1 / 238a.1 — DC-2_1 / 238a.1
DC+2_2 / 238a.4 — DC-2_2 / 238a.4
DC+2_3 / 238a.7 — DC-2_3 / 238a.8

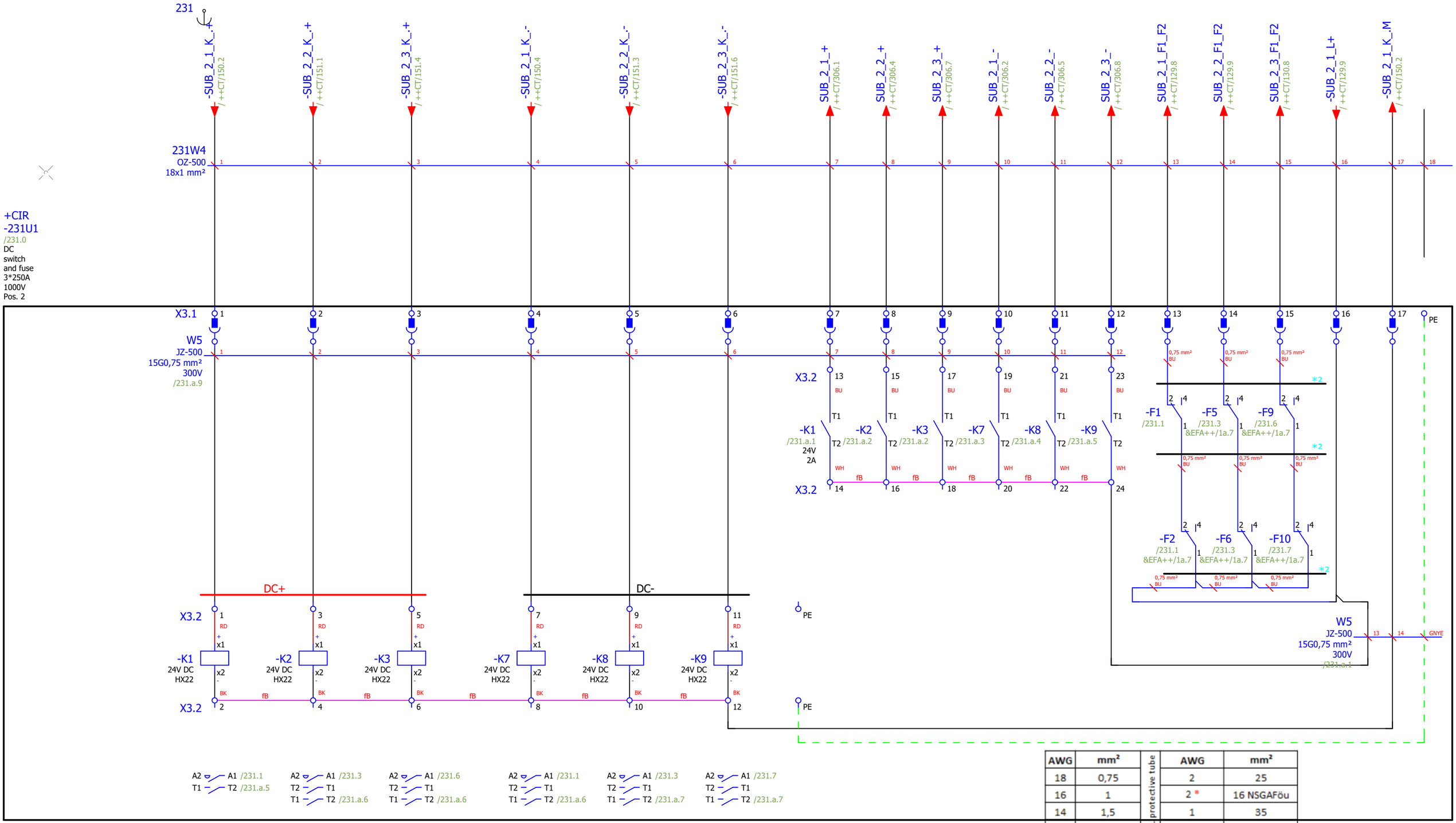
DC+ and DC- Busbars in Connection cabinet

previous page: 228

next page: 231.a

Editor	Freqcon_JD			Statron	FREQCON	SUBSYSTEM 2_1 - 2_3 DC 3 x 250A	20240809_V0.7
Date	18.06.2024						10354_23A2007
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			
Date							

=	UNIT_01	Converter Container 1	
&	EFS	Circuit diagram	
++	CONV	Converter	page: 231
+			total: 482



AWG	mm²	* cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

*2 The single conductor must be placed in the protective tube

IEC

previous page: 231

next page: 237

Editor	Freqcon_JD			Statron	FREQCON	SUBSYSTEM 2_1 - 2_3 DC 3 x 250A	20240809_V0.7
Date	18.06.2024						= UNIT_01 Converter Container 1
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			& EFS Circuit diagram
Date						10354_23A2007	++ CONV Converter page: 231.a
							+ total: 482

VX25
224

Spare connections,
if the BSU
will be from here
20A supplied.

* cable intro seperate UL protrctive tube

+CIR
-237U1
/237.a.0
&EFA++/1a.6
VX DC
switch
and Fuse
3*250A
1000V
Pos. 3

L_IGBT 4_1 / 217.0
SUB_4_1_V / ++CT/164.9
SUB_4_1_DC- / 217.9
SUB_4_1_V.1 / ++CT/164.9
L_IGBT 4_2 / 217.0
SUB_4_2_V / ++CT/164.9
SUB_4_2_DC- / 217.9
SUB_4_2_V.1 / ++CT/164.9
L_IGBT 4_3 / 217.0
SUB_4_3_V / ++CT/164.9
SUB_4_3_DC- / 217.9
SUB_4_3_V.1 / ++CT/164.9

237W1 OZ-600 2x0,75 mm²
237W1 OZ-600 2x0,75 mm²
237W2 OZ-600 2x0,75 mm²
237W2 OZ-600 2x0,75 mm²
237W3 OZ-600 2x0,75 mm²
237W3 OZ-600 2x0,75 mm²

50 mm² NSGAFöu BK

PE
PE
Rear mounting plate
7

IGBT1 1+ | V_IGBT1 1+ | V_DC1 1+ | V_DC 1-
UDC [1]-
IGBT2 2+ | V_IGBT2 2+ | V_DC2 2+
UDC [2]-
IGBT3 3+ | V_IGBT3 3+ | V_DC3 3+
UDC [3]-

F3 1A
F4 1A [20A, aR (BSU)]
F0 [20A, aR (BSU)]
F7 1A
F8 1A
F11 1A
F12 1A

2,5 mm² NSGAFöu BK

-C1
-C7
-C13
x1 x2
340µF, 1320V DC Epcos
16 mm² NSGAFöu BK

Front mounting plate
-U1
EMI
Suppesion CAP
16 mm² FGKV
1 2 3 4 5 6
16 mm² in Shrin-kable Tube FGKV

-K1 /237.a.1 1500V 300A
-K7 /237.a.3 1500V 300A
-K2 /237.a.2 1500V 300A
-K8 /237.a.4 1500V 300A
-K3 /237.a.2 1500V 300A
-K9 /237.a.5 1500V 300A
A1 A2

70 mm² NSGAFöu BK

-F1 /237.a.7 1250V 400A 1KN/110 HLS Datenblatt
-F2 /237.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F5 /237.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F6 /237.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F9 /237.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS
-F10 /237.a.8 &EFA++/1a.7 1250V 400A 1KN/110 HLS

IEC

DC1 + / DC1 -
DC2 + / DC2 -
DC3 + / DC3 -

*2
The single conductor
must be placed
in the protective tube

AWG	mm²	*cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

+AC_DC-237W10 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.0
+AC_DC-237W11 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.0
+AC_DC-237W12 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.5
+AC_DC-237W13 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.5
+AC_DC-237W14 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.5
+AC_DC-237W15 Cu 100mm x 10mm x 195mm FRQ.50604 &EFA++/1a.7 =UNIT_03&EFA++/1a.5

SUB 4_1 + Pos. =UNIT_03 → DC+4_1_BAT / =UNIT_03++ASC/678.2
SUB 4_1 - Pos. → DC-4_1_BAT / =UNIT_03++ASC/678.2
SUB 4_2 + Pos. =UNIT_03 → DC+4_2_BAT / =UNIT_03++ASC/678.5
SUB 4_2 - Pos. → DC-4_2_BAT / =UNIT_03++ASC/678.5
SUB 4_3 + Pos. =UNIT_03 → DC+4_3_BAT / =UNIT_03++ASC/678.7
SUB 4_3 - Pos. → DC-4_3_BAT / =UNIT_03++ASC/678.7

DC+4_1 / 238b.1
DC-4_1 / 238b.1
DC+4_2 / 238b.4
DC-4_2 / 238b.4
DC+4_3 / 238b.7
DC-4_3 / 238b.8

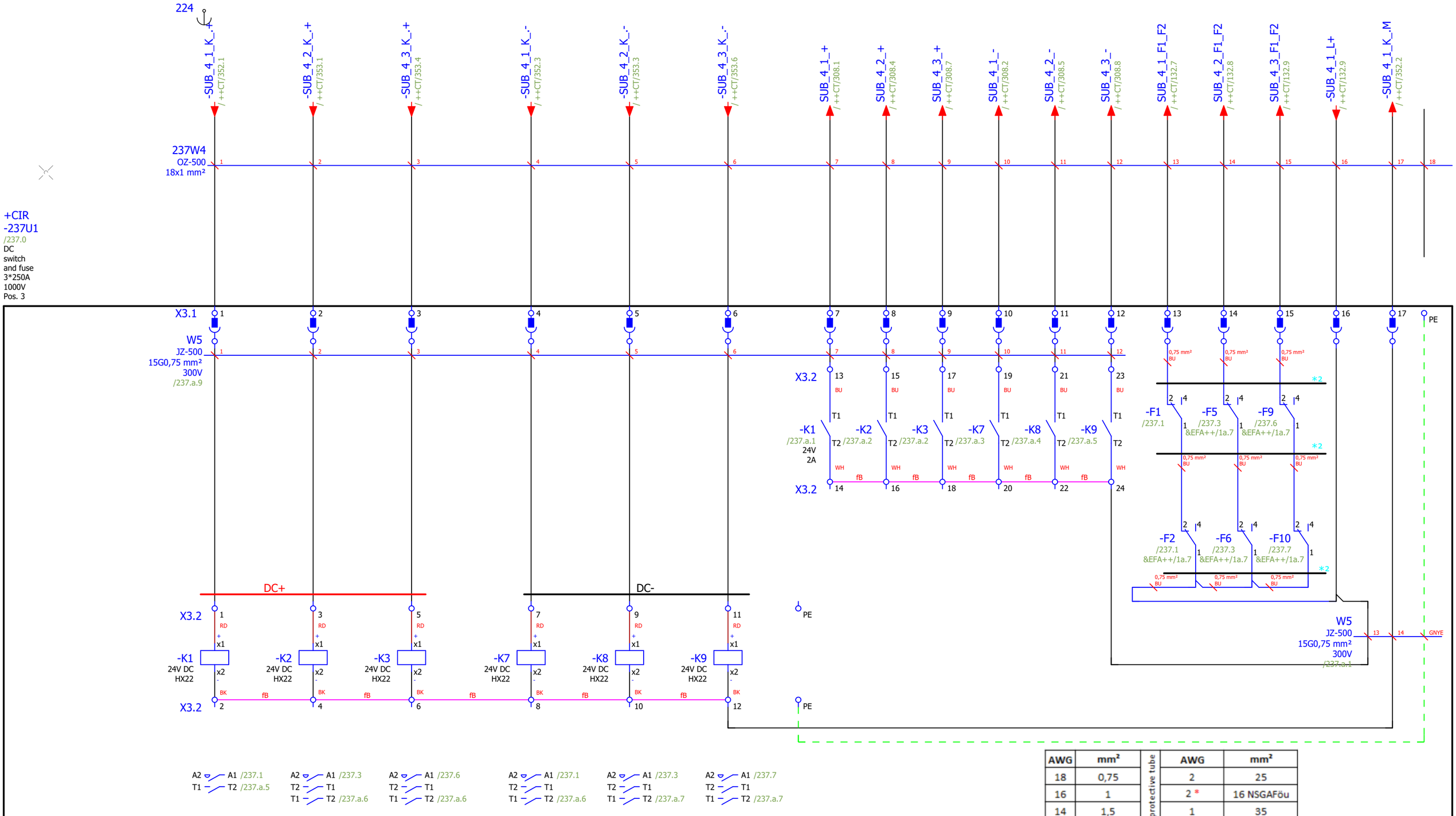
EEC

DC+ and DC- Busbars
in Connection cabinet

previous page: 231.a
next page: 237.a

Editor	Freqcon_JD			Statron	FREQCON	SUBSYSTEM 4_1 - 4_3 DC 3 x 250A	20240809_V0.7
Date	18.06.2024						10354_23A2007
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			
Date							

=	UNIT_01	Converter Container 1	
&	EFS	Circuit diagram	
++	CONV	Converter	page: 237
+			total: 482



AWG	mm²	* cable into seperate UL protective tube	AWG	mm²
18	0,75		2	25
16	1		2 *	16 NSGAFöu
14	1,5		1	35
12	2,5		250 kcmil	95 ALU
12 *	2,5 NSGAFöu		2x2	1x70 NSGAFöu
10	4		2x4	2x70 NSGAFöu
6	10		4x250 kcmil	4x70 NSGAFöu
6 *	10 NSGAFöu		6x250 kcmil	6x70 NSGAFöu
4	16			

*2 The single conductor must be placed in the protective tube

IEC

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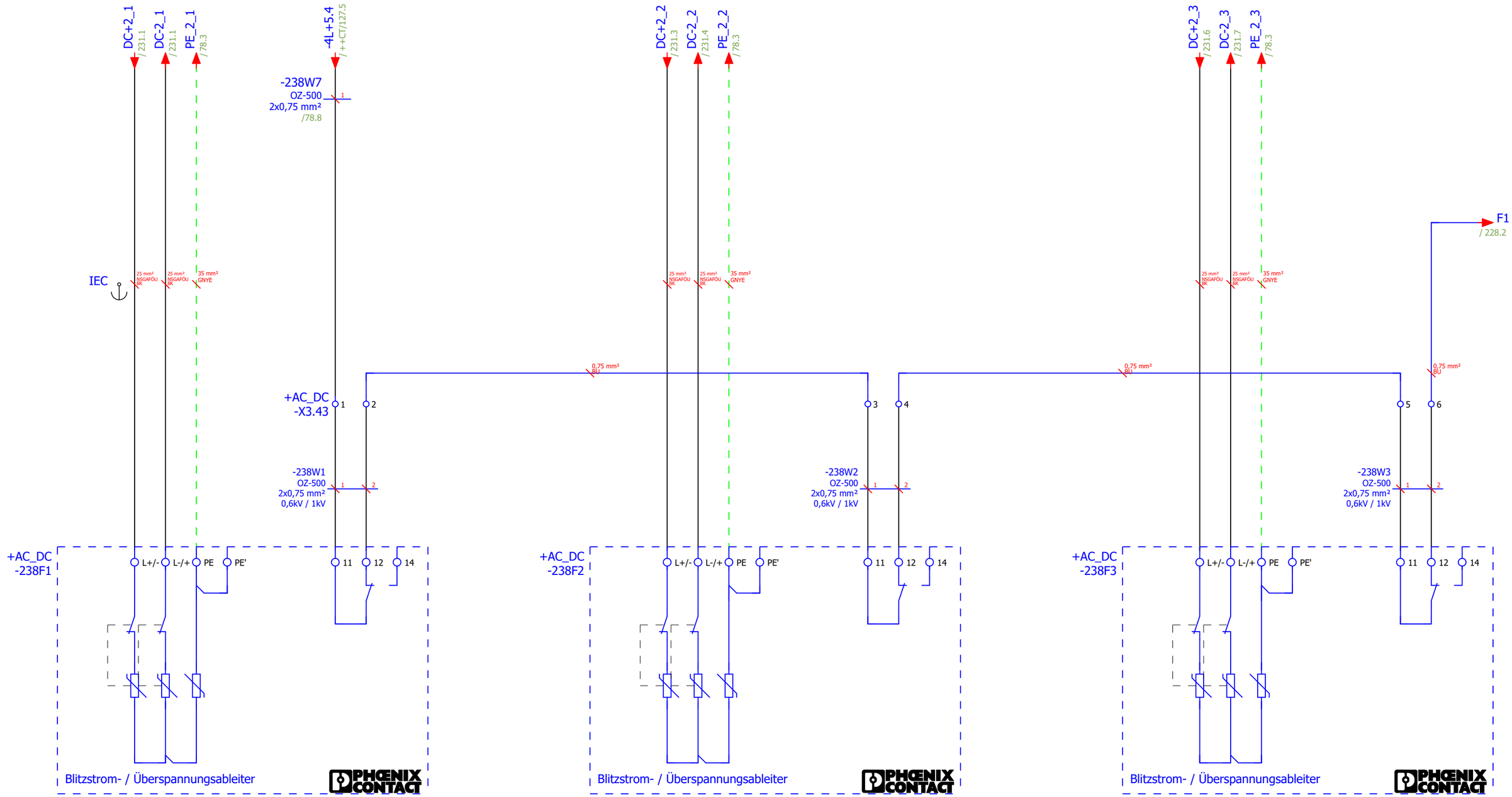
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Editor	Freqcon_DG			Statron	FREQCON	SUBSYSTEM 4_1 - 4_3 DC 3 x 250A	20240809_V0.7
Date	29.07.2024						= UNIT_01 Converter Container 1
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			& EFS Circuit diagram
Date						10354_23A2007	++ CONV Converter page: 237.a
							+ total: 482

DC+ and DC- Busbars

DC+ and DC- Busbars

DC+ and DC- Busbars



SURGE ARRESTER
DC SUBSYSTEM 2_1

SURGE ARRESTER
DC SUBSYSTEM 2_2

SURGE ARRESTER
DC SUBSYSTEM 2_3

in Connection cabinet

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237.a

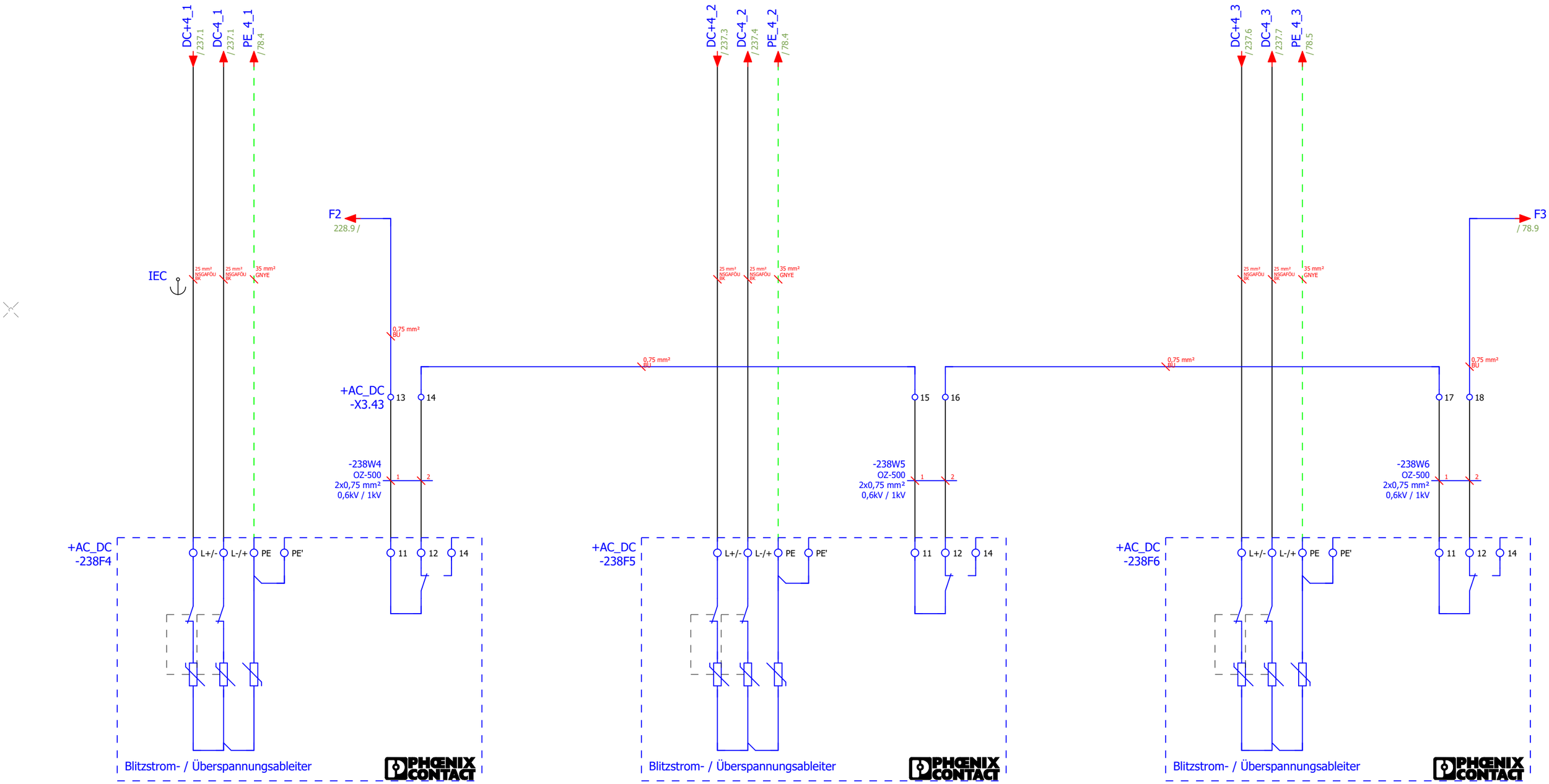
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238b

Editor	Freqcon_JD			Statron	FREQCON	DC SURGE ARRESTER 2_1 - 2_3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 238a
Date								+	total: 482

DC+ and DC- Busbars

DC+ and DC- Busbars

DC+ and DC- Busbars



SURGE ARRESTER
DC SUBSYSTEM 4_1

SURGE ARRESTER
DC SUBSYSTEM 4_2

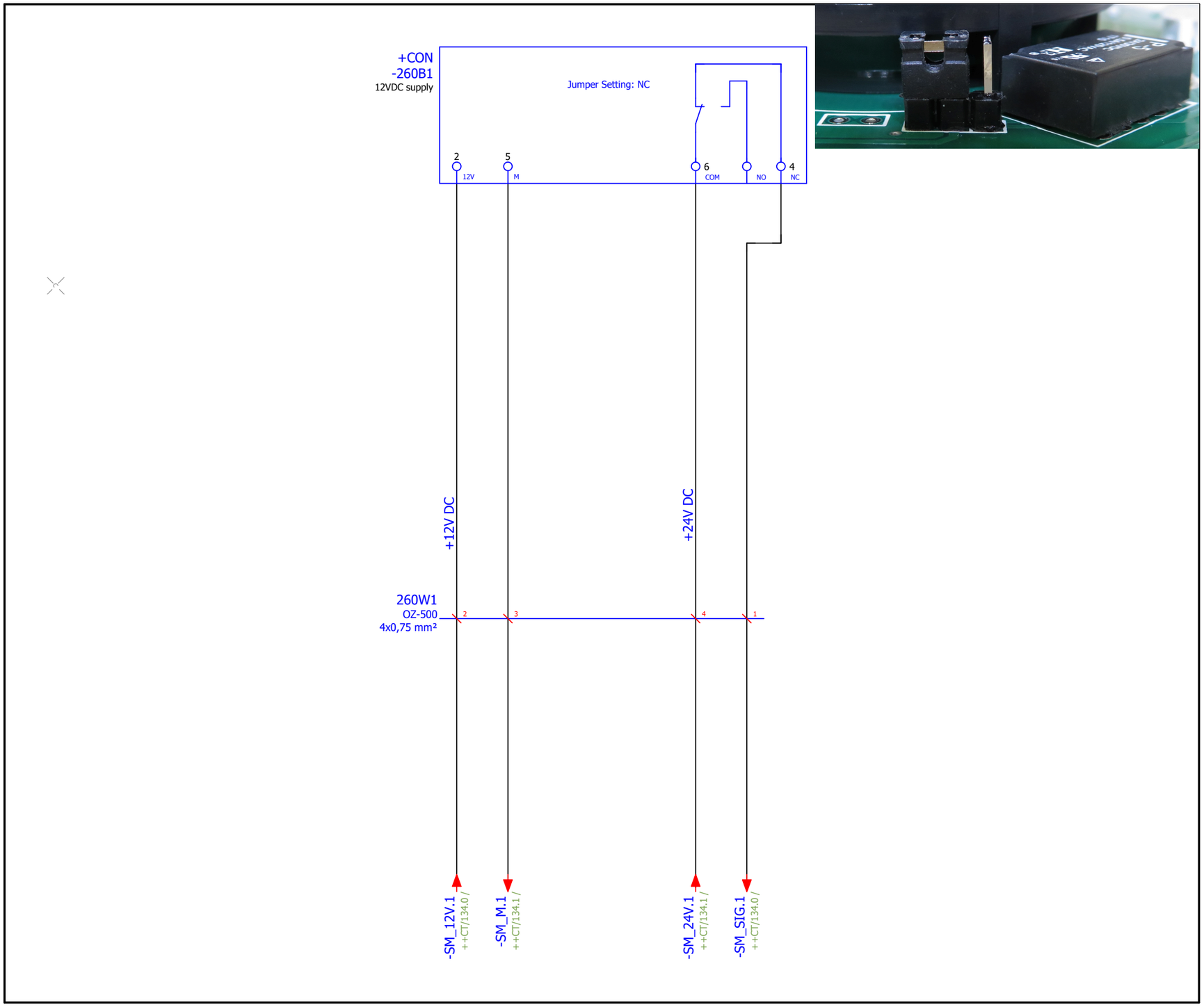
SURGE ARRESTER
DC SUBSYSTEM 4_3

in Connection cabinet

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238a

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260

Editor	Freqcon_JD			Statron	FREQCON	DC SURGE ARRESTER 4_1 - 4_3	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter page: 238b
Date								+ total: 482

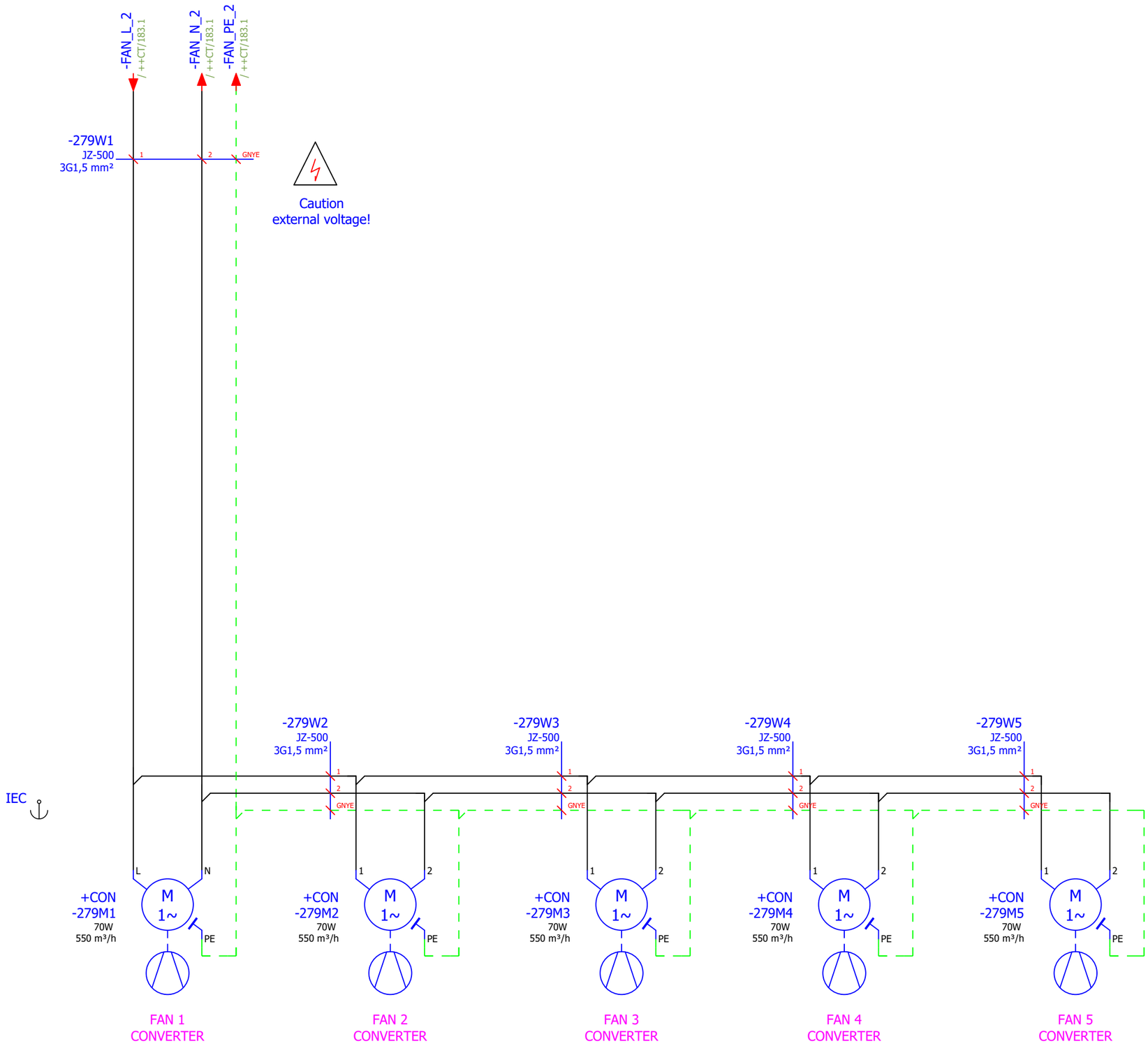


SMOKE DETECTOR
+CON CABINET

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238b

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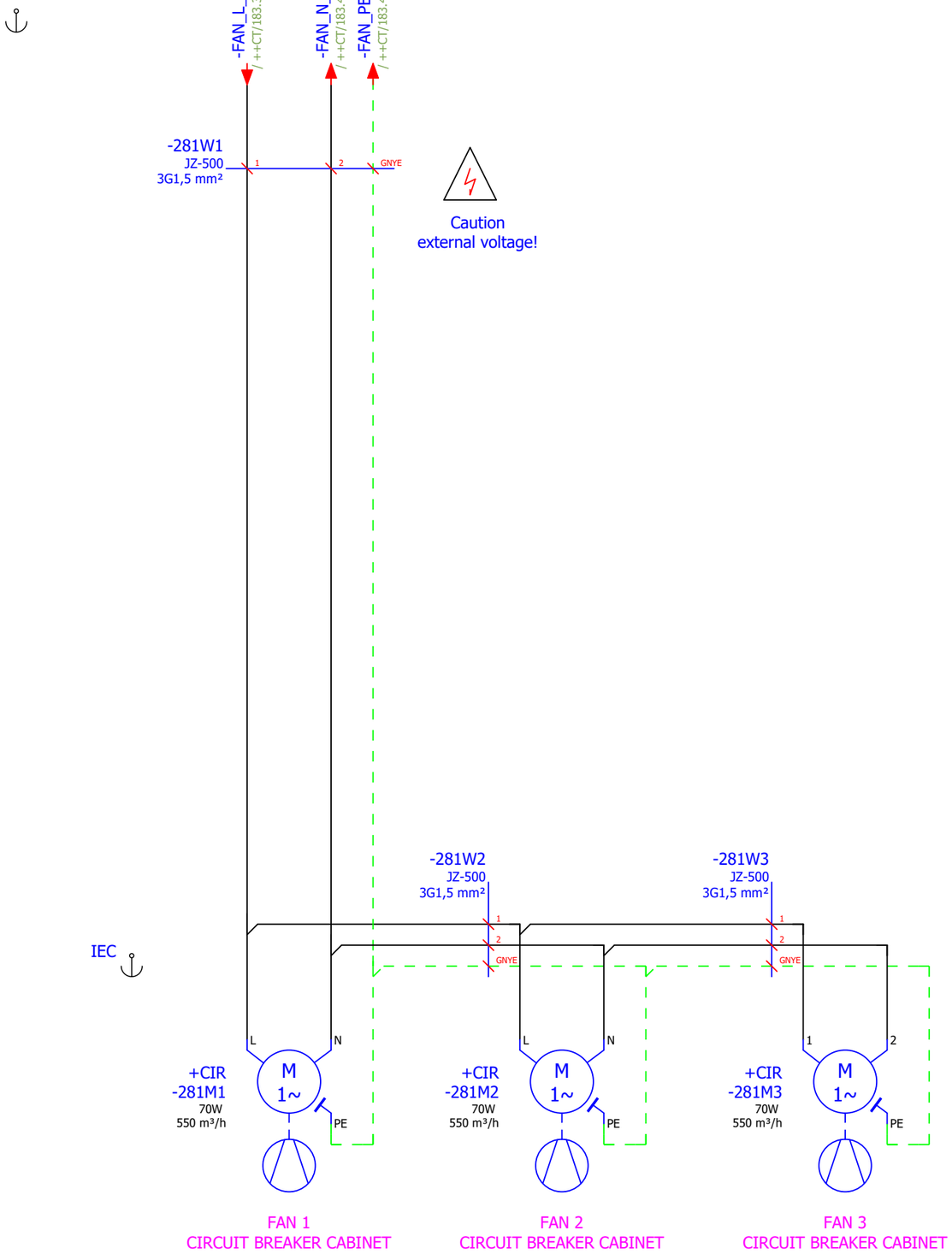
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Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter	page: 260
Date								+		total: 482



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281

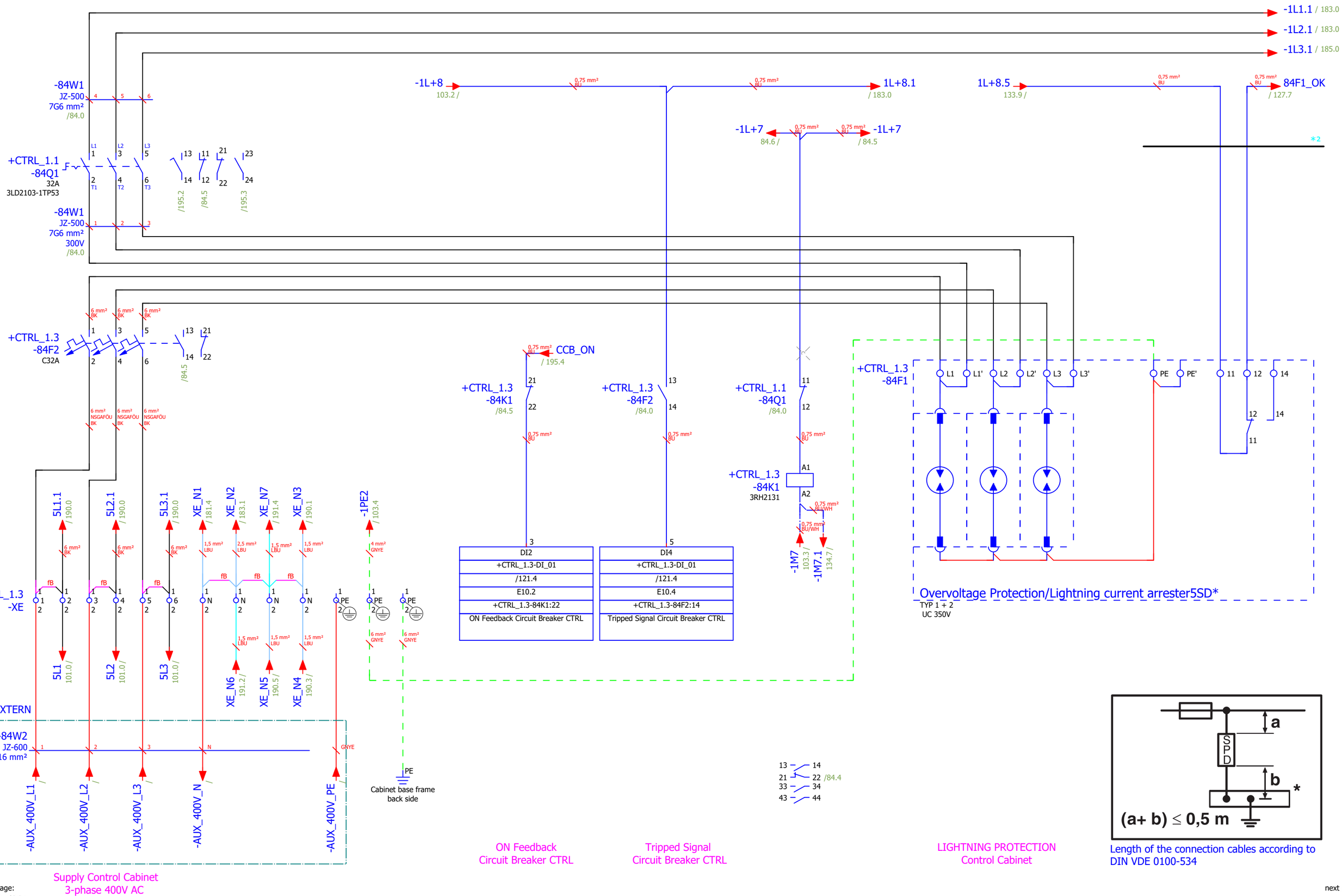
Editor	Freqcon_JD			Statron	FREQCON	CONVERTER CABINET CLIMATE	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter	page: 279
Date								+		total: 482



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279

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++CT/84

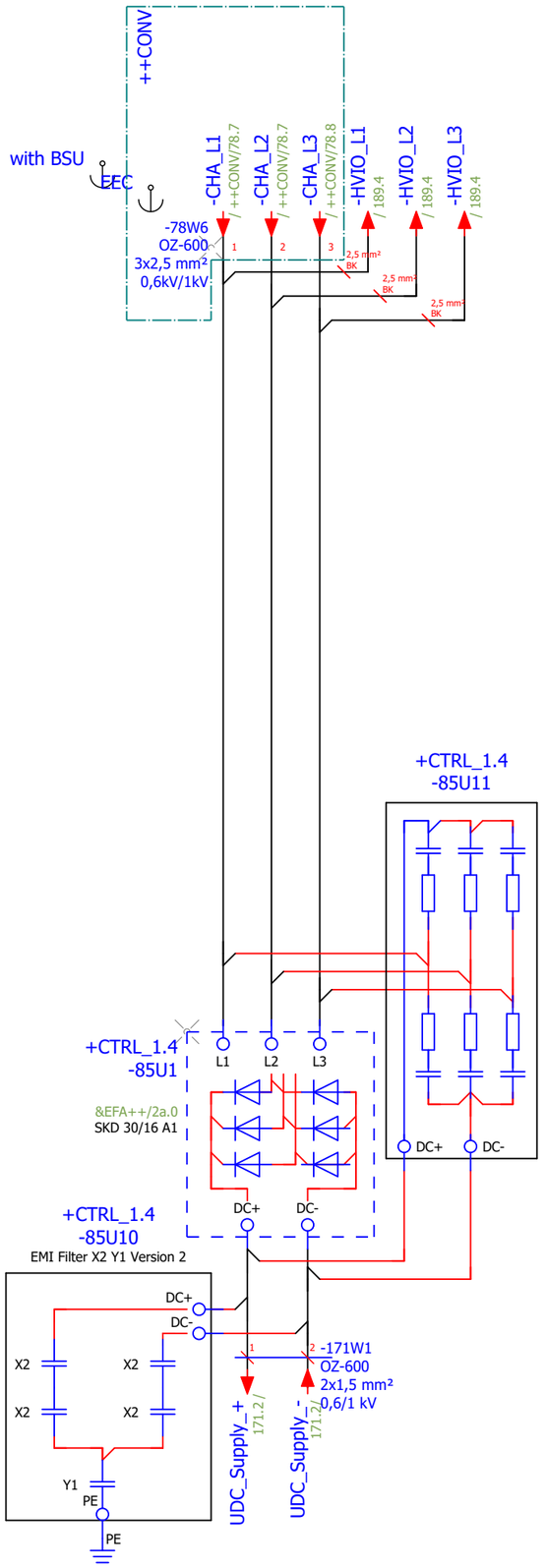
Editor	Freqcon_JD			Statron	FREQCON	CIRCUIT BREAKER CABINET CLIMATE	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV	Converter	page: 281
Date								+		total: 482



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++CONV/281

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Editor	Freqcon_DG			Statron	FREQCON	FEEDING CONTROL CABINET (CTRL)	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 84
Date								+	total: 482



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earthing via cooling element

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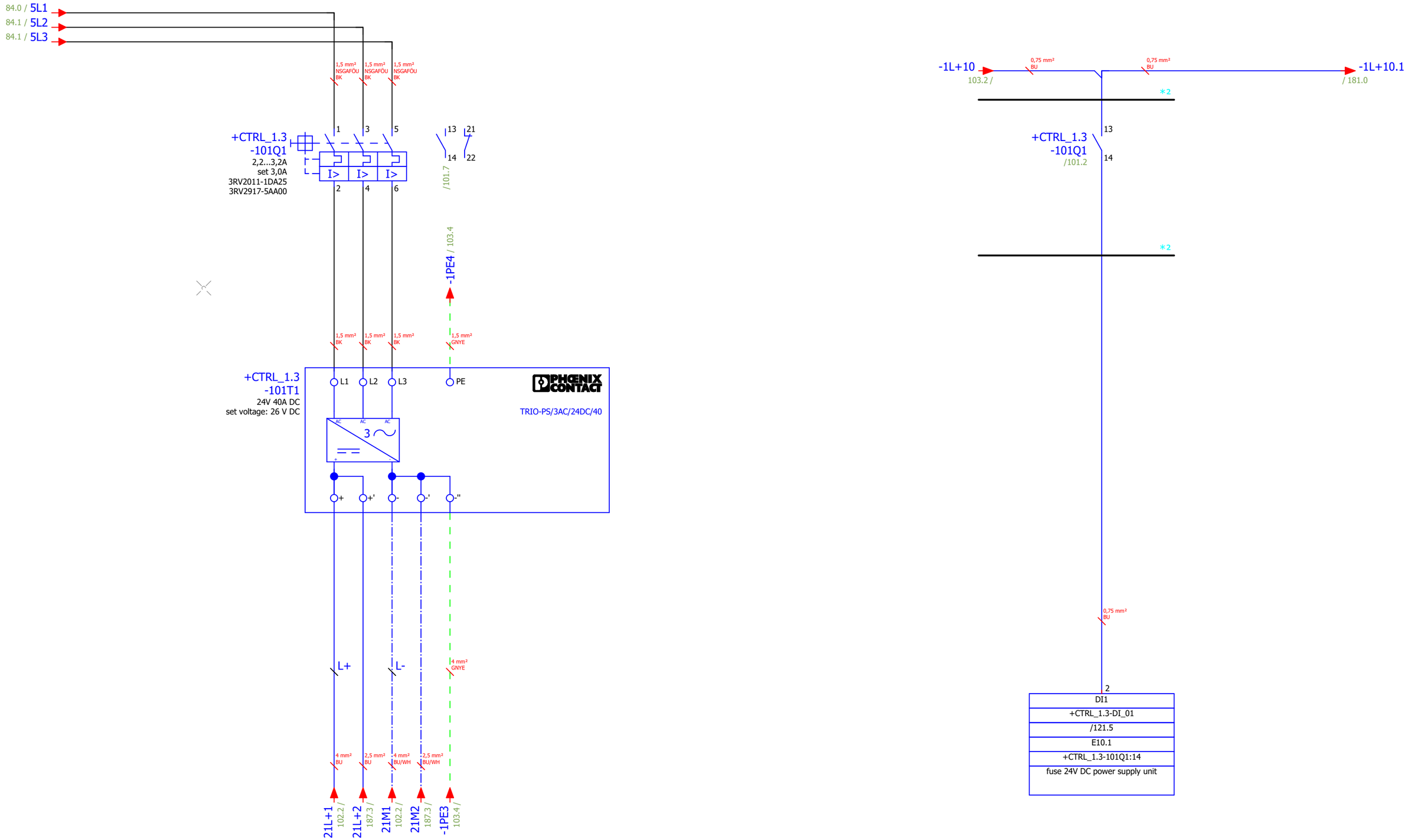
Editor	Freqcon_DG			Statron	FREQCON	SUPPLY UDC	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	29.07.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 85
Date								+		total: 482

Control Cabinet

Pages 100 - 199

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*2

The single conductor must be placed in the protective tube

400VAC
Power Supply
24V DC OK

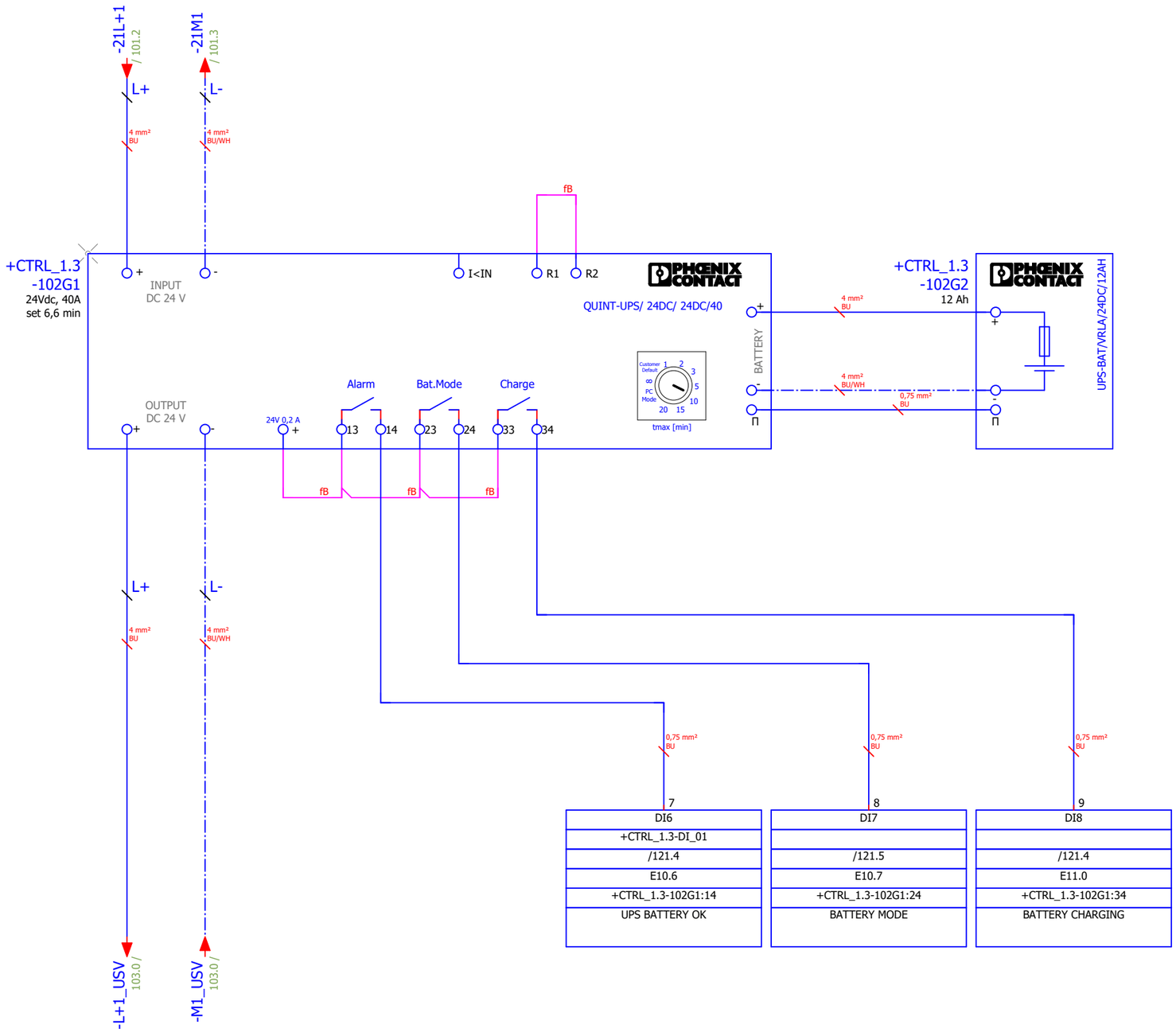
fuse
24V DC power supply unit

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Power supply unit from 400V AC

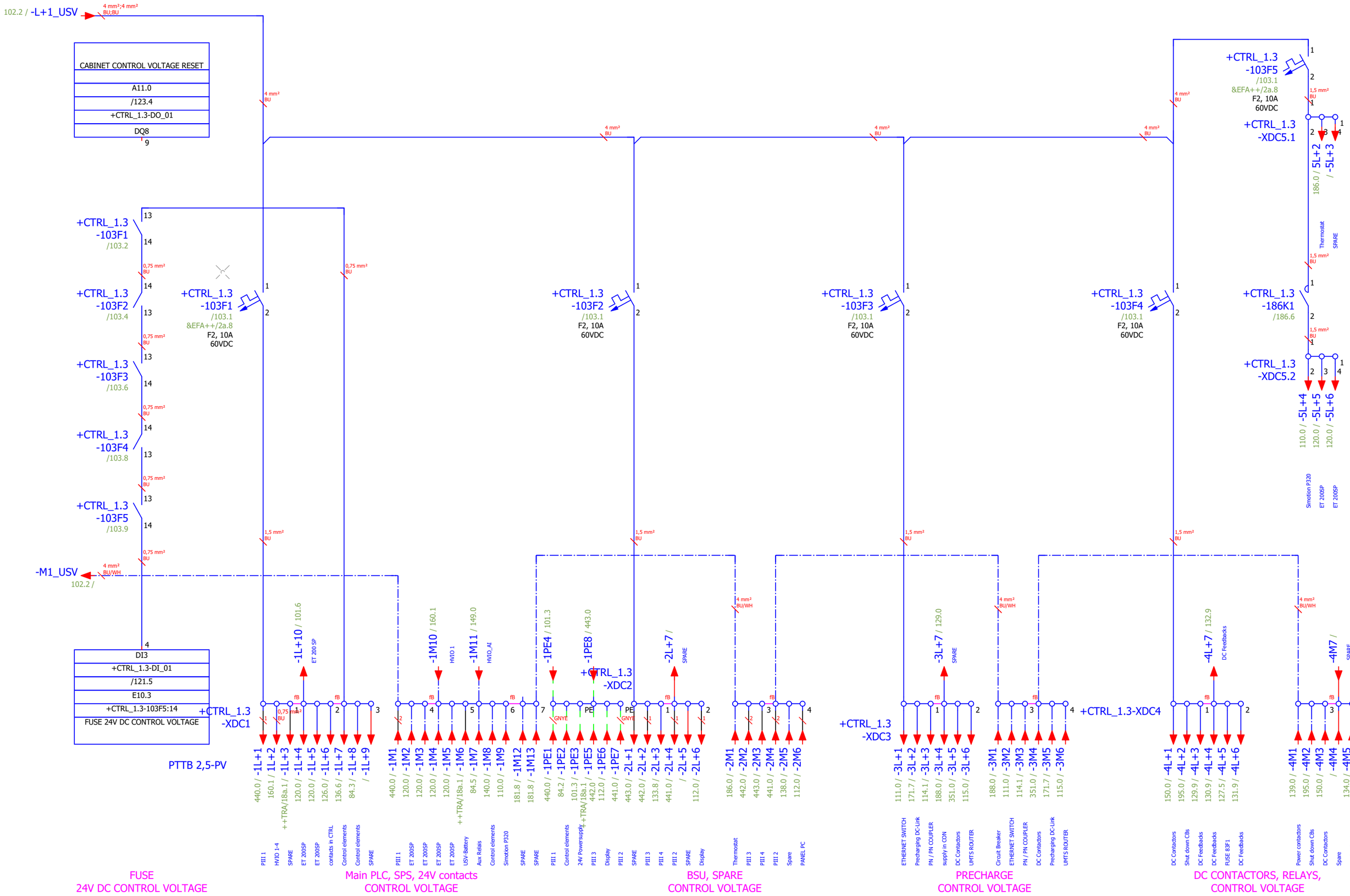
Editor	Freqcon_DG			Statron	FREQCON	CONTROL VOLTAGE POWER SUPPLY UNIT	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 101
Date								+	total: 482



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101

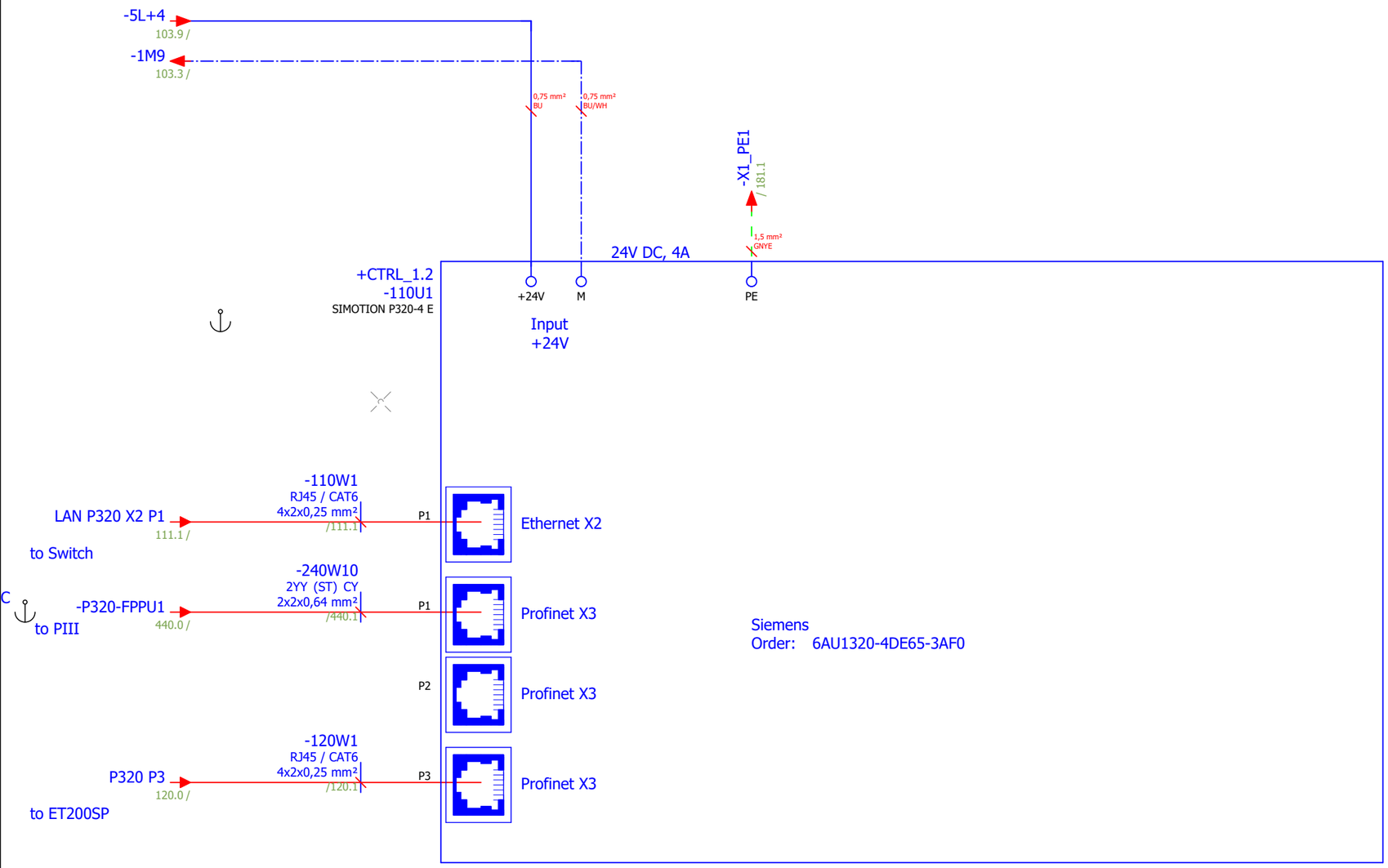
next page:
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Editor	Freqcon_JD			Statron	FREQCON	CONTROL VOLTAGE UPS	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 102
Date								+	total: 482

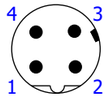


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next page: 110

Editor	Freqcon_DG			Statron	FREQCON	CONTROL VOLTAGE FUSE	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	29.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 103
Date								+	total: 482



Plug with D-coded



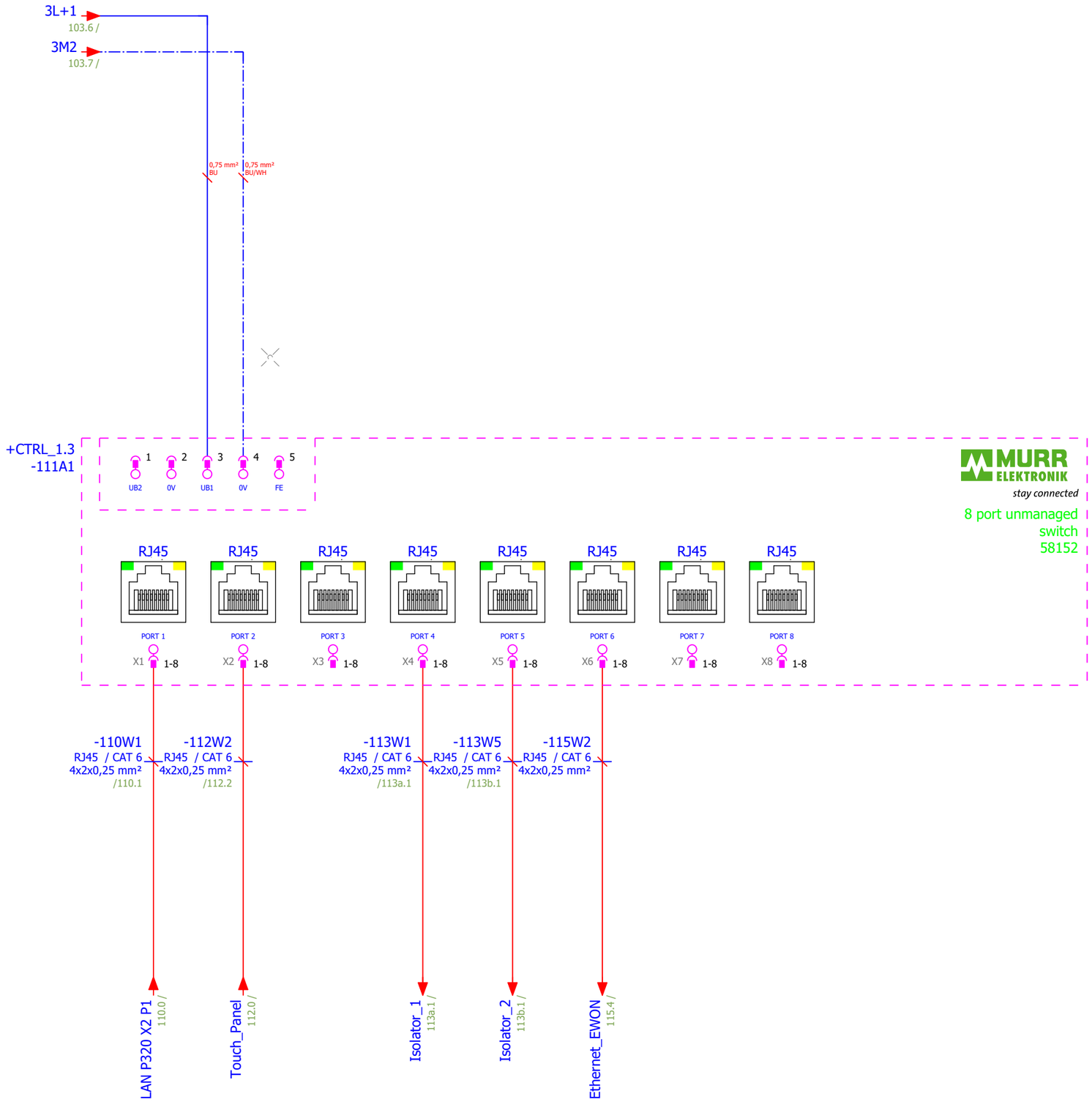
Top view of the pinheader

Signal	Colour	RJ45	M12 plug
TD+	yellow	1	1
TD-	orange	2	3
RD+	white	3	2
RD-	blue	6	4

Connection P320 -- PIII

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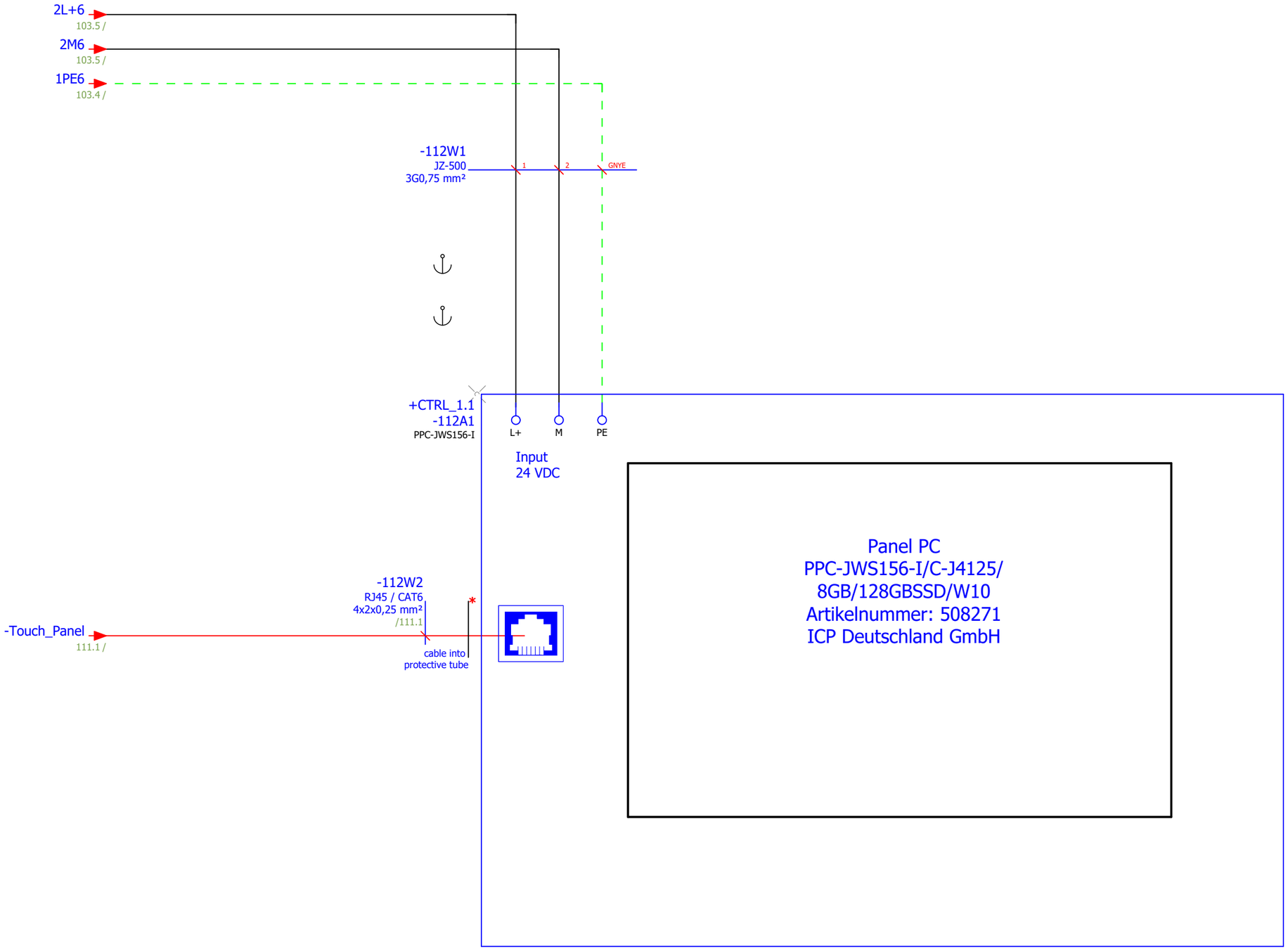
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Editor	Freqcon_JD			Statron	FREQCON	ETHERNET SWITCH	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 111
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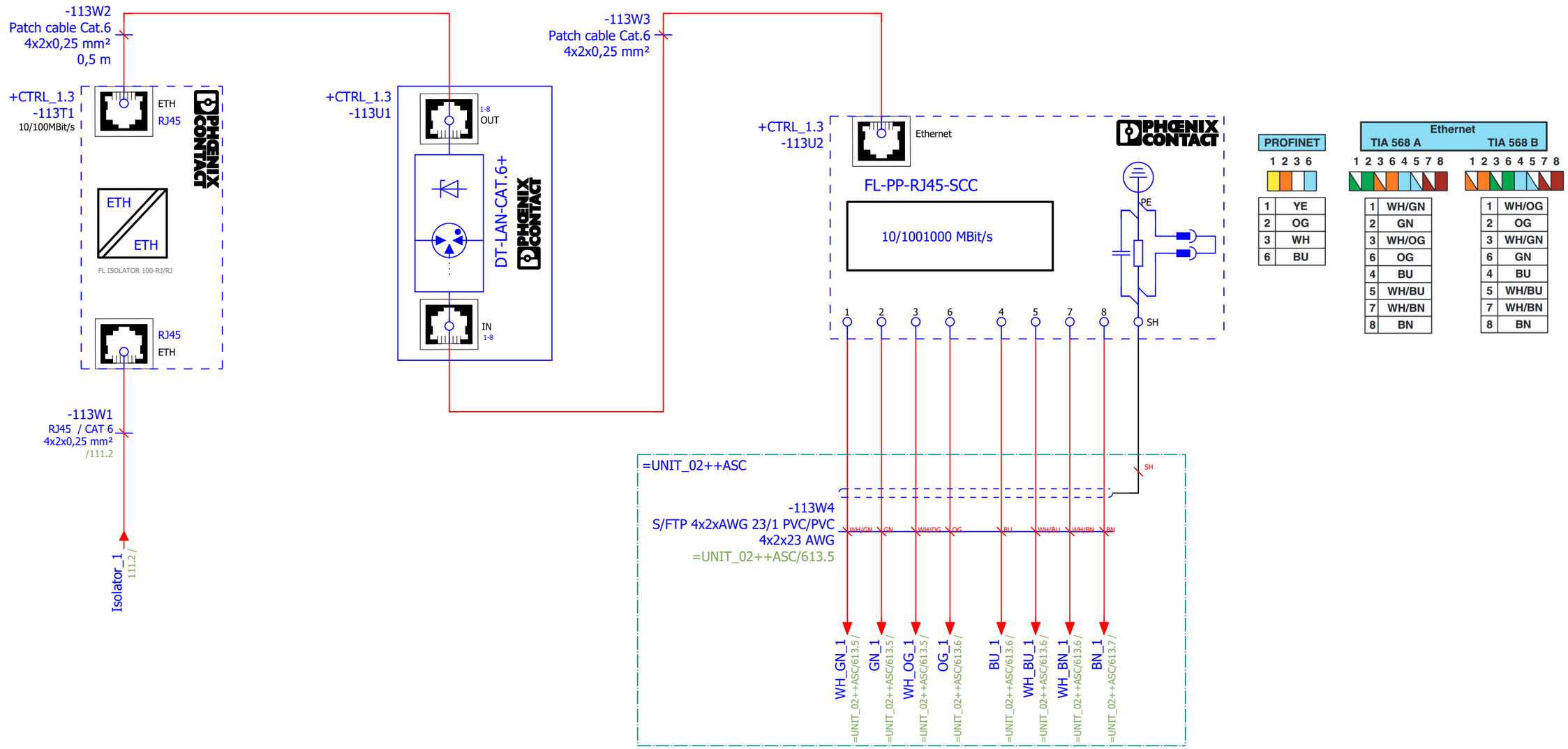


PANEL PC

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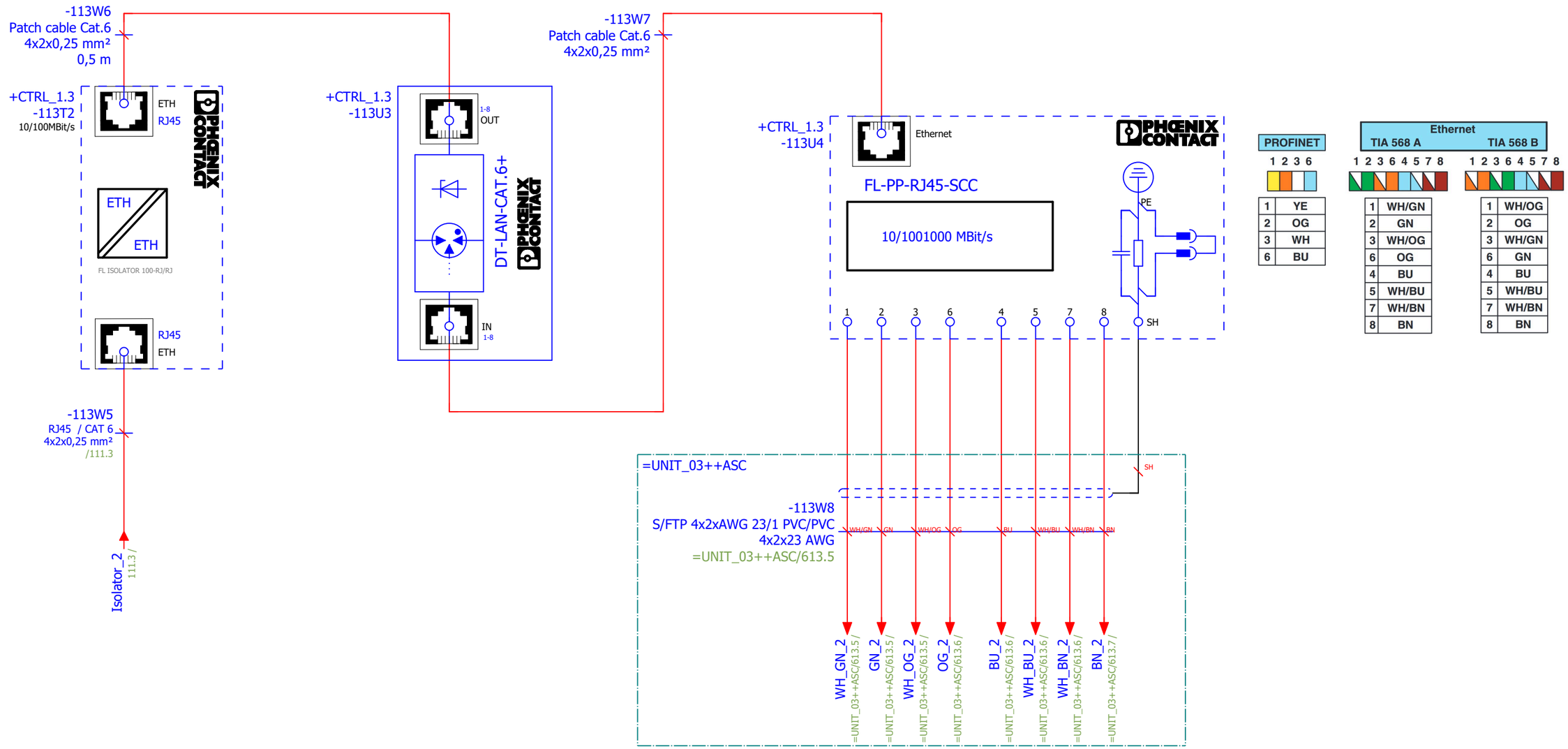
Editor	Freqcon_JD			Statron	FREQCON	PANEL PC HMI	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 112
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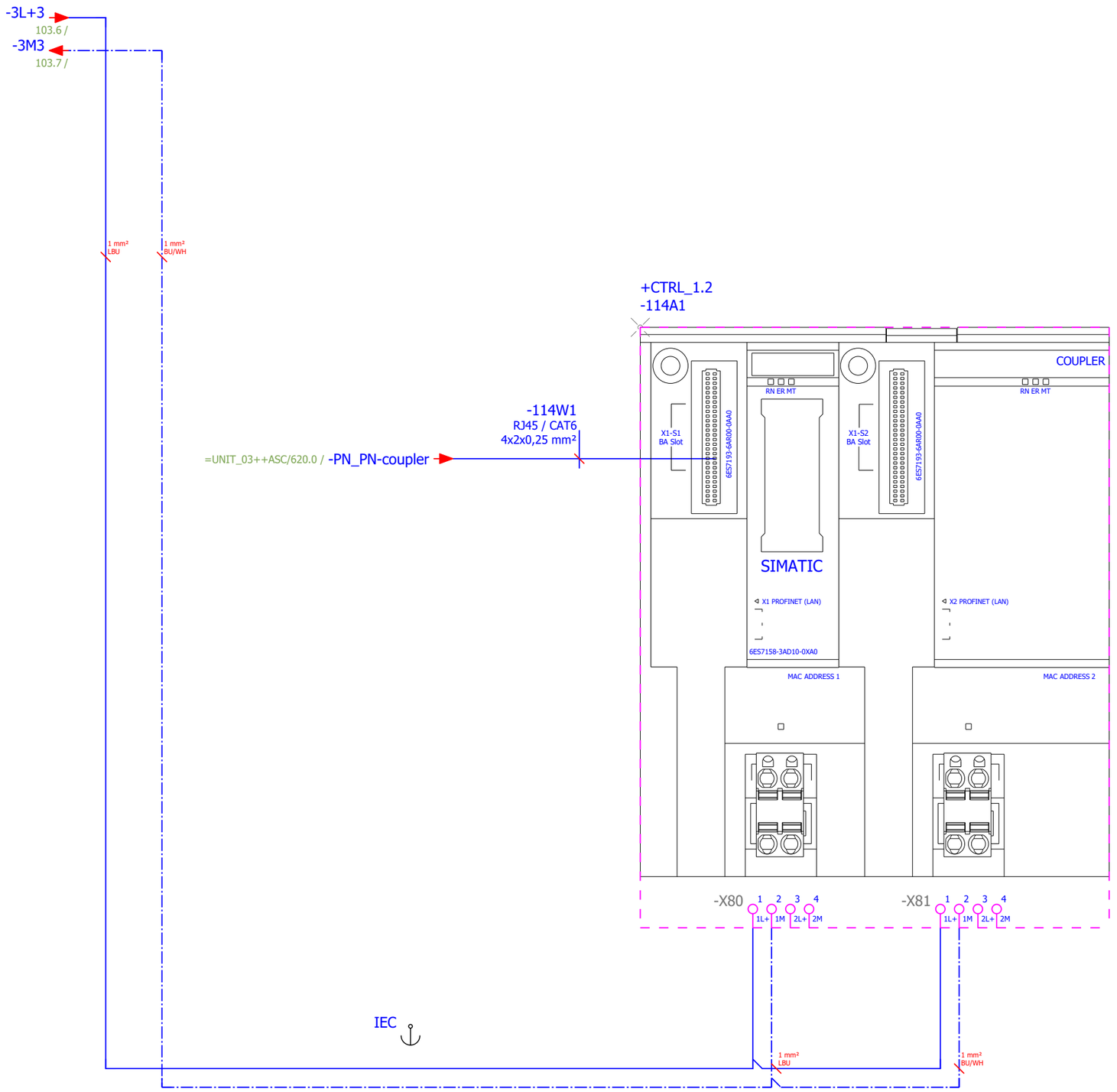
Editor	Freqcon_JD			Statron	FREQCON	ETHERNET / PROFINET ISOLATOR	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 113a
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Editor	Freqcon_JD			Statron	FREQCON	ETHERNET / PROFINET ISOLATOR	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 113b
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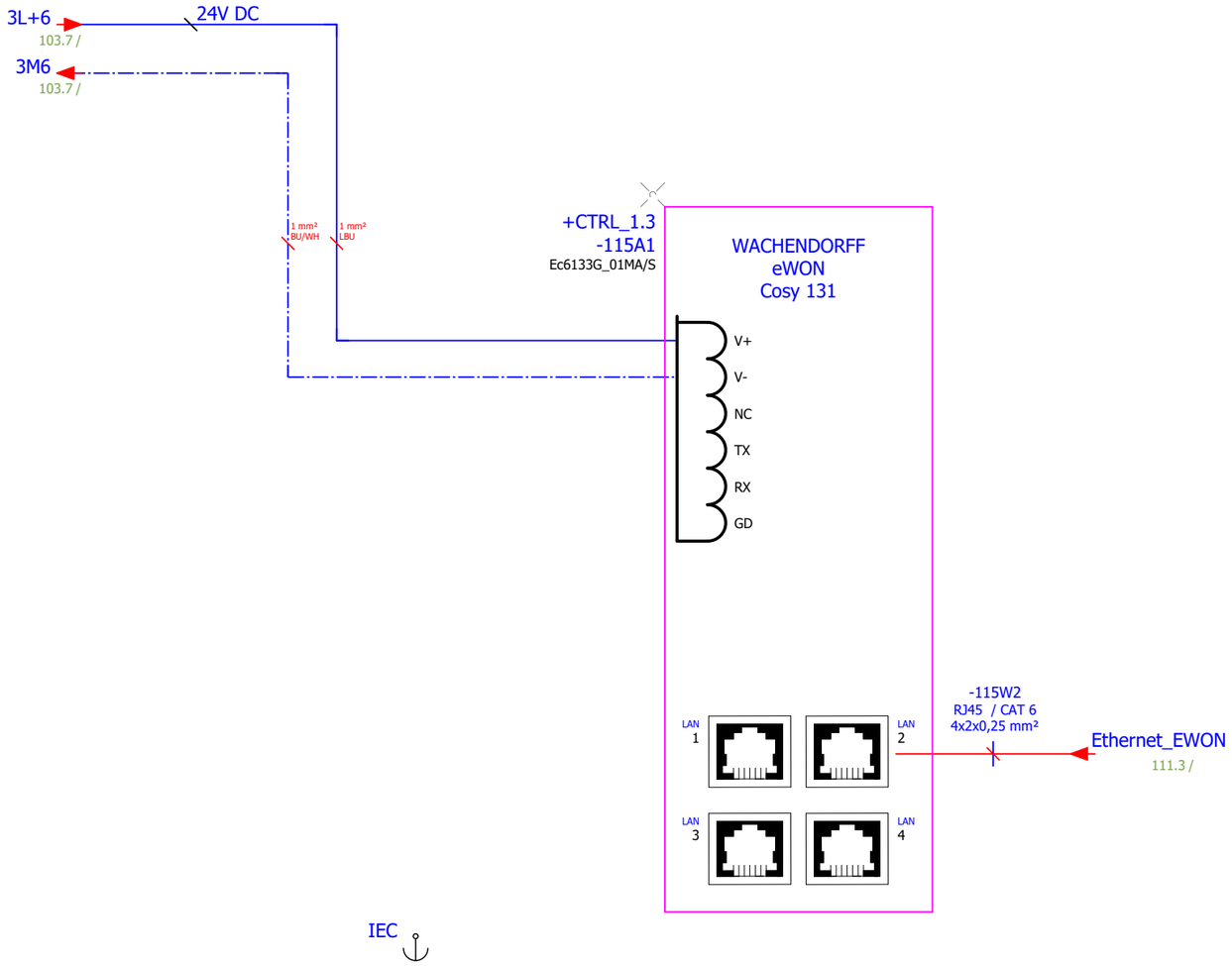


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Editor	Freqcon_JD			Statron	FREQCON	HELMHOLZ	20240809_V0.7	= UNIT_01	Converter Container 1
Date	02.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets
Date								+	

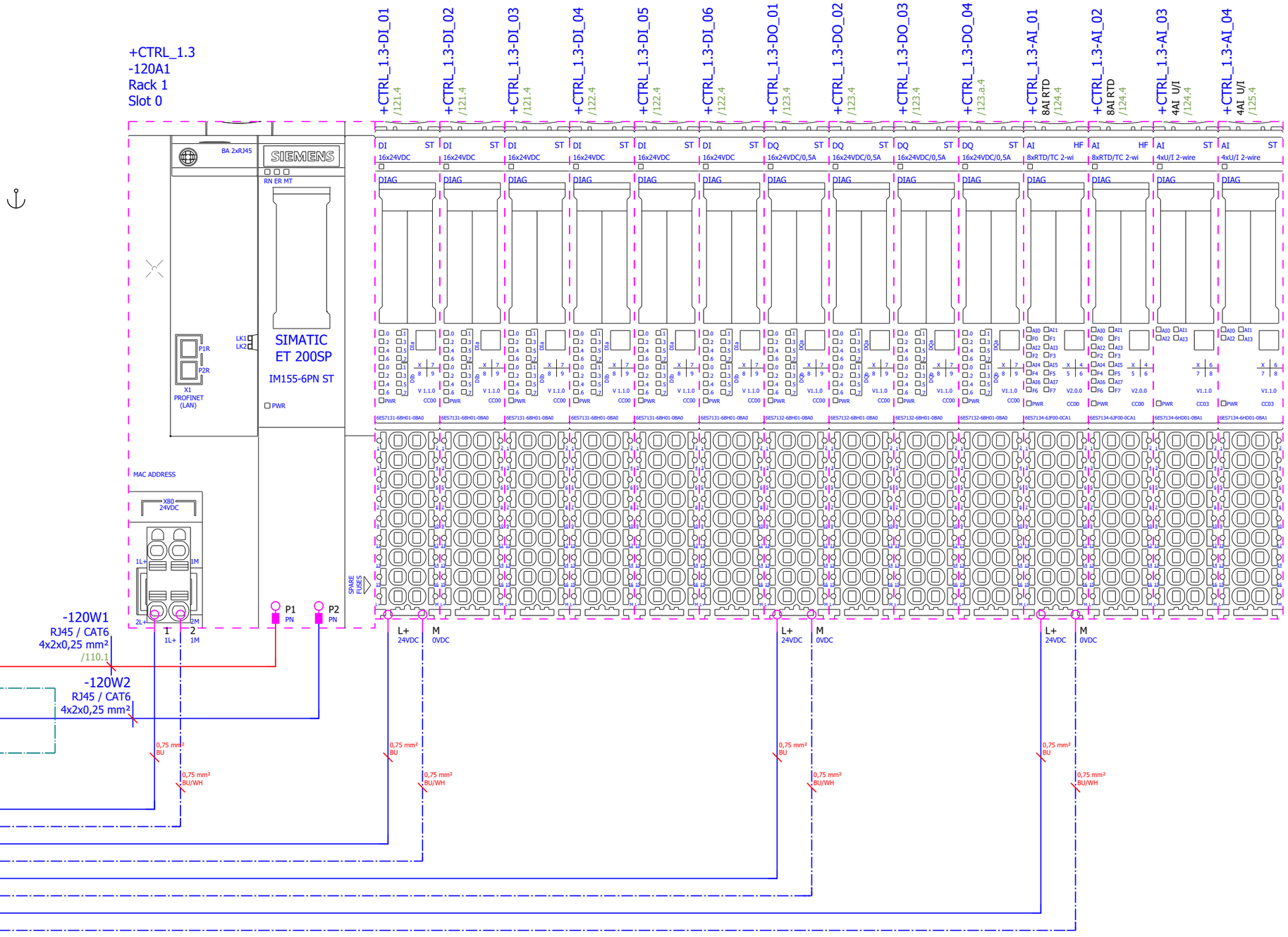
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Editor	Freqcon_JD			Statron	FREQCON	UMTS ROUTER	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
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Editor	Freqcon_JD			Statron	FREQCON	ET200 24V DC	20240809_V0.7	= UNIT_01	Converter Container 1
Date	20.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 120
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+CTRL_1.3-DI_01

/120.3

		DI0 1	E10.0	E10.1 2 DI1	/101.7	fuse 24V DC power supply unit
ON Feedback Circuit Breaker CTRL	/84.4	DI2 3	E10.2	E10.3 4 DI3	/103.1	FUSE 24V DC CONTROL VOLTAGE
Tripped Signal Circuit Breaker CTRL	/84.5	DI4 5	E10.4	E10.5 6 DI5	/127.7	LIGHTNING PROTECTION in Control Cabinet OPTIONAL
UPS BATTERY OK	/102.5	DI6 7	E10.6	E10.7 8 DI7	/102.6	BATTERY MODE
BATTERY CHARGING	/102.7	DI8 9	E11.0	E11.1 10 DI9	/126.1	RESET -126S1
FUSE FOR PUMP	/181.2	DI10 11	E11.2	E11.3 12 DI11	/182.2	FAN 1 HEAT EXCHANGER
FUSE FOR HEATER	/181.5	DI12 13	E11.4	E11.5 14 DI13		
Fuse Fans CON, IND Cabinets	/183.6	DI14 15	E11.6	E11.7 16 DI15	/185.9	supply light, fan, heater, power unit in cabinet
	/120.3	24VDC L+		M 0VDC	/120.3	

+CTRL_1.3-DI_02

/120.3

FAULT SIGNAL SAFETY RELAY	/195.4	DI0 1	E12.0	E12.1 2 DI1	/187.6	FUSES SUPPLY FOR CIRCUIT BREAKER 1+2
CB 1 ON GRID	/127.2	DI2 3	E12.2	E12.3 4 DI3	/127.3	CB 1 OFF GRID
CB 1 Tripped GRID	/127.1	DI4 5	E12.4	E12.5 6 DI5	/127.4	FUSE AND LIGHTNING PROTECTION
Smoke detector CON	/134.0	DI6 7	E12.6	E12.7 8 DI7	/129.0	SUBSYSTEM 2_1_DC + Contactor K1 is on
SUBSYSTEM 2_1_DC -Contactor K7 is on	/129.1	DI8 9	E13.0	E13.1 10 DI9	/129.2	SUBSYSTEM 2_2_DC + Contactor K2 is on
SUBSYSTEM 2_2_DC -Contactor K8 is on	/129.3	DI10 11	E13.2	E13.3 12 DI11	/129.4	SUBSYSTEM 2_3_DC + Contactor K3 is on
SUBSYSTEM 2_3_DC -Contactor K9 is on	/129.5	DI12 13	E13.4	E13.5 14 DI13	/129.6	SUBSYSTEM 2_3_DC + SPARE
SUBSYSTEM 2_DC -SPARE	/129.7	DI14 15	E13.6	E13.7 16 DI15	/129.8	SUBSYSTEM 2_1_DC FUSE OK
		24VDC L+		M 0VDC		

+CTRL_1.3-DI_03

/120.3

SUBSYSTEM 2_2_DC FUSE OK	/129.9	DI0 1	E14.0	E14.1 2 DI1	/130.0	SUBSYSTEM 3_1_DC + Contactor K1 is on
SUBSYSTEM 3_1_DC -Contactor K7 is on	/130.1	DI2 3	E14.2	E14.3 4 DI3	/130.2	SUBSYSTEM 3_2_DC + Contactor K2 is on
SUBSYSTEM 3_2_DC -Contactor K8 is on	/130.3	DI4 5	E14.4	E14.5 6 DI5	/130.4	SUBSYSTEM 3_3_DC + Contactor K3 is on
SUBSYSTEM 3_3_DC -Contactor K9 is on	/130.5	DI6 7	E14.6	E14.7 8 DI7	/130.6	SUBSYSTEM 3_DC + SPARE
SUBSYSTEM 3_DC -SPARE	/130.7	DI8 9	E15.0	E15.1 10 DI9	/130.8	SUBSYSTEM 2_DC FUSE OK
SUBSYSTEM 3_1_DC FUSE OK	/130.9	DI10 11	E15.2	E15.3 12 DI11	/131.0	SUBSYSTEM 4_1_DC + Contactor K1 is on
SUBSYSTEM 4_1_DC -Contactor K7 is on	/131.1	DI12 13	E15.4	E15.5 14 DI13	/131.2	SUBSYSTEM 4_2_DC + Contactor K2 is on
SUBSYSTEM 4_2_DC -Contactor K8 is on	/131.3	DI14 15	E15.6	E15.7 16 DI15	/131.4	SUBSYSTEM 4_3_DC + Contactor K3 is on
		24VDC L+		M 0VDC		

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+CTRL_1.3-DI_04

/120.4

SPARE	/133.1	DI0 1	E16.0	E16.1 2 DI1	/133.2	SPARE
SPARE	/133.3	DI2 3	E16.2	E16.3 4 DI3	/133.4	TRIP
Earthing switch in On Transformer 620V side	/133.9	DI4 5	E16.4	E16.5 6 DI5		
		DI6 7	E16.6	E16.7 8 DI7		
		DI8 9	E17.0	E17.1 10 DI9		
Fuse 230V AC for Container Air Conditioning	/133.6	DI10 11	E17.2	E17.3 12 DI11	/128.1	CB 2 Tripped ISLAND GRID
CB 2 ON ISLAND GRID	/128.2	DI12 13	E17.4	E17.5 14 DI13	/128.3	CB 2 OFF ISLAND GRID
FUSE AND LIGHTNING PROTECTION 2	/128.4	DI14 15	E17.6	E17.7 16 DI15	/182.5	FAN 2 HEAT EXCHANGER (OPTIONAL)
		24VDC L+		M 0VDC		

+CTRL_1.3-DI_05

/120.4

SUBSYSTEM 4_3_DC -Contactor K9 is on	/131.5	DI0 1	E18.0	E18.1 2 DI1	/131.6	SUBSYSTEM 4_DC + SPARE
SUBSYSTEM 4_DC -SPARE	/131.7	DI2 3	E18.2	E18.3 4 DI3	/131.8	SUBSYSTEM 3_2_DC FUSE OK
SUBSYSTEM 3_3_DC FUSE OK	/131.9	DI4 5	E18.4	E18.5 6 DI5	/132.0	
	/132.1	DI6 7	E18.6	E18.7 8 DI7	/132.2	
	/132.3	DI8 9	E19.0	E19.1 10 DI9	/132.4	
	/132.5	DI10 11	E19.2	E19.3 12 DI11	/132.6	
SUBSYSTEM 4_1_DC FUSE OK	/132.7	DI12 13	E19.4	E19.5 14 DI13	/132.8	SUBSYSTEM 4_2_DC FUSE OK
SUBSYSTEM 4_3_DC FUSE OK	/132.9	DI14 15	E19.6	E19.7 16 DI15		
		24VDC L+		M 0VDC		

+CTRL_1.3-DI_06

/120.4

Shut-down to BESS	/136.6	DI0 1	E20.0	E20.1 2 DI1		
		DI2 3	E20.2	E20.3 4 DI3		
		DI4 5	E20.4	E20.5 6 DI5		
		DI6 7	E20.6	E20.7 8 DI7		
incoming CB is open	/136.8	DI8 9	E21.0	E21.1 10 DI9	/136.9	cmd island mode
		DI10 11	E21.2	E21.3 12 DI11		
		DI12 13	E21.4	E21.5 14 DI13		
		DI14 15	E21.6	E21.7 16 DI15		
		24VDC L+		M 0VDC		

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Editor	Freqcon_JD			Statron		ET200SP DIGITAL INPUTS DI_04 + DI_05	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	14.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 122
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+CTRL_1.3-DO_01

/120.5

CON Fans 1-5 in door	/135.1	DQ0 1	A10.0	A10.1 2 DQ1	/135.2	FAN 1 Control cabinet
CIR Fans 1-3 in door	/135.3	DQ2 3	A10.2	A10.3 4 DQ3	/135.4	SPARE 230V
CB2 ON ISLAND GRID OPTIONAL	/137.3	DQ4 5	A10.4	A10.5 6 DQ5	/137.4	CB 2 OFF ISLAND GRID OPTIONAL
Precharging DC-Link Capacitors	/171.5	DQ6 7	A10.6	A10.7 8 DQ7	/173.6	Discharge CON
CABINET CONTROL VOLTAGE RESET	/103.1	DQ8 9	A11.0	A11.1 10 DQ9	/137.1	CB1 ON GRID
CB 1 OFF GRID	/137.2	DQ10 11	A11.2	A11.3 12 DQ11	/189.1	GRID FAULT
FAULT 140H1	/140.1	DQ12 13	A11.4	A11.5 14 DQ13	/140.2	PREHEATING 140H2
READY FOR OPERATION 140H3	/140.3	DQ14 15	A11.6	A11.7 16 DQ15	/140.4	OPERATING 140H4
	/120.5	24VDC L+		M 0VDC	/120.5	

+CTRL_1.3-DO_02

/120.5

SUBSYSTEM 2_1 CONTACTOR DC+ ON	/150.1	DQ0 1	A12.0	A12.1 2 DQ1	/150.3	SUBSYSTEM 2_1 CONTACTOR DC-ON
SUBSYSTEM 2_2 CONTACTOR DC+ ON	/151.0	DQ2 3	A12.2	A12.3 4 DQ3	/151.2	SUBSYSTEM 2_2 CONTACTOR DC-ON
SUBSYSTEM 2_3 CONTACTOR DC+ ON	/151.3	DQ4 5	A12.4	A12.5 6 DQ5	/151.5	SUBSYSTEM 2_3 CONTACTOR DC-ON
		DQ6 7	A12.6	A12.7 8 DQ7	/135.5	SPARE
		DQ8 9	A13.0	A13.1 10 DQ9		
		DQ10 11	A13.2	A13.3 12 DQ11	/139.4	Fan 2 Heat exchanger optional
Heater On converter coolingsystem	/139.1	DQ12 13	A13.4	A13.5 14 DQ13	/139.2	Pump converter coolingsystem
Fan 1 Heat exchanger	/139.3	DQ14 15	A13.6	A13.7 16 DQ15	/134.8	Reset the smoke detectors
		24VDC L+		M 0VDC		

+CTRL_1.3-DO_03

/120.5

SUBSYSTEM 3_1 CONTACTOR DC+ ON	/350.1	DQ0 1	A14.0	A14.1 2 DQ1	/350.3	SUBSYSTEM 3_1 CONTACTOR DC-ON
		DQ2 3	A14.2	A14.3 4 DQ3		
SUBSYSTEM 3_3 CONTACTOR DC+ ON	/351.4	DQ4 5	A14.4	A14.5 6 DQ5	/351.5	SUBSYSTEM 3_3 CONTACTOR DC-ON
SUBSYSTEM 4_1 CONTACTOR DC+ ON	/352.0	DQ6 7	A14.6	A14.7 8 DQ7	/352.2	SUBSYSTEM 4_1 CONTACTOR DC-ON
SUBSYSTEM 4_2 CONTACTOR DC+ ON	/353.0	DQ8 9	A15.0	A15.1 10 DQ9	/353.2	SUBSYSTEM 4_2 CONTACTOR DC-ON
SUBSYSTEM 4_3 CONTACTOR DC+ ON	/353.3	DQ10 11	A15.2	A15.3 12 DQ11	/353.5	SUBSYSTEM 4_3 CONTACTOR DC-ON
		DQ12 13	A15.4	A15.5 14 DQ13		
		DQ14 15	A15.6	A15.7 16 DQ15		
		24VDC L+		M 0VDC		

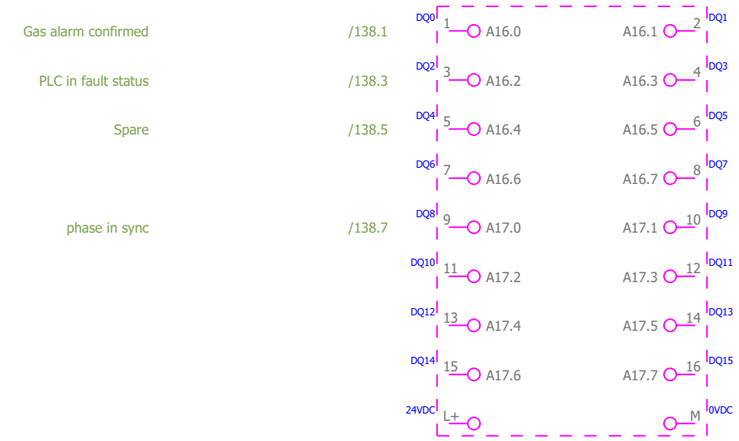
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Editor	Freqcon_JD			Statron	FREQCON	ET200SP DIGITAL OUTPUTS DO_01 - DO_03	20240809_V0.7	= UNIT_01 Converter Container 1
Date	14.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 123
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+CTRL_1.3-DO_04

/120.6



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Editor	Freqcon_JD			Statron	FREQCON	ET200SP DIGITAL OUTPUTS DO_01 - DO_03	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 123.a
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+CTRL_1.3-AI_01

/120.6

INDUCTOR GRID PHASE L1 TEMPERATURE 1_1	/145.1	M0+	1	PIW150	PIW152	2	M1+	/145.3	INDUCTOR GRID PHASE L2 TEMPERATURE 1_2
INDUCTOR GRID PHASE L3 TEMPERATURE 1_3	/145.5	M2+	3	PIW154	PIW156	4	M3+	/145.7	INDUCTOR DC SUB 2_1 TEMPERATURE 2_1
INDUCTOR DC SUB 2_2 TEMPERATURE 2_2	/146.1	M4+	5	PIW158	PIW160	6	M5+	/146.3	INDUCTOR DC SUB 2_3 TEMPERATURE 2_3
INDUCTOR DC SUB 3_1 TEMPERATURE 3_1	/146.5	M6+	7	PIW162	PIW164	8	M7+	/146.7	INDUCTOR DC SUB 3_2 TEMPERATURE 3_2
INDUCTOR GRID PHASE L1 TEMPERATURE 1_1	/145.1	M0-	9	PIW150	PIW152	10	M1-	/145.3	INDUCTOR GRID PHASE L2 TEMPERATURE 1_2
INDUCTOR GRID PHASE L3 TEMPERATURE 1_3	/145.5	M2-	11	PIW154	PIW156	12	M3-	/145.7	INDUCTOR DC SUB 2_1 TEMPERATURE 2_1
INDUCTOR DC SUB 2_2 TEMPERATURE 2_2	/146.1	M4-	13	PIW158	PIW160	14	M5-	/146.3	INDUCTOR DC SUB 2_3 TEMPERATURE 2_3
INDUCTOR DC SUB 3_1 TEMPERATURE 3_1	/146.5	M6-	15	PIW162	PIW164	16	M7-	/146.7	INDUCTOR DC SUB 3_2 TEMPERATURE 3_2
	/120.6	24VDC	L+		M	0VDC		/120.6	

+CTRL_1.3-AI_02

/120.6

INDUCTOR DC SUB 3_3 TEMPERATURE 3_3	/147.1	M0+	1	PIW166	PIW168	2	M1+	/147.3	INDUCTOR DC SUB 4_1 TEMPERATURE 4_1
CONTROL CABINET TEMPERATURE	/147.5	M2+	3	PIW170	PIW172	4	M3+	/147.7	CONVERTER CABINET TEMPERATURE
COOLING WATER TEMPERATURE	/148.1	M4+	5	PIW174	PIW176	6	M5+	/148.3	INDUCTOR DC SUB 4_2 TEMPERATURE 4_2
CIR CABINET TEMPERATURE	/148.5	M6+	7	PIW178	PIW180	8	M7+	/148.7	INDUCTOR DC SUB 4_3 TEMPERATURE 4_3
INDUCTOR DC SUB 3_3 TEMPERATURE 3_3	/147.1	M0-	9	PIW166	PIW168	10	M1-	/147.3	INDUCTOR DC SUB 4_1 TEMPERATURE 4_1
CONTROL CABINET TEMPERATURE	/147.5	M2-	11	PIW170	PIW172	12	M3-	/147.7	CONVERTER CABINET TEMPERATURE
COOLING WATER TEMPERATURE	/148.1	M4-	13	PIW174	PIW176	14	M5-	/148.3	INDUCTOR DC SUB 4_2 TEMPERATURE 4_2
CIR CABINET TEMPERATURE	/148.5	M6-	15	PIW178	PIW180	16	M7-	/148.7	INDUCTOR DC SUB 4_3 TEMPERATURE 4_3
		24VDC	L+		M	0VDC			

+CTRL_1.3-AI_03

/120.7

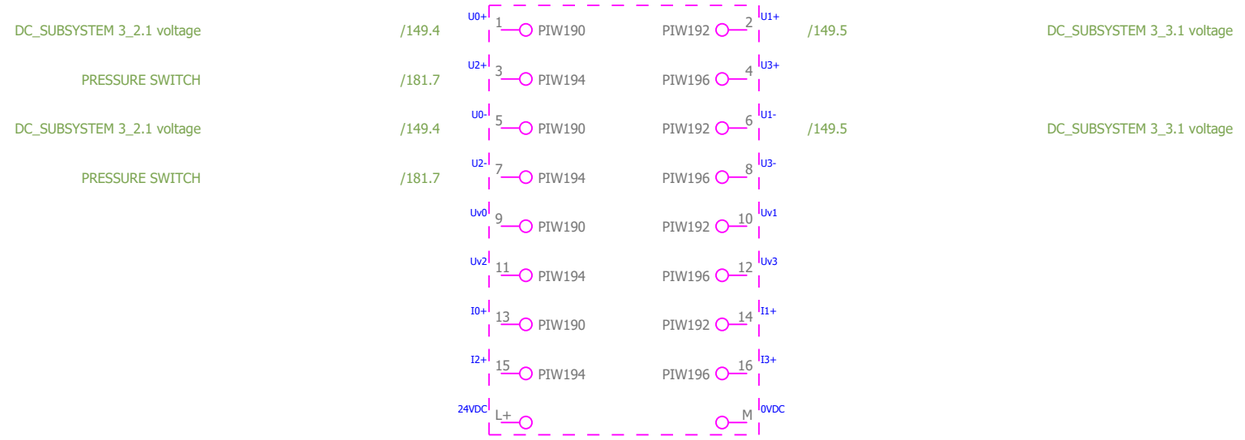
DC_SUBSYSTEM 2_1.1 voltage	/149.0	U0+	1	PIW182	PIW184	2	U1+	/149.1	DC_SUBSYSTEM 2_2.1 voltage
DC_SUBSYSTEM 2_3.1 voltage	/149.2	U2+	3	PIW186	PIW188	4	U3+	/149.3	DC_SUBSYSTEM 3_1.1 voltage
DC_SUBSYSTEM 2_1.1 voltage	/149.0	U0-	5	PIW182	PIW184	6	U1-	/149.1	DC_SUBSYSTEM 2_2.1 voltage
DC_SUBSYSTEM 2_3.1 voltage	/149.2	U2-	7	PIW186	PIW188	8	U3-	/149.3	DC_SUBSYSTEM 3_1.1 voltage
		Uv0	9	PIW182	PIW184	10	Uv1		
		Uv2	11	PIW186	PIW188	12	Uv3		
		I0+	13	PIW182	PIW184	14	I1+		
		I2+	15	PIW186	PIW188	16	I3+		
		24VDC	L+		M	0VDC			

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+CTRL_1.3-AI_04

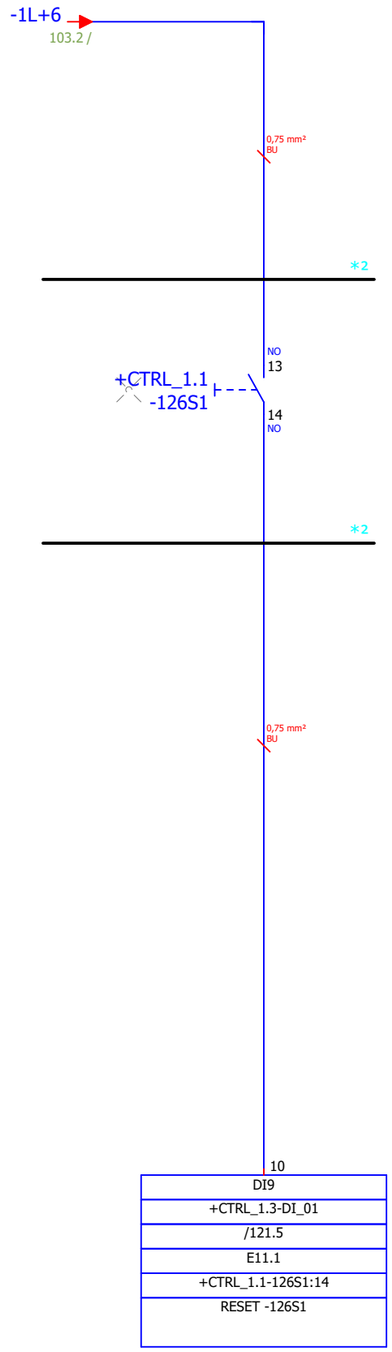
/120.7



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Editor	Freqcon_JD			Statron	FREQCON	ET200SP ANALOG INPUTS AI_04	20240809_V0.7	= UNIT_01 Converter Container 1	
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RESET
-126S1

*2
The single conductor
must be placed
in the protective tube

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Editor	Freqcon_JD			Statron	FREQCON	INPUTS CONTROL ELEMENTS	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EFS	Circuit diagram	
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EC

3WL

++CONV

-CB1_TRIPPED / ++CONV/80.8

-CB1_ON_FB / ++CONV/80.7

-CB1_OFF_FB / ++CONV/80.7

-1F2 / ++CONV/78.9

-4L+5.4 / ++CONV/238a.2

-80W1
OZ-500
8x0,75 mm²

-238W7
OZ-500
2x0,75 mm²

-24V_Signal / 189.5

-4L+5.3 / 134.0

84F1_OK / 84.9

+CTRL_1.3
-X3

fB

bridge

0,75 mm² BU

-4L+5 / 103.8

-4L+5.1 / 128.5

DI14	DI2	DI3	DI5	DI5
+CTRL_1.3-DI_02	+CTRL_1.3-DI_02			+CTRL_1.3-DI_01
/121.4	/121.4	/121.5	/121.5	/121.5
E12.4	E12.2	E12.3	E12.5	E10.5
++CONV+CIR-80Q1:X7_13	++CONV+CIR-80Q1:X6_11	++CONV+CIR-80Q1:X6_9	++CONV+AC_DC-78F1:13	+CTRL_1.3-84F1:12
CB 1 Tripped GRID	CB 1 ON GRID	CB 1 OFF GRID	FUSE AND LIGHTNING PROTECTION	LIGHTNING PROTECTION in Control Cabinet OPTIONAL

Info:
true = not fail,
false = cb tripped
CB = Circuit Breaker

CB 1 Tripped GRID

CB 1 ON GRID

CB 1 OFF GRID

FUSE AND LIGHTNING PROTECTION

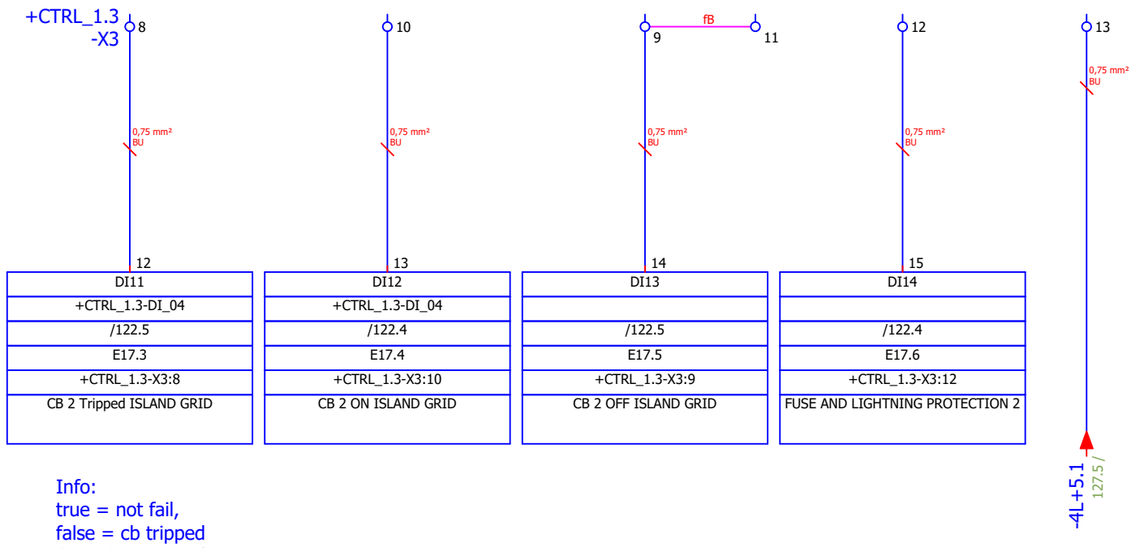
LIGHTNING PROTECTION in Control Cabinet OPTIONAL

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next page: 128

Editor	Freqcon_JD			Statron	FREQCON	DIGITAL INPUTS CB 1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 127
Date								+ total: 482

0	1	2	3	4	5	6	7	8	9



Info:
true = not fail,
false = cb tripped
CB = Circuit Breaker

CB 2 Tripped ISLAND GRID

CB 2 ON ISLAND GRID

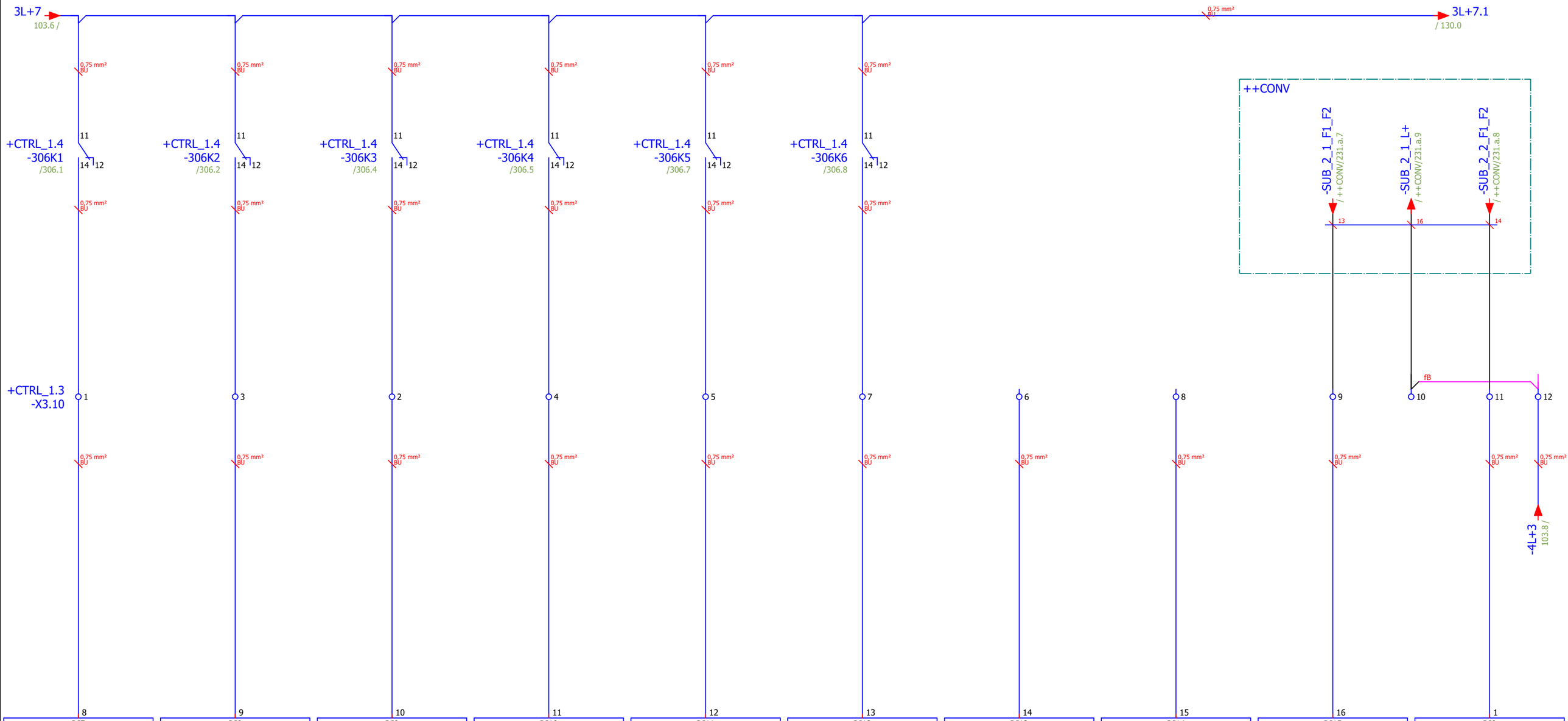
CB 2 OFF ISLAND GRID

FUSE AND LIGHTNING PROTECTION 2

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next page: 129

Editor	Freqcon_JD			Statron		DIGITAL INPUTS CB 2	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 128
Date								+		total: 482



8	9	10	11	12	13	14	15	16	1
DI7	DI8	DI9	DI10	DI11	DI12	DI13	DI14	DI15	DI0
+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_02	+CTRL_1.3-DI_03
/121.5	/121.4	/121.5	/121.4	/121.5	/121.4	/121.5	/121.4	/121.5	/121.4
E12.7	E13.0	E13.1	E13.2	E13.3	E13.4	E13.5	E13.6	E13.7	E14.0
+CTRL_1.4-306K1:14	+CTRL_1.4-306K2:14	+CTRL_1.4-306K3:14	+CTRL_1.4-306K4:14	+CTRL_1.4-306K5:14	+CTRL_1.4-306K6:14	+CTRL_1.3-X3.10:6	+CTRL_1.3-X3.10:8	++CONV+CIR-231U1-F1:2	++CONV+CIR-231U1-F5:2
SUBSYSTEM 2_1_DC + Contactor K1 is on	SUBSYSTEM 2_1_DC -Contactor K7 is on	SUBSYSTEM 2_2_DC + Contactor K2 is on	SUBSYSTEM 2_2_DC -Contactor K8 is on	SUBSYSTEM 2_3_DC + Contactor K3 is on	SUBSYSTEM 2_3_DC -Contactor K9 is on	SUBSYSTEM 2_3_DC + SPARE	SUBSYSTEM 2_DC -SPARE	SUBSYSTEM 2_1_DC FUSE OK	SUBSYSTEM 2_2_DC FUSE OK

Feedback of DC Contactors

SUBSYSTEM 2_1_DC + Contactor K1 is on

SUBSYSTEM 2_1_DC - Contactor K7 is on

SUBSYSTEM 2_2_DC + Contactor K2 is on

SUBSYSTEM 2_2_DC - Contactor K8 is on

SUBSYSTEM 2_3_DC + Contactor K3 is on

SUBSYSTEM 2_3_DC - Contactor K9 is on

SUBSYSTEM 2_3_DC + SPARE

SUBSYSTEM 2_DC - SPARE

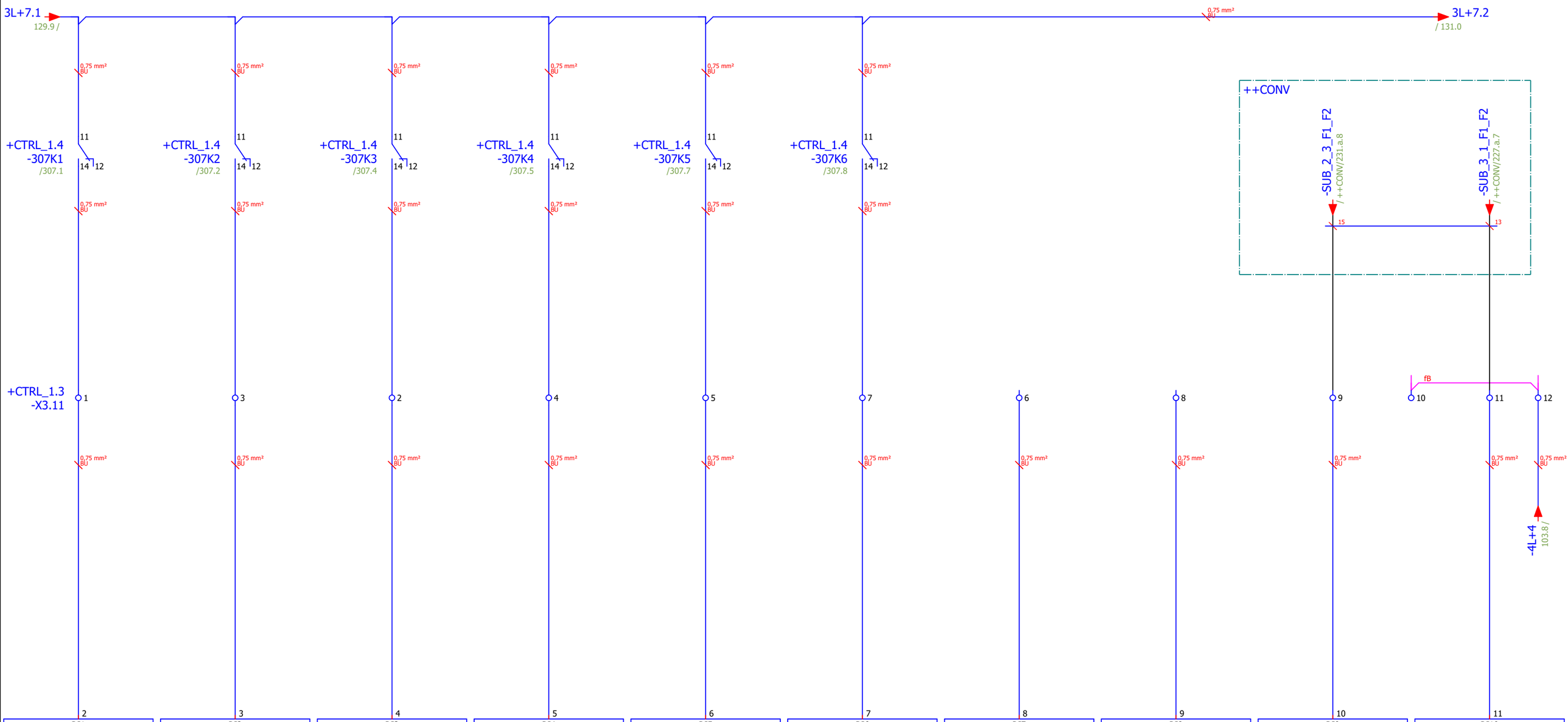
SUBSYSTEM 2_1_DC FUSE OK

SUBSYSTEM 2_2_DC FUSE OK

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next page: 130

Editor	Freqcon_JD			Statron	FREQCON	DIGITAL INPUTS SUBSYSTEM 2_1 / 2_2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 129
Date								+ total: 482



2	3	4	5	6	7	8	9	10	11
DI1	DI2	DI3	DI4	DI5	DI6	DI7	DI8	DI9	DI10
+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03
/121.5	/121.4	/121.5	/121.4	/121.5	/121.4	/121.5	/121.4	/121.5	/121.4
E14.1	E14.2	E14.3	E14.4	E14.5	E14.6	E14.7	E15.0	E15.1	E15.2
+CTRL_1.4-307K1:14	+CTRL_1.4-307K2:14	+CTRL_1.4-307K3:14	+CTRL_1.4-307K4:14	+CTRL_1.4-307K5:14	+CTRL_1.4-307K6:14	+CTRL_1.3-X3.11:6	+CTRL_1.3-X3.11:8	++CONV+CIR-231U1-F9:2	++CONV+CIR-227U1-F1:2
SUBSYSTEM 3_1_DC + Contactor K1 is on	SUBSYSTEM 3_1_DC -Contactor K7 is on	SUBSYSTEM 3_2_DC + Contactor K2 is on	SUBSYSTEM 3_2_DC -Contactor K8 is on	SUBSYSTEM 3_3_DC + Contactor K3 is on	SUBSYSTEM 3_3_DC -Contactor K9 is on	SUBSYSTEM 3_DC + SPARE	SUBSYSTEM 3_DC -SPARE	SUBSYSTEM 2_DC FUSE OK	SUBSYSTEM 3_1_DC FUSE OK

Feedback of DC Contactors

SUBSYSTEM 3_1_DC + Contactor K1 is on

SUBSYSTEM 3_1_DC - Contactor K7 is on

SUBSYSTEM 3_2_DC + Contactor K2 is on

SUBSYSTEM 3_2_DC - Contactor K8 is on

SUBSYSTEM 3_3_DC + Contactor K3 is on

SUBSYSTEM 3_3_DC - Contactor K9 is on

SUBSYSTEM 3_DC + SPARE

SUBSYSTEM 3_DC - SPARE

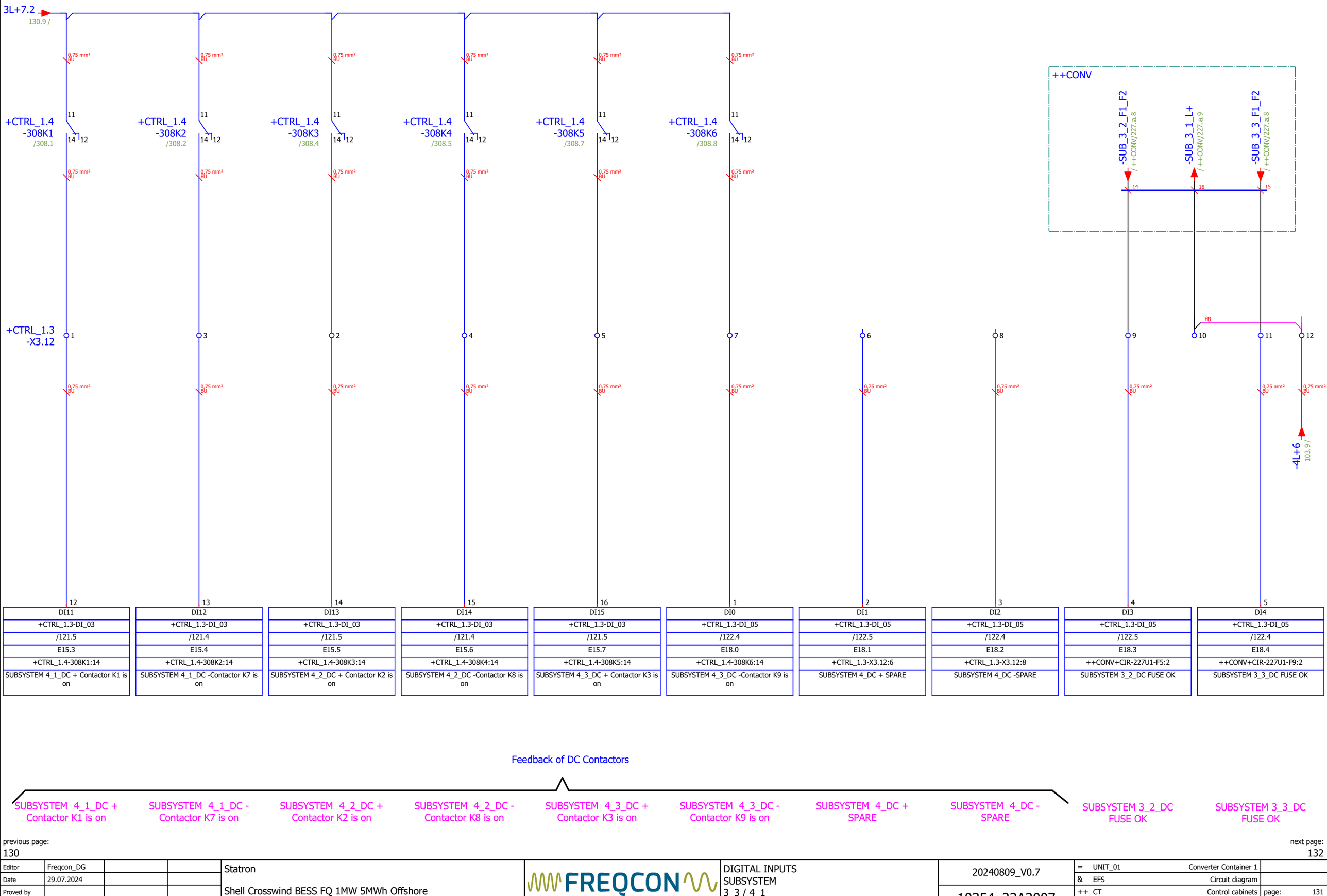
SUBSYSTEM 2_DC FUSE OK

SUBSYSTEM 3_1_DC FUSE OK

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next page: 131

Editor	Freqcon_JD			Statron	FREQCON	DIGITAL INPUTS SUBSYSTEM 2_3 / 3_1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 130
Date								+ total: 482



12	13	14	15	16	1	2	3	4	5
DI11	DI12	DI13	DI14	DI15	DI0	DI1	DI2	DI3	DI4
+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_03	+CTRL_1.3-DI_05	+CTRL_1.3-DI_05	+CTRL_1.3-DI_05	+CTRL_1.3-DI_05	+CTRL_1.3-DI_05
/121.5	/121.4	/121.5	/121.4	/121.5	/122.4	/122.5	/122.4	/122.5	/122.4
E15.3	E15.4	E15.5	E15.6	E15.7	E18.0	E18.1	E18.2	E18.3	E18.4
+CTRL_1.4-308K1:14	+CTRL_1.4-308K2:14	+CTRL_1.4-308K3:14	+CTRL_1.4-308K4:14	+CTRL_1.4-308K5:14	+CTRL_1.4-308K6:14	+CTRL_1.3-X3.12:6	+CTRL_1.3-X3.12:8	++CONV+CIR-227U1-F5:2	++CONV+CIR-227U1-F9:2
SUBSYSTEM 4_1_DC + Contactor K1 is on	SUBSYSTEM 4_1_DC -Contactor K7 is on	SUBSYSTEM 4_2_DC + Contactor K2 is on	SUBSYSTEM 4_2_DC -Contactor K8 is on	SUBSYSTEM 4_3_DC + Contactor K3 is on	SUBSYSTEM 4_3_DC -Contactor K9 is on	SUBSYSTEM 4_DC + SPARE	SUBSYSTEM 4_DC -SPARE	SUBSYSTEM 3_2_DC FUSE OK	SUBSYSTEM 3_3_DC FUSE OK

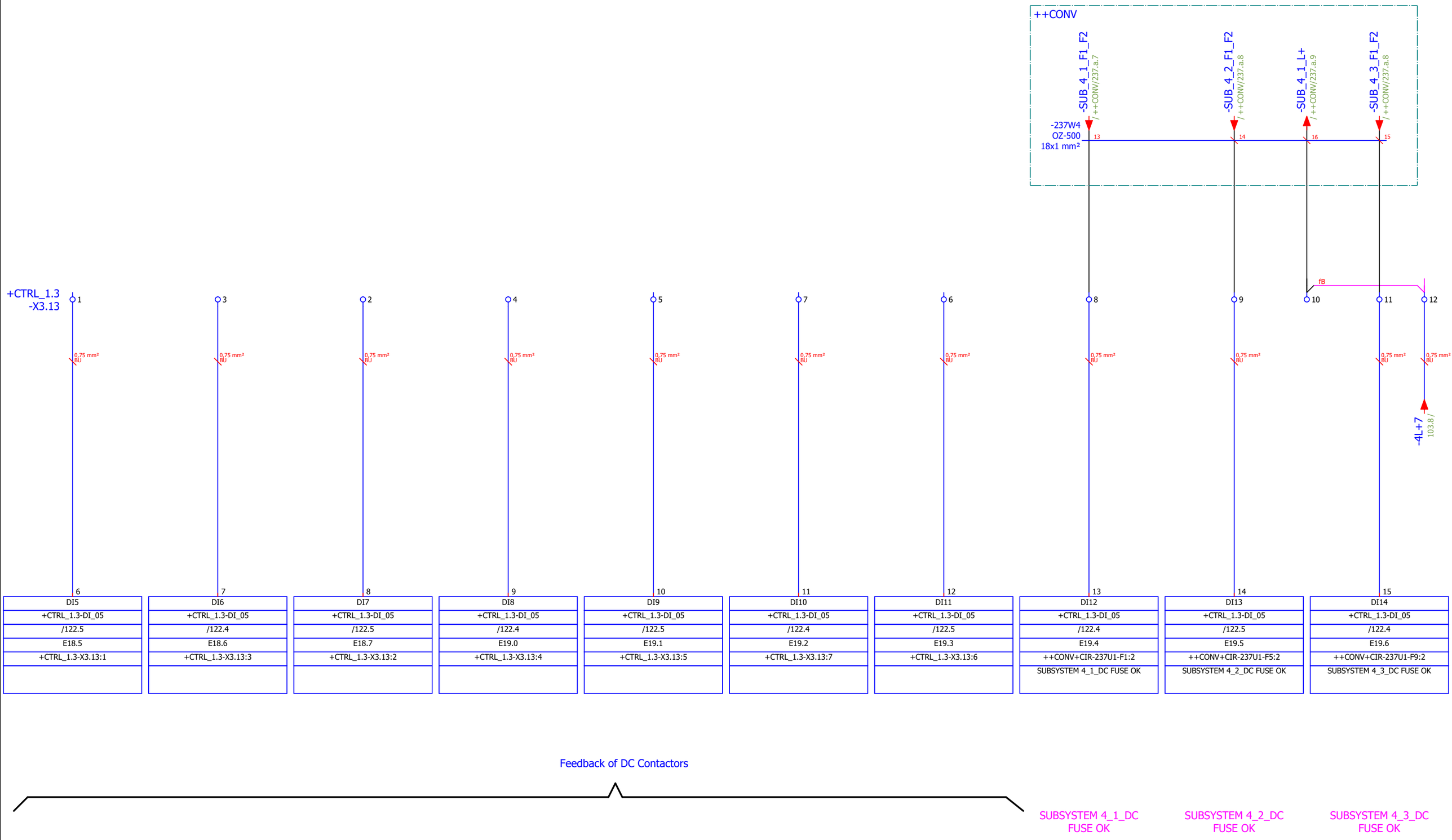
Feedback of DC Contactors

SUBSYSTEM 4_1_DC + Contactor K1 is on | SUBSYSTEM 4_1_DC - Contactor K7 is on | SUBSYSTEM 4_2_DC + Contactor K2 is on | SUBSYSTEM 4_2_DC - Contactor K8 is on | SUBSYSTEM 4_3_DC + Contactor K3 is on | SUBSYSTEM 4_3_DC - Contactor K9 is on | SUBSYSTEM 4_DC + SPARE | SUBSYSTEM 4_DC - SPARE | SUBSYSTEM 3_2_DC FUSE OK | SUBSYSTEM 3_3_DC FUSE OK

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Editor	Freqcon_DG			Statron	FREQCON	DIGITAL INPUTS SUBSYSTEM 3_3 / 4_1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	29.07.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 131
Date								+ total: 482



Feedback of DC Contactors

SUBSYSTEM 4_1_DC FUSE OK

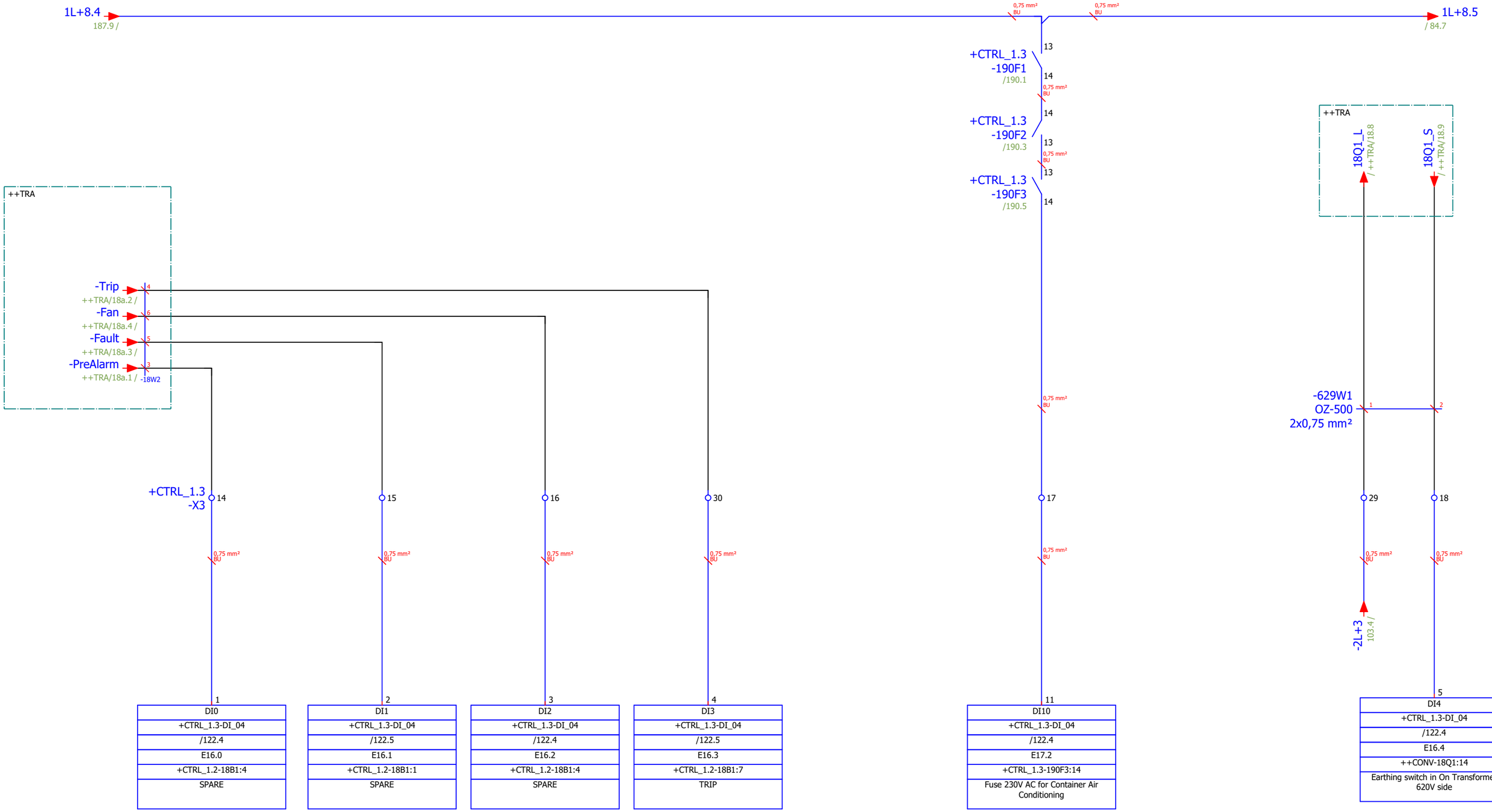
SUBSYSTEM 4_2_DC FUSE OK

SUBSYSTEM 4_3_DC FUSE OK

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Editor	Freqcon_DG			Statron	FREQCON	DIGITAL INPUTS SUBSYSTEM 4_2 / 4_3	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 132
Date								+	total: 482



SPARE

SPARE

SPARE

TRIP

Shut-down to BESS

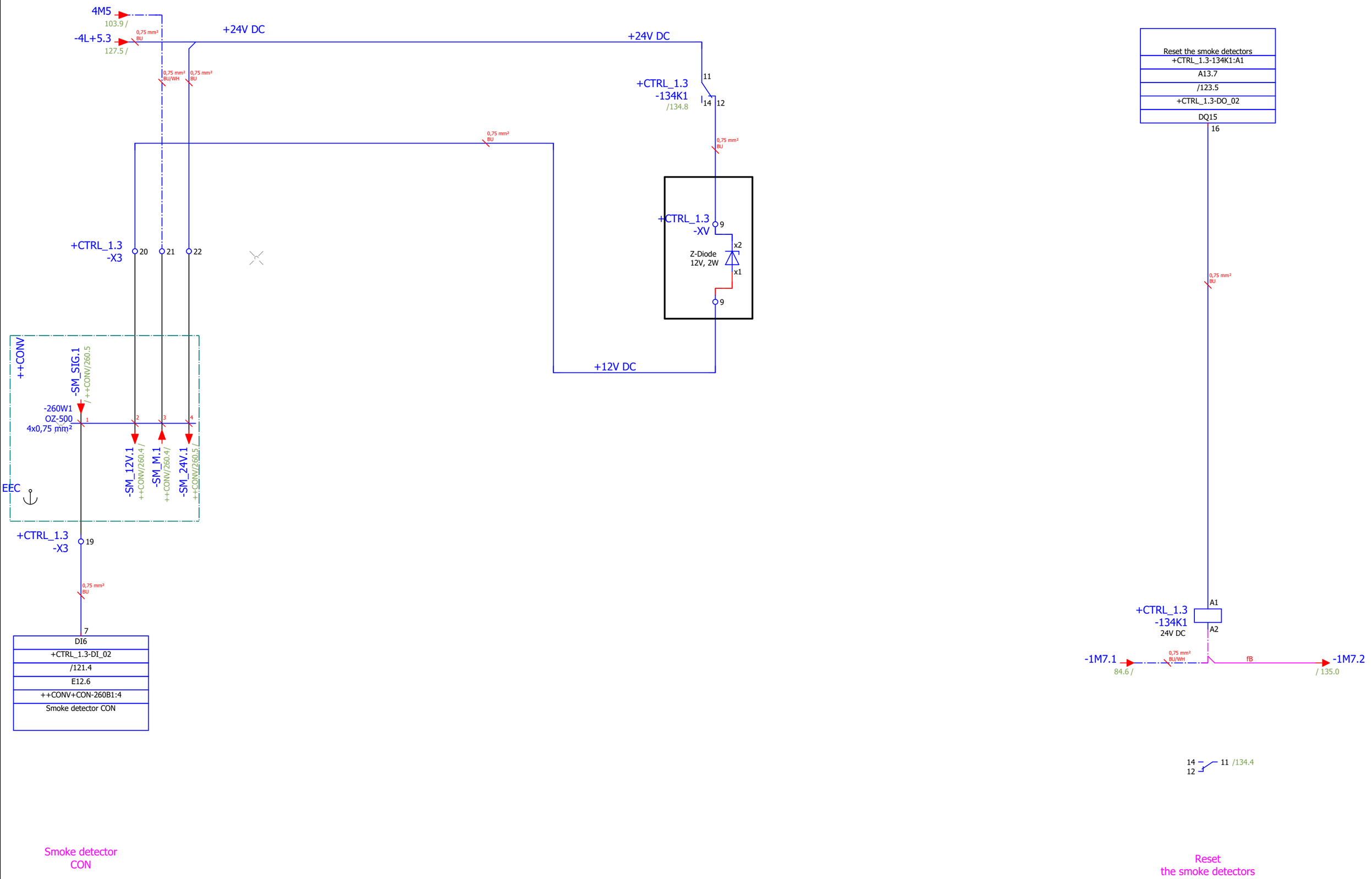
Fuse 230V AC for Container Air Conditioning

Earthing switch in On Transformer 620V side

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Editor	Freqcon_JD			Statron	FREQCON	DIGITAL INPUTS SPARE	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 133
Date								+	total: 482



Smoke detector CON

Reset the smoke detectors

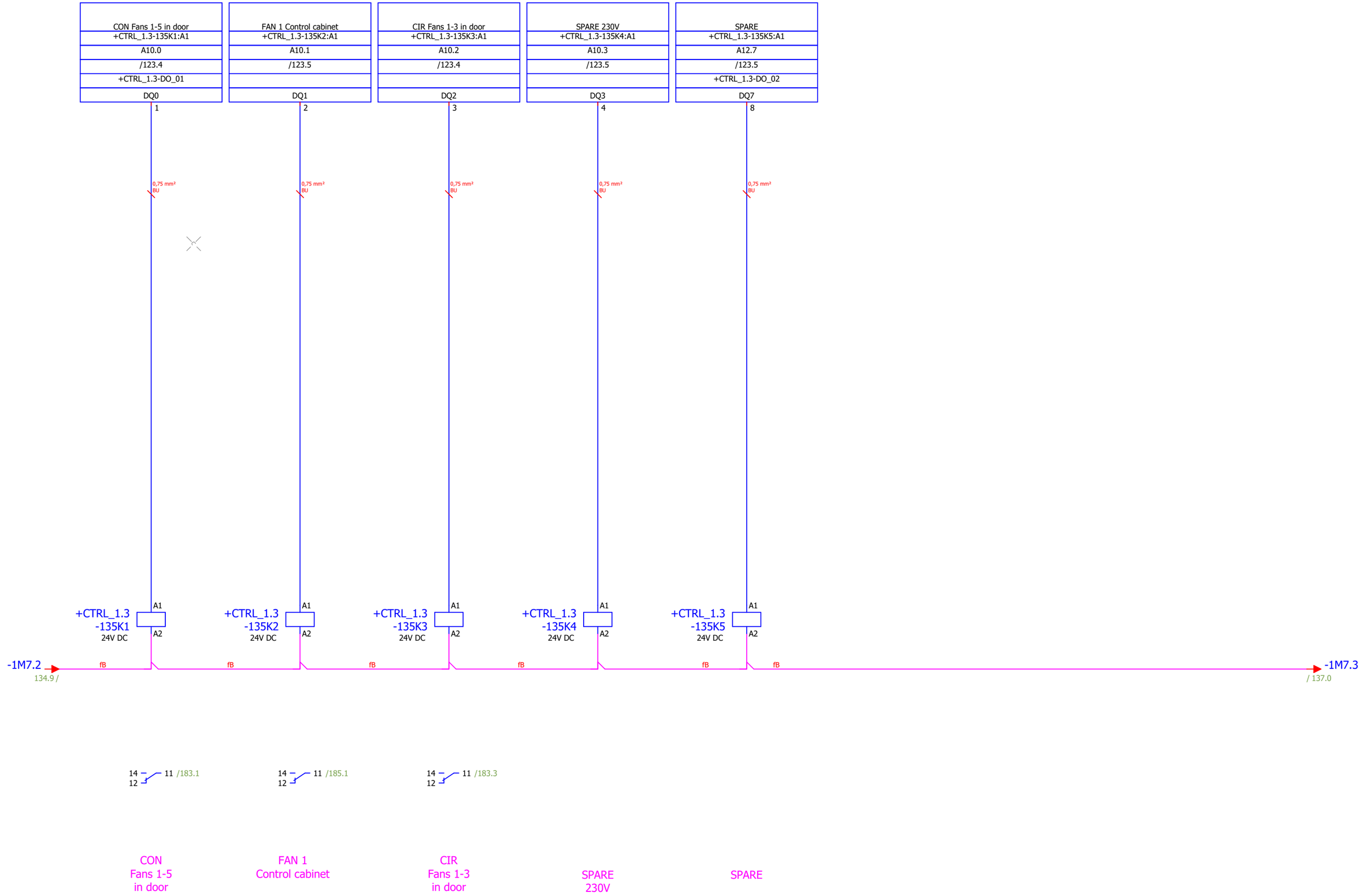
previous page: 133

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Editor	Freqcon_JD			Statron	FREQCON	DIGITAL INPUTS SMOKE DETECTORS	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets
Date								+	

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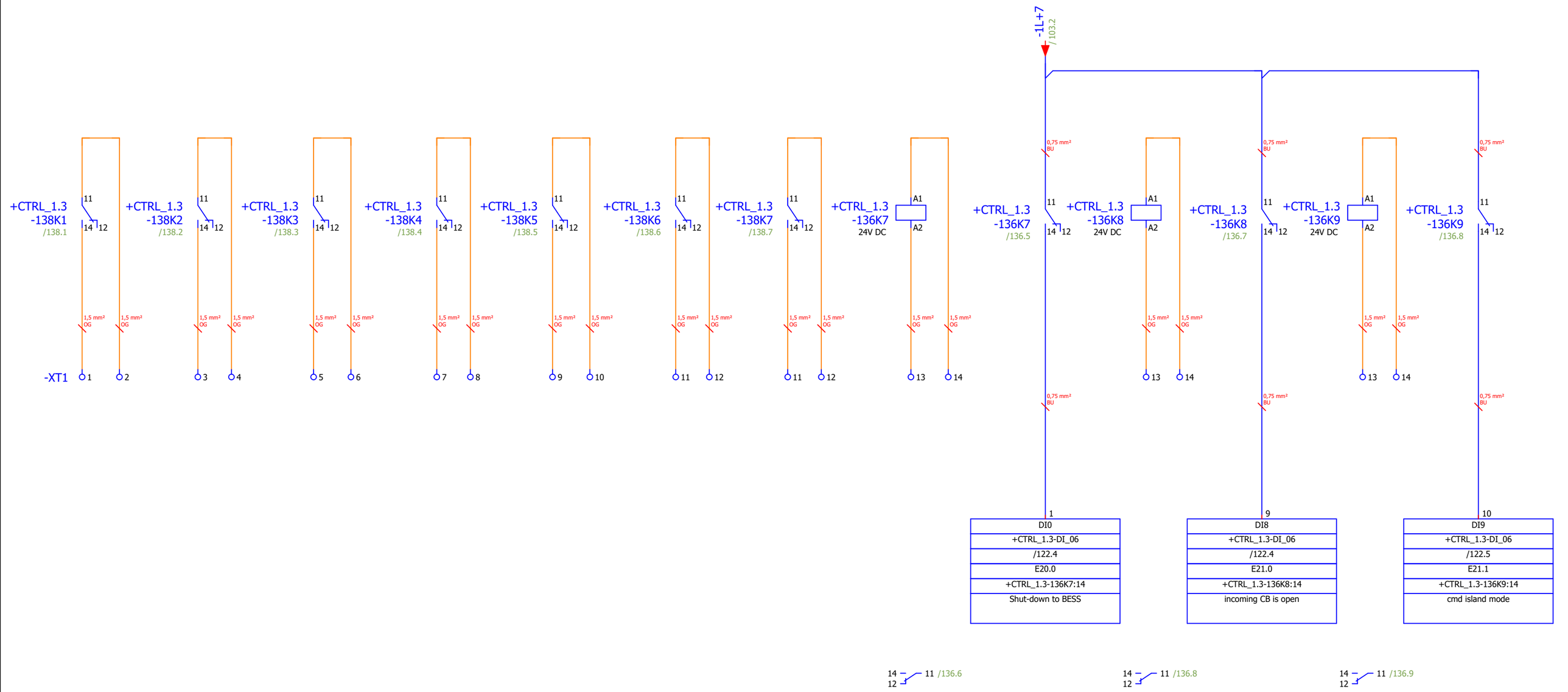
total: 482



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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS FAN	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	19.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 135
Date								+	total: 482

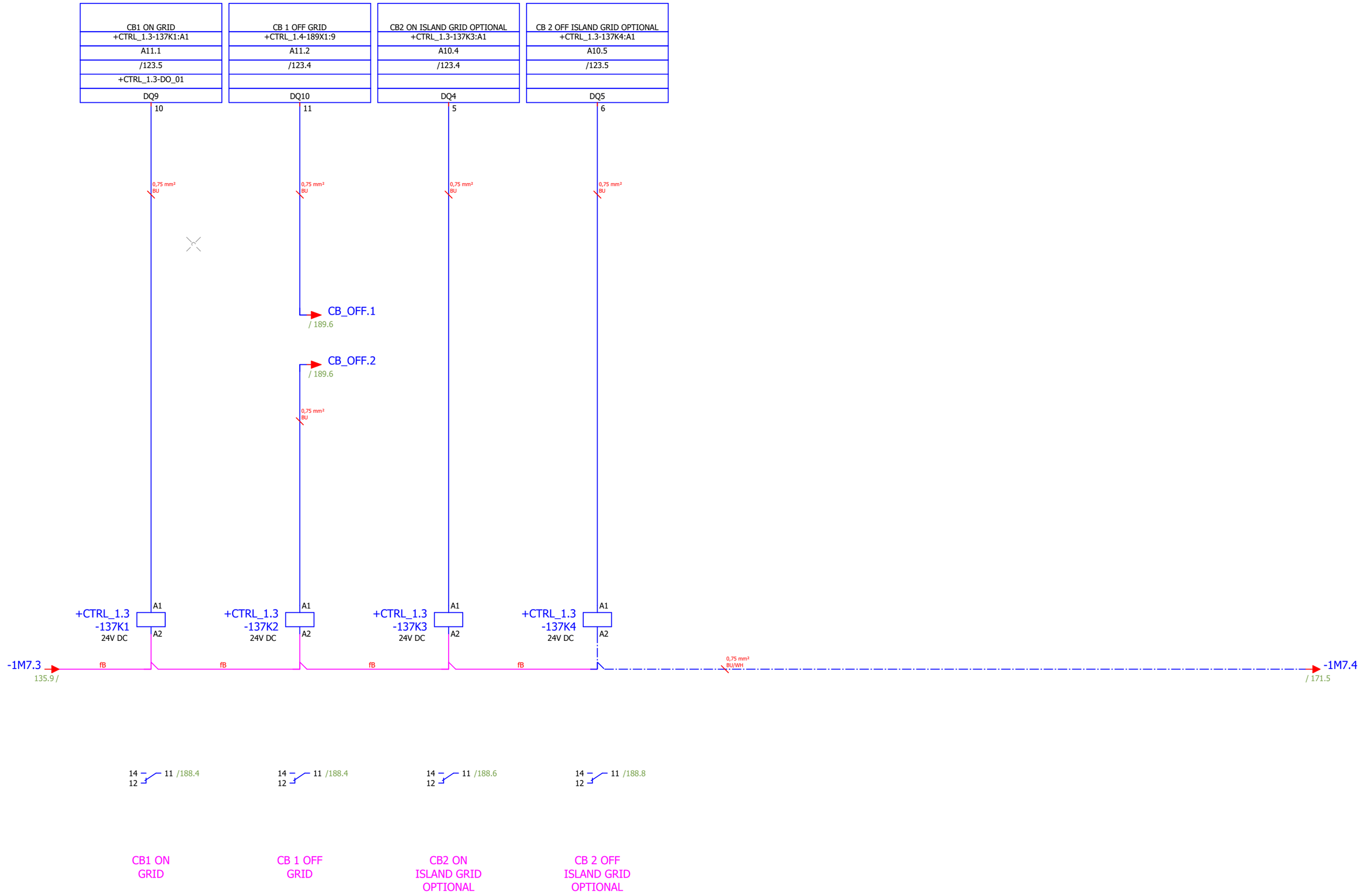


Gas confirmed FGS | Smoke confirmed FGS | PLC fault status SIS | Thermal runaway SIS | Spare | Spare | phase in sync | Shut-down to BESS | Shut-down to BESS | incoming CB is openincoming CB is open | cmd island mode | cmd island mode

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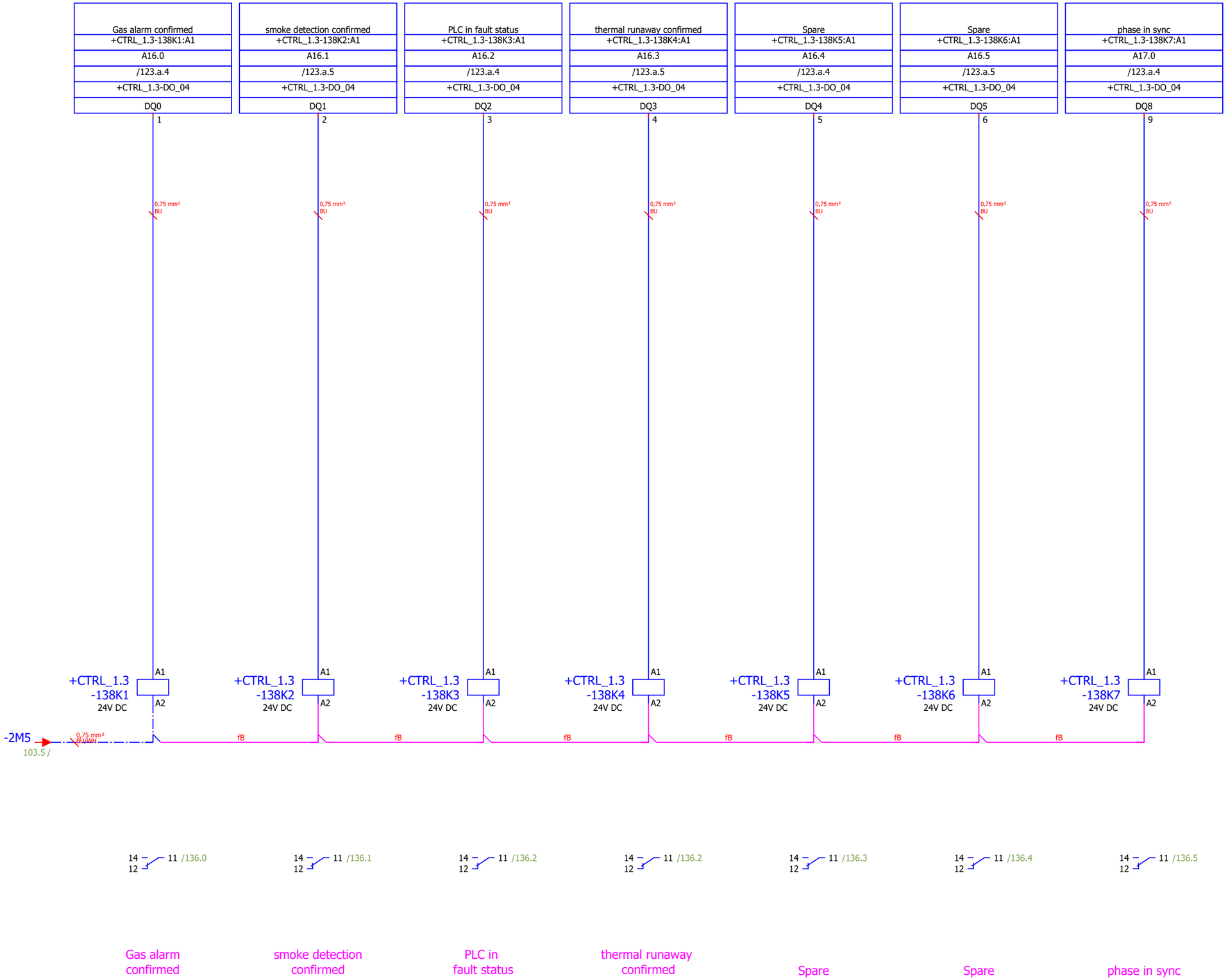
Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS COMMUNICATION	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 136
Date								+	total: 482



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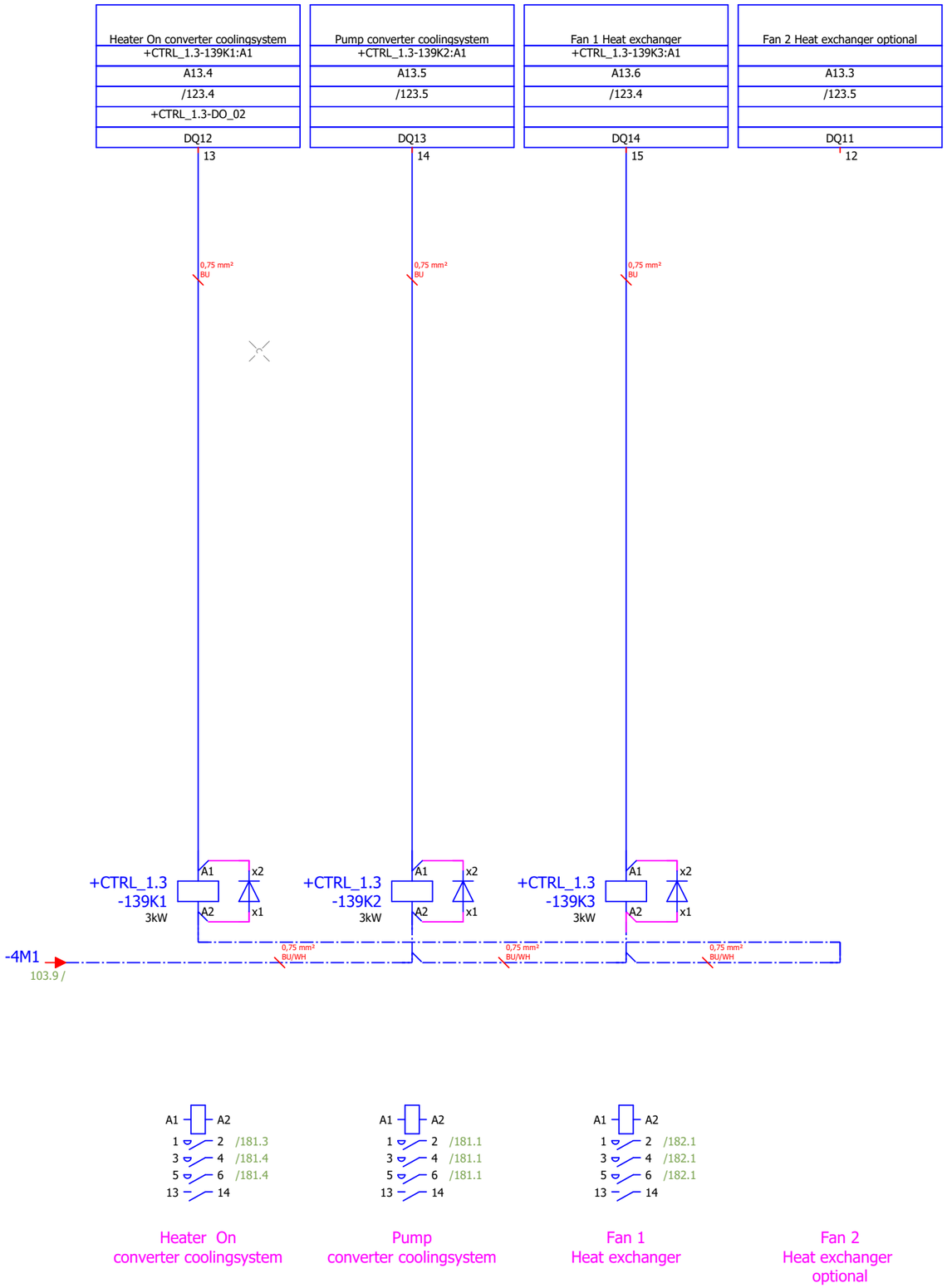
Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS CIRCUIT BREAKER	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 137
Date								+	total: 482



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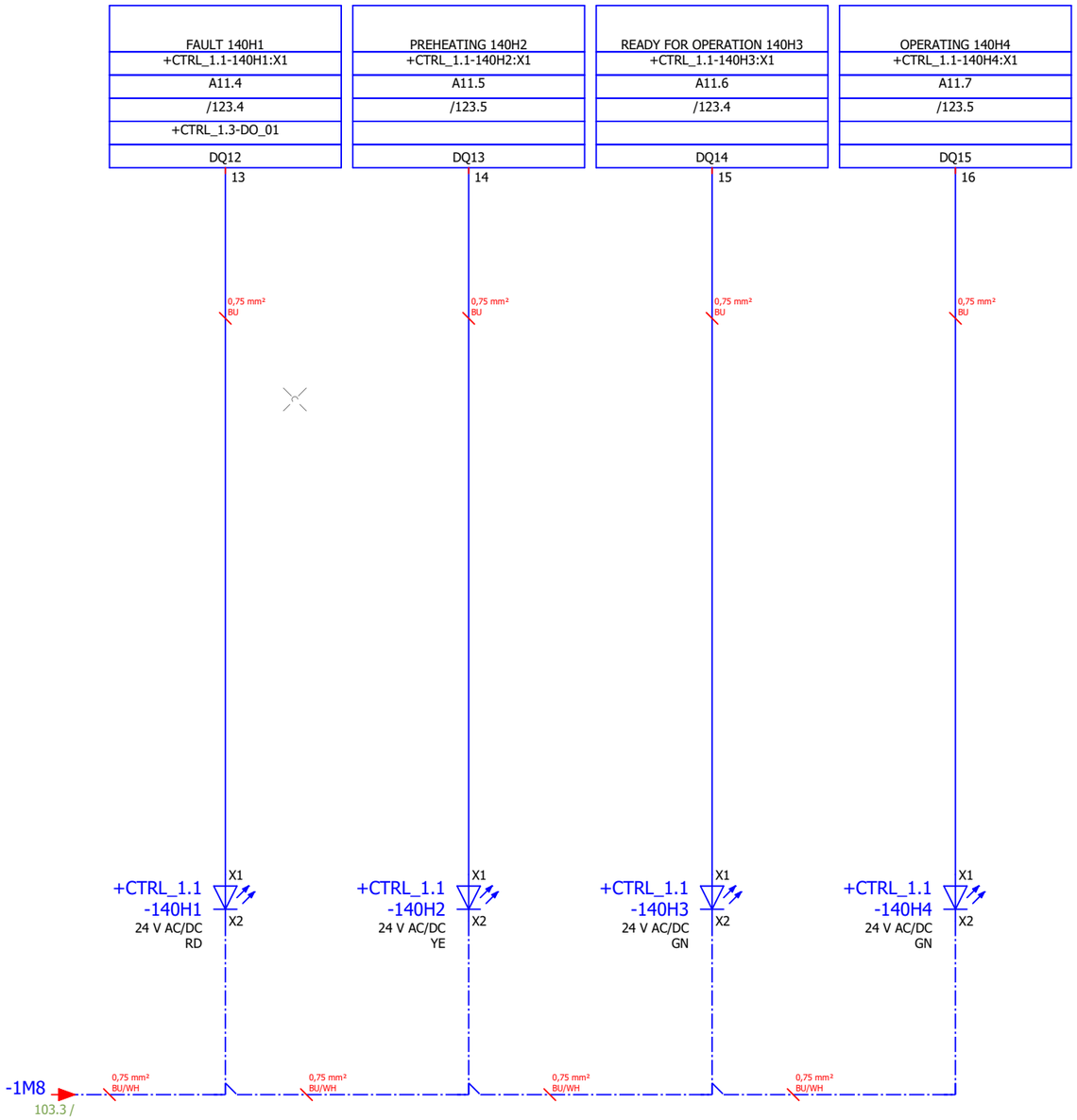
Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS CONTROL ELEMENTS	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	03.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 138
Date								+	total: 482



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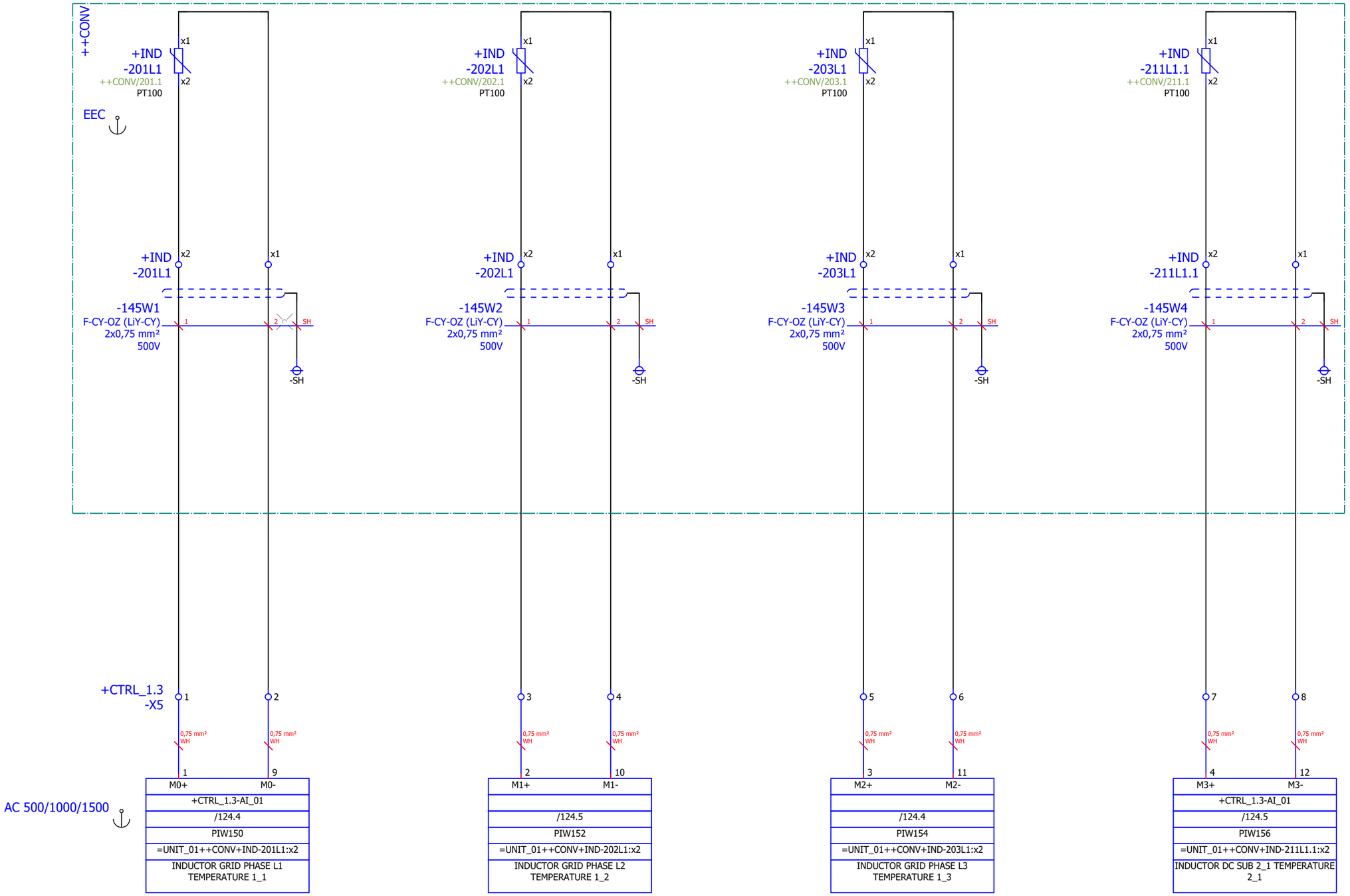
Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS COOLING	20240809_V0.7	= UNIT_01	Converter Container 1
Date	14.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 139
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS CONTROL ELEMENTS	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	14.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 140
Date								+		total: 482



INDUCTOR
GRID PHASE L1
TEMPERATURE 1_1

INDUCTOR
GRID PHASE L2
TEMPERATURE 1_2

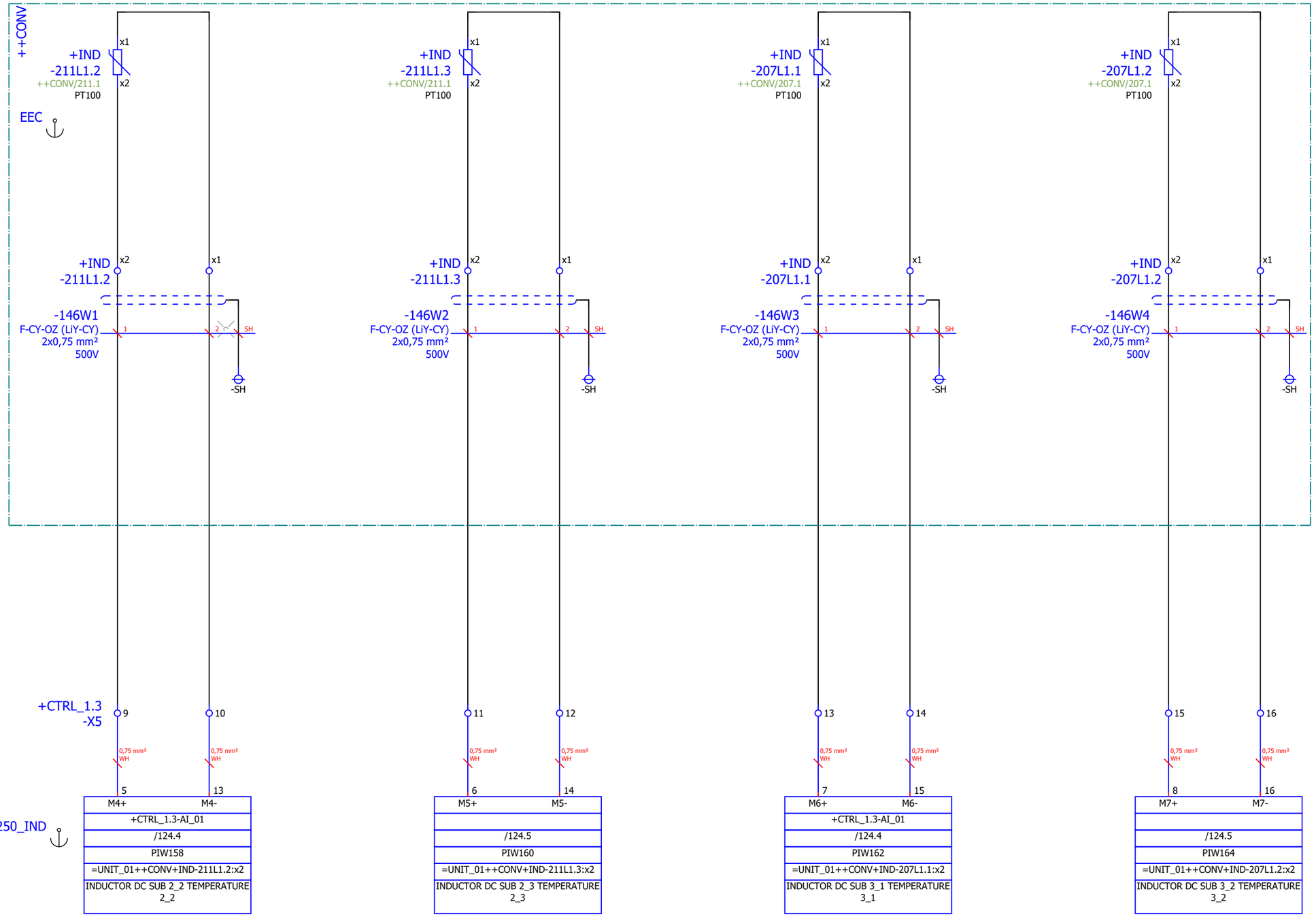
INDUCTOR
GRID PHASE L3
TEMPERATURE 1_3

INDUCTOR
DC SUB 2_1
TEMPERATURE 2_1

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Editor	Freqcon_JD			Statron	FREQCON	ANALOG INPUTS (TEMPERATURE SUBSYSTEM 1_1 -1_3)	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	14.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 145
Date								+		total: 482



INDUCTOR
DC SUB 2_2
TEMPERATURE 2_2

INDUCTOR
DC SUB 2_3
TEMPERATURE 2_3

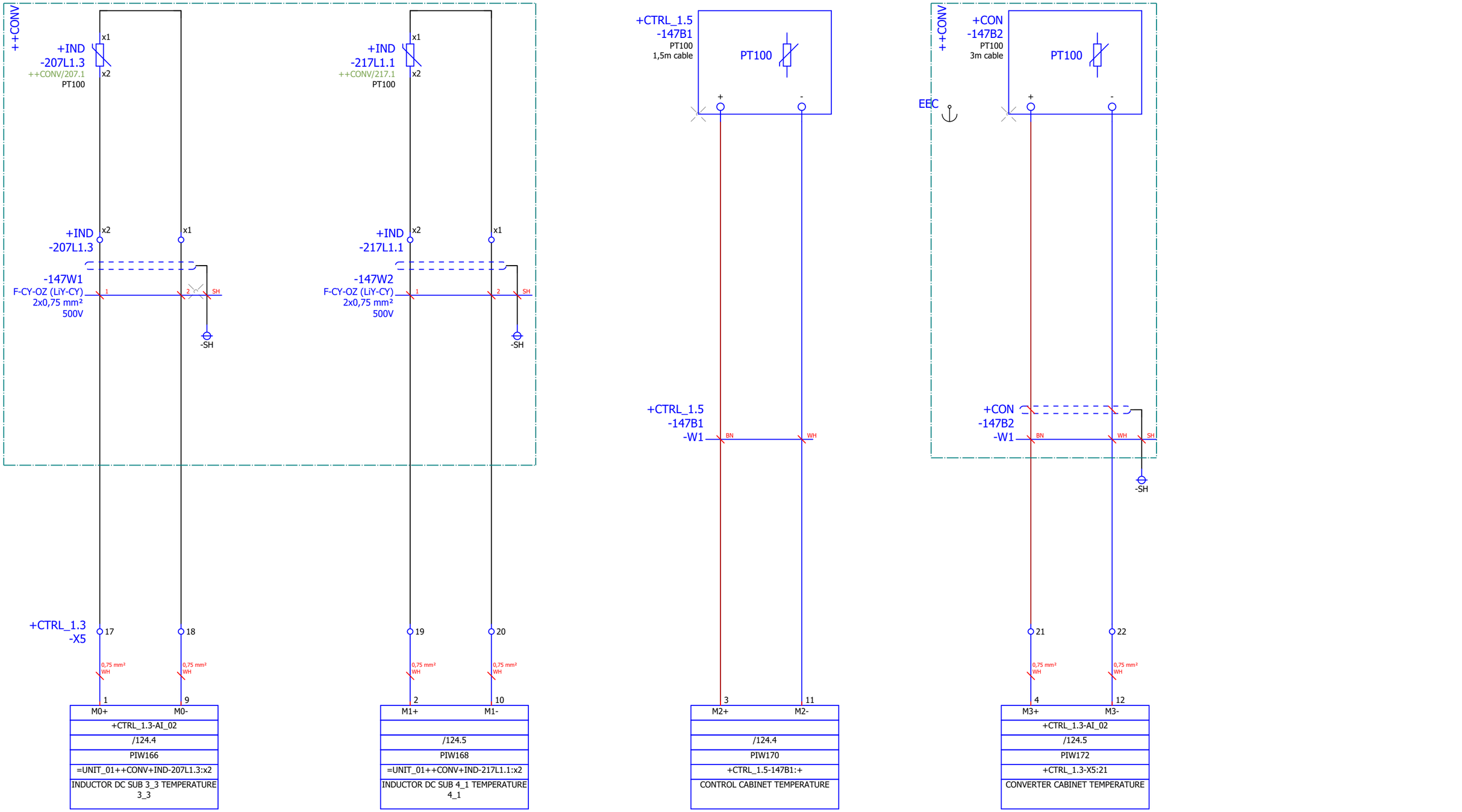
INDUCTOR
DC SUB 3_1
TEMPERATURE 3_1

INDUCTOR
DC SUB 3_2
TEMPERATURE 3_2

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Editor	Freqcon_JD			Statron	FREQCON	ANALOG INPUTS (TEMPERATURE SUBSYSTEM 1_4 -1_6)	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 146
Date								+		total: 482



INDUCTOR DC SUB 3_3 TEMPERATURE 3_3

INDUCTOR DC SUB 4_1 TEMPERATURE 4_1

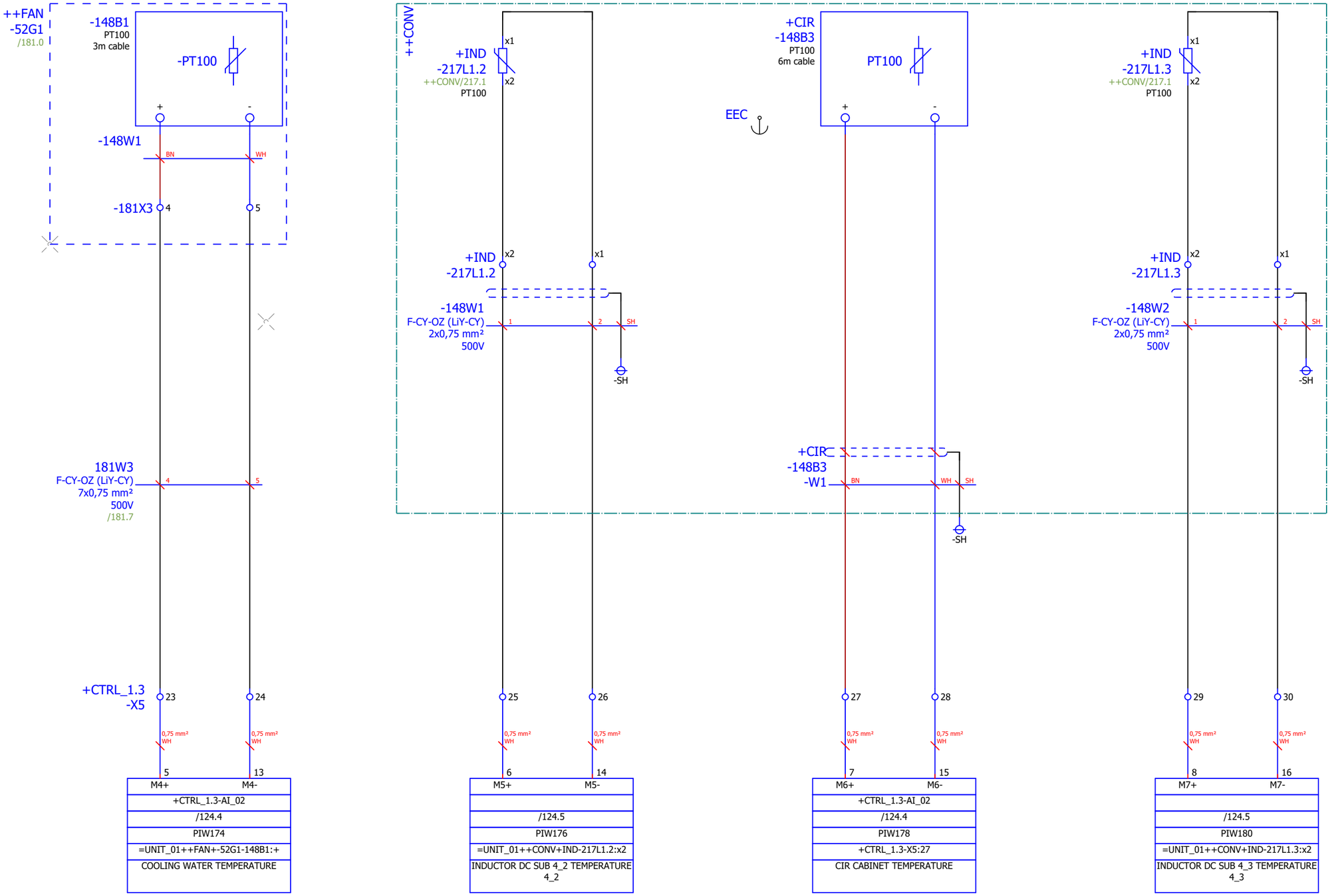
CONTROL CABINET TEMPERATURE

CONVERTER CABINET TEMPERATURE

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Editor	Freqcon_JD			Statron	FREQCON	ANALOG INPUTS CABINET TEMPERATURE	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 147
Date								+	total: 482



COOLING WATER TEMPERATURE

INDUCTOR DC SUB 4_2 TEMPERATURE 4_2

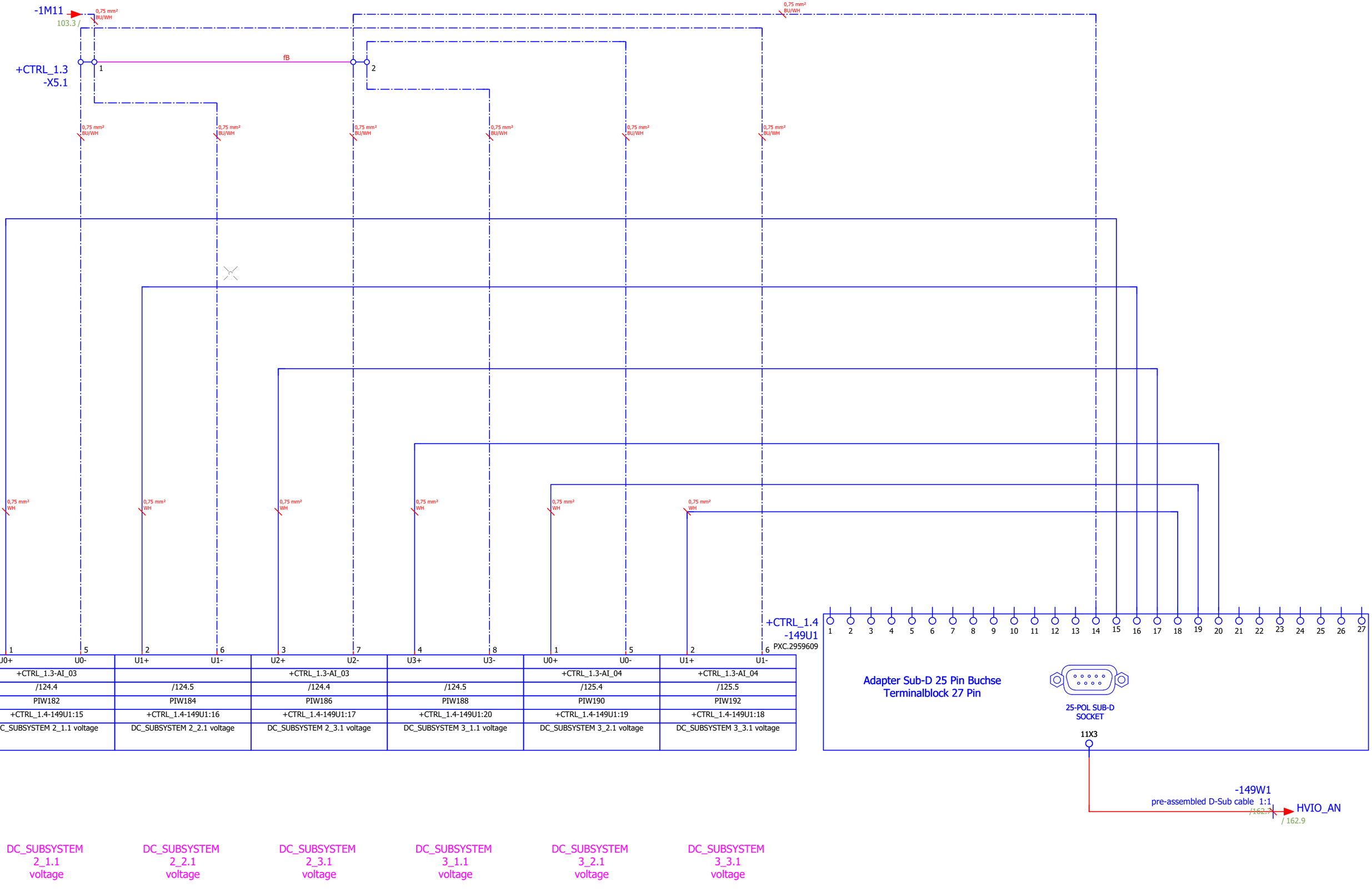
CIR CABINET TEMPERATURE

INDUCTOR DC SUB 4_3 TEMPERATURE 4_3

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Editor	Freqcon_JD			Statron	FREQCON	ANALOG INPUTS COOLING WATER TEMPERATURE	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 148
Date								+		total: 482

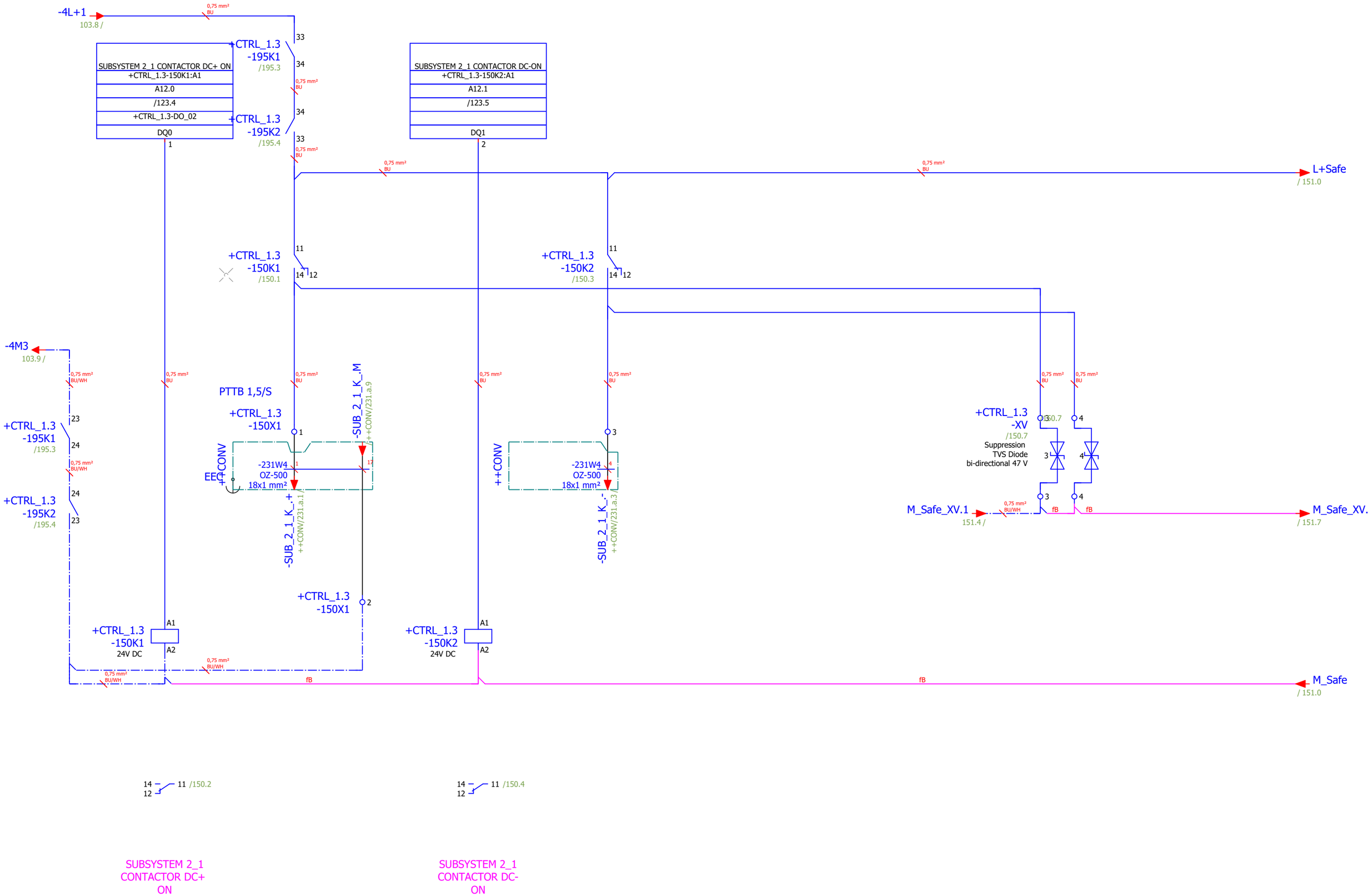


Voltage measurement

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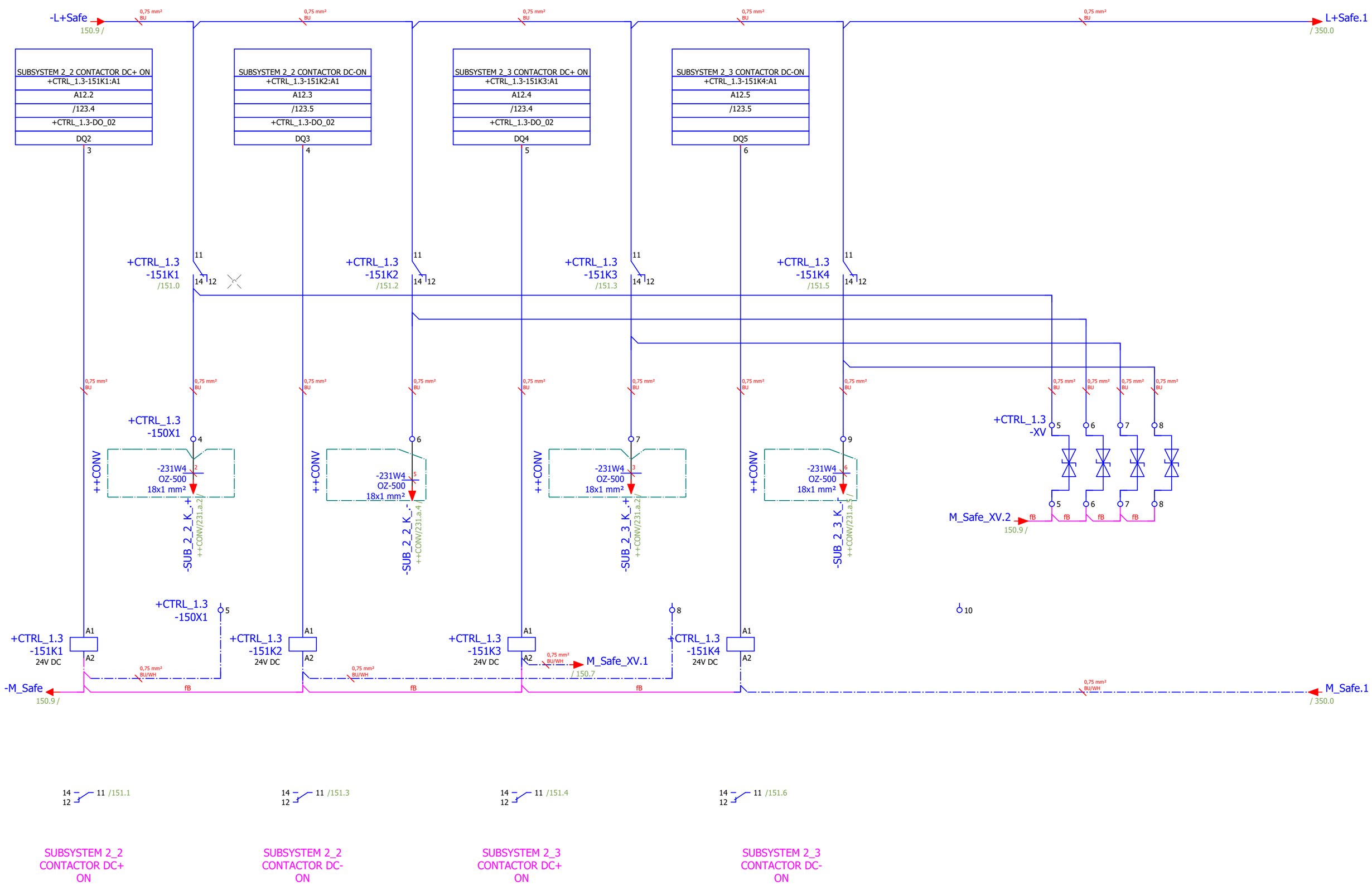
Editor	Freqcon_JD			Statron	FREQCON	ANALOG INPUTS MEASURING VOLTAGE	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 149
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS DC CONTACTORS 2_1	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 150
Date								+	total: 482



14 12 11 /151.1

14 12 11 /151.3

14 12 11 /151.4

14 12 11 /151.6

SUBSYSTEM 2_2 CONTACTOR DC+ ON

SUBSYSTEM 2_2 CONTACTOR DC- ON

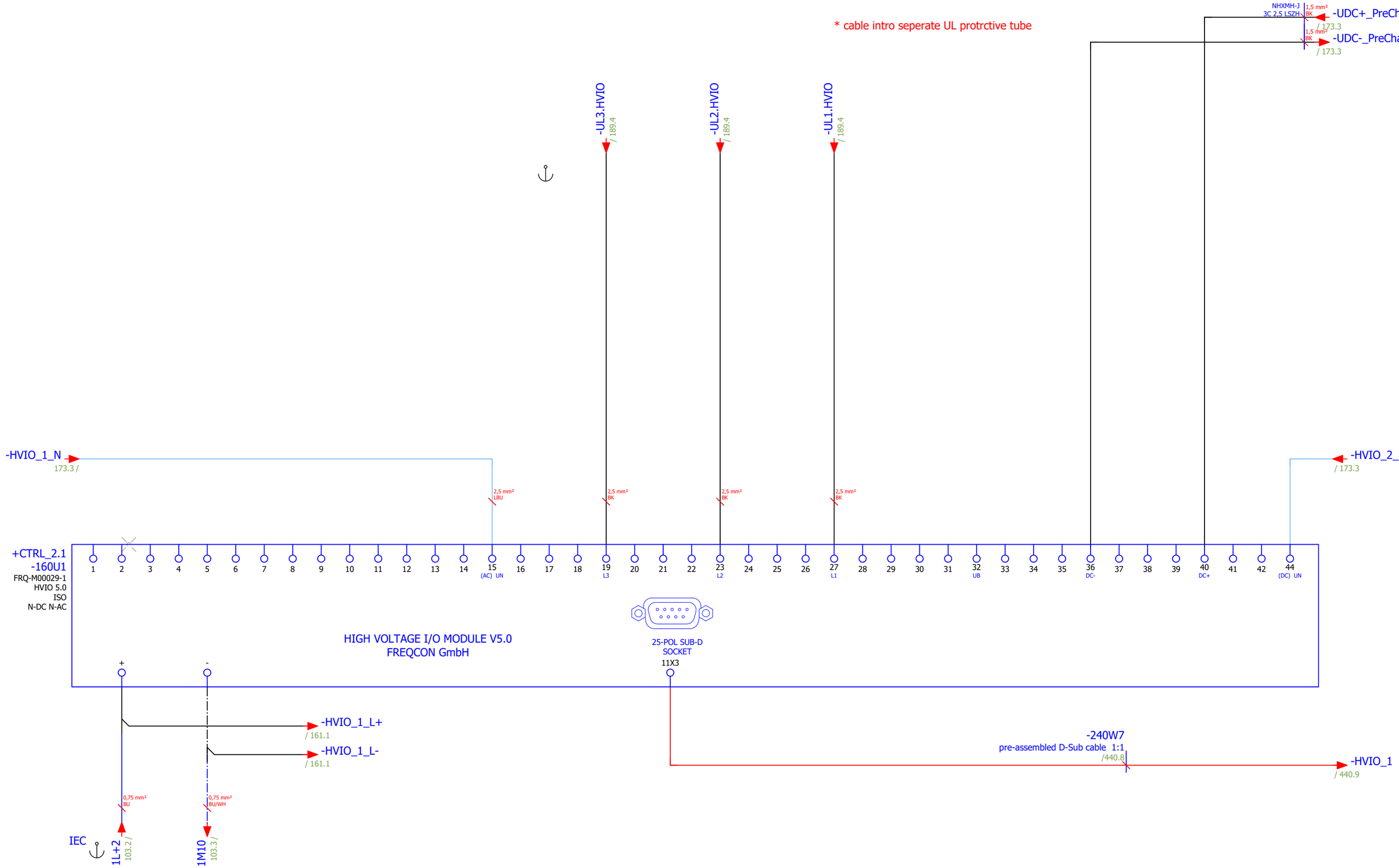
SUBSYSTEM 2_3 CONTACTOR DC+ ON

SUBSYSTEM 2_3 CONTACTOR DC- ON

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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS DC CONTACTORS 2_2, 2_3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 151
Date								+	total: 482



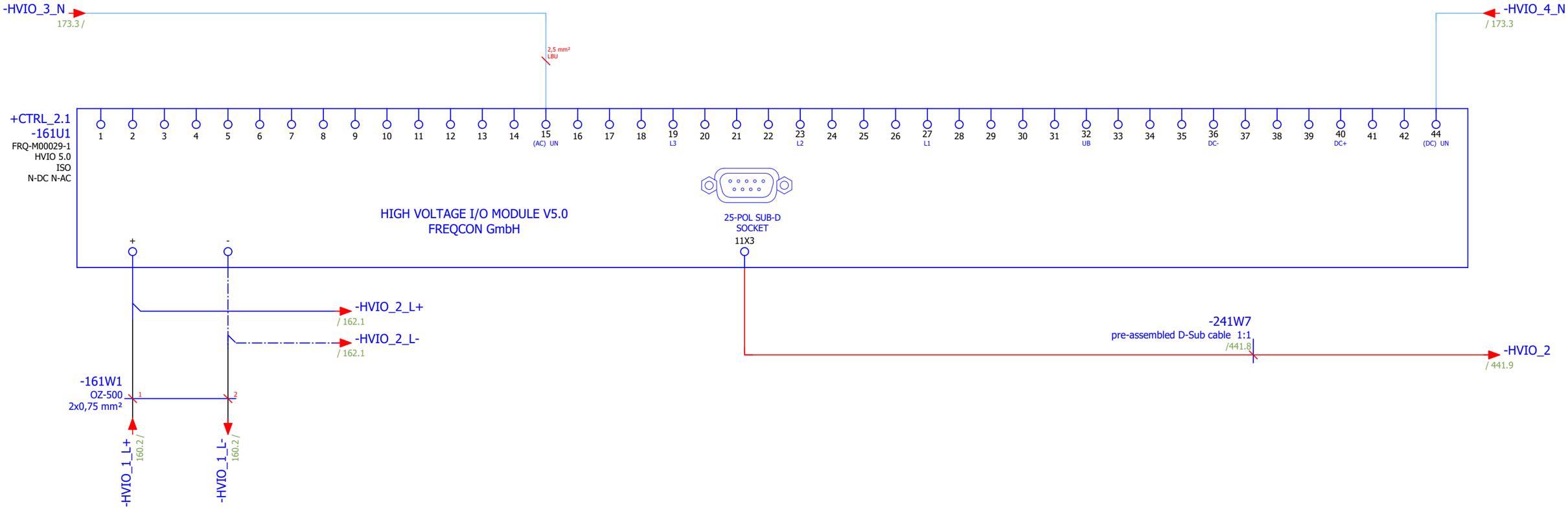
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Measuring: Grid side voltage / DC-Link

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Editor	Freqcon_DG			Statron	FREQCON	INTERFACE HVIO 1	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	29.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 160
Date								+	total: 482

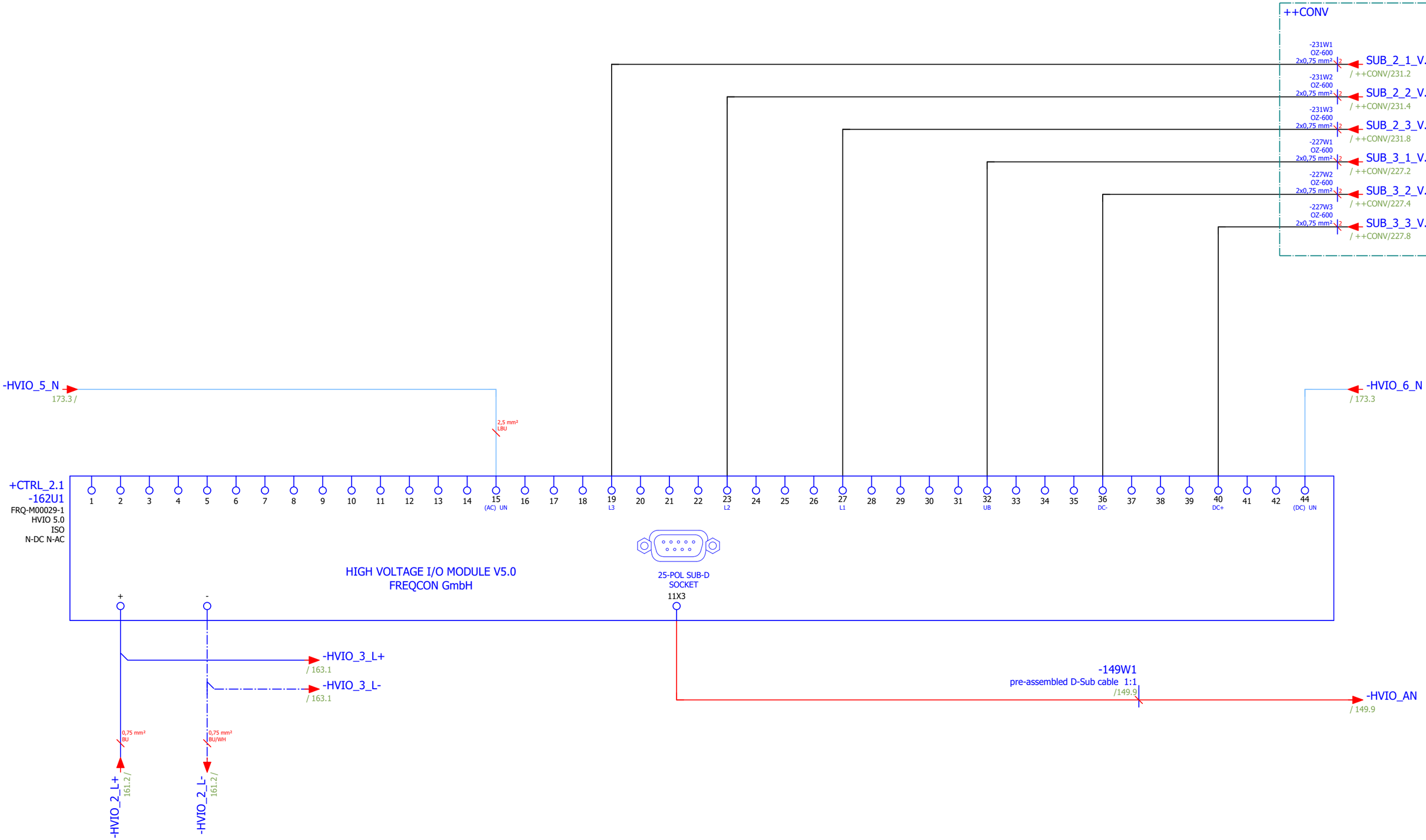
0	1	2	3	4	5	6	7	8	9



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162

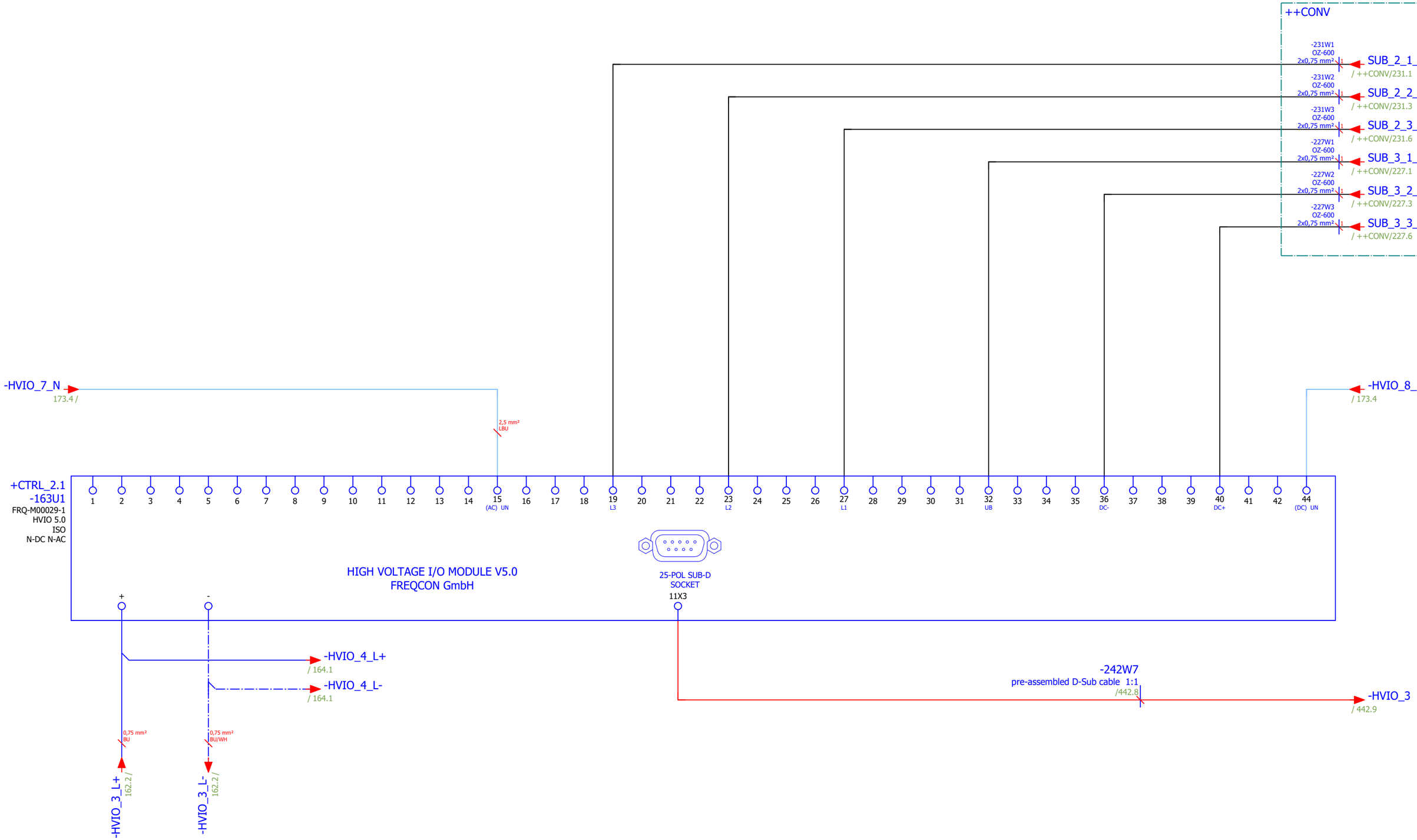
Editor	Freqcon_DG			Statron	FREQCON	INTERFACE HVIO 2	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	29.07.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 161
Date								+		total: 482



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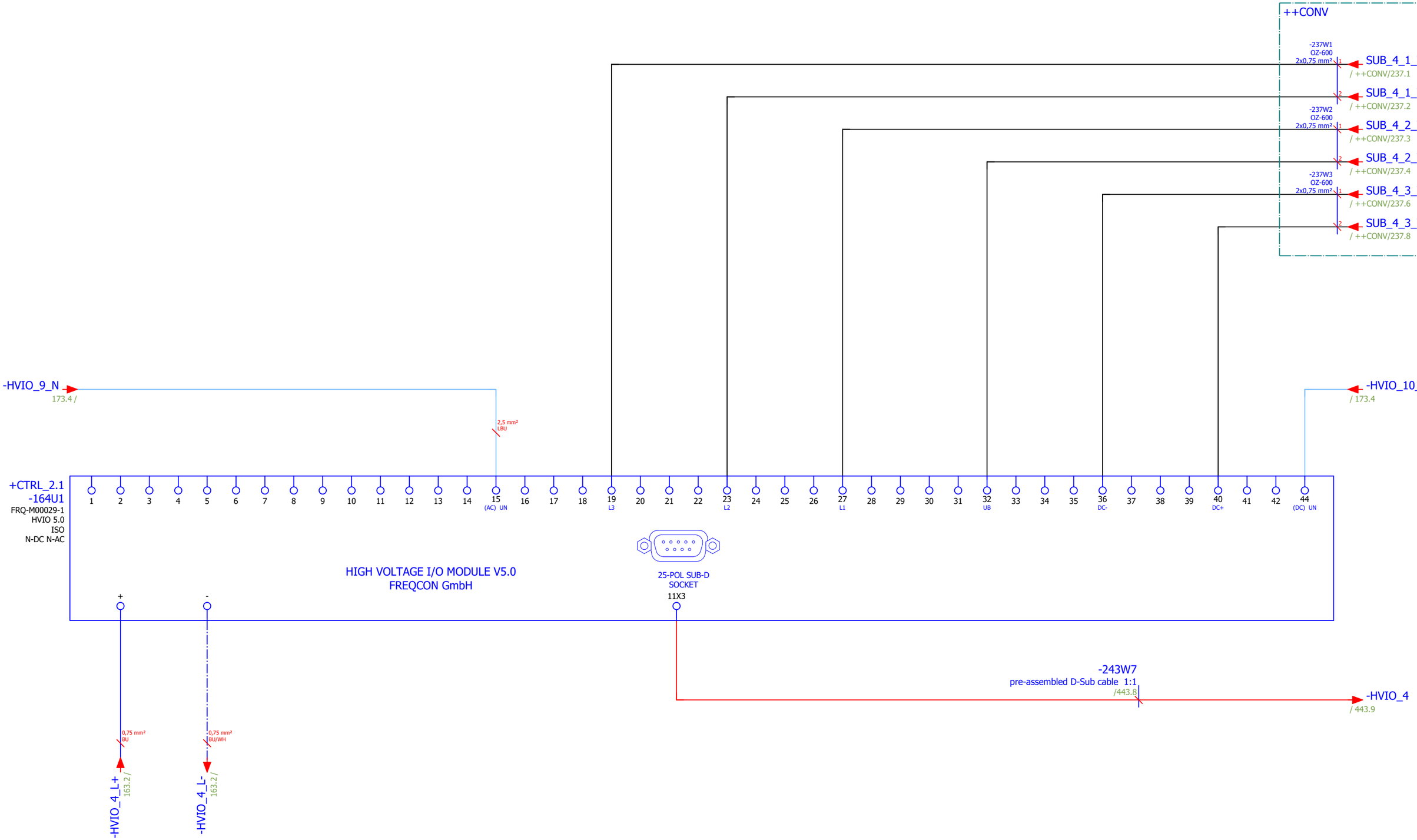
Editor	Freqcon_JD			Statron	FREQCON	INTERFACE HVIO 2 ANALOG	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 162
Date								+	total: 482



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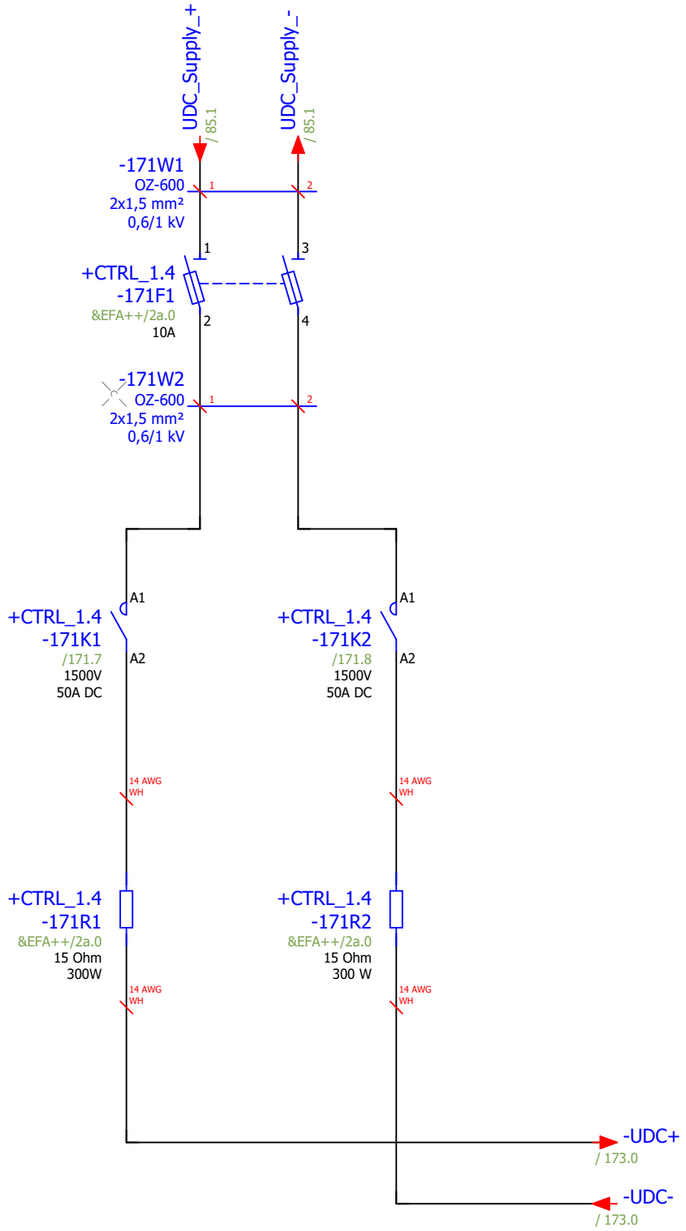
Editor	Freqcon_JD			Statron	FREQCON	INTERFACE HVIO 3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 163
Date								+	total: 482



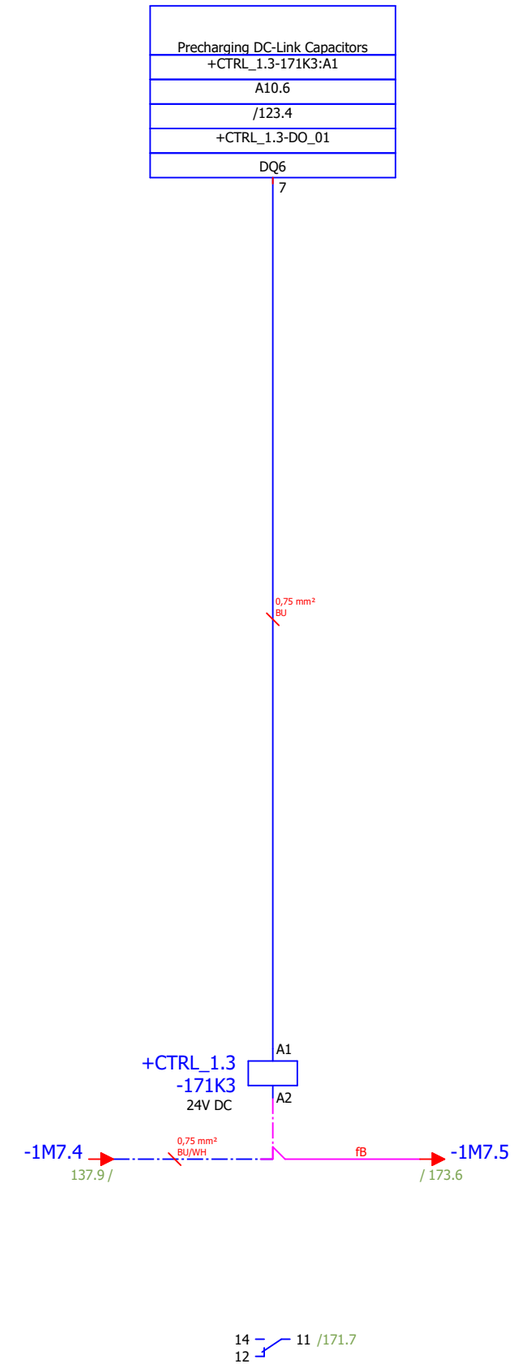
previous page:
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next page:
171

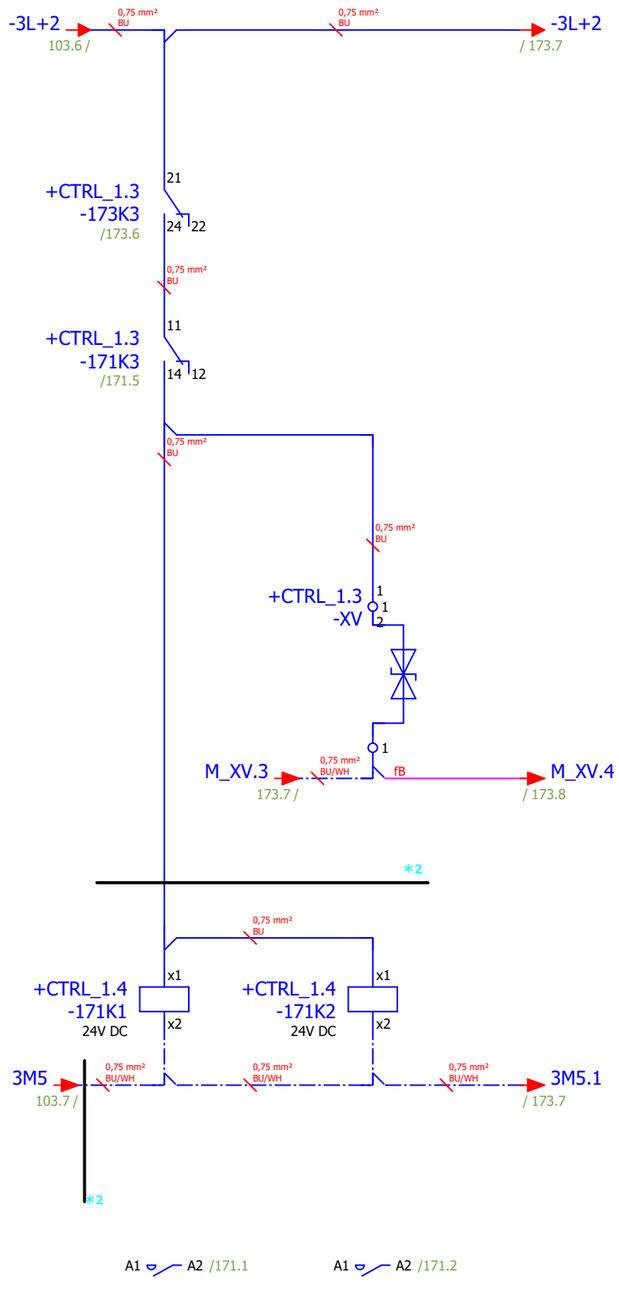
Editor	Freqcon_JD			Statron	FREQCON	INTERFACE HVIO 4	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 164
Date								+	total: 482



RESISTORS
FOR PRECHARGING
from Grid or Battery or DC-Link



Precharging
DC-Link Capacitors

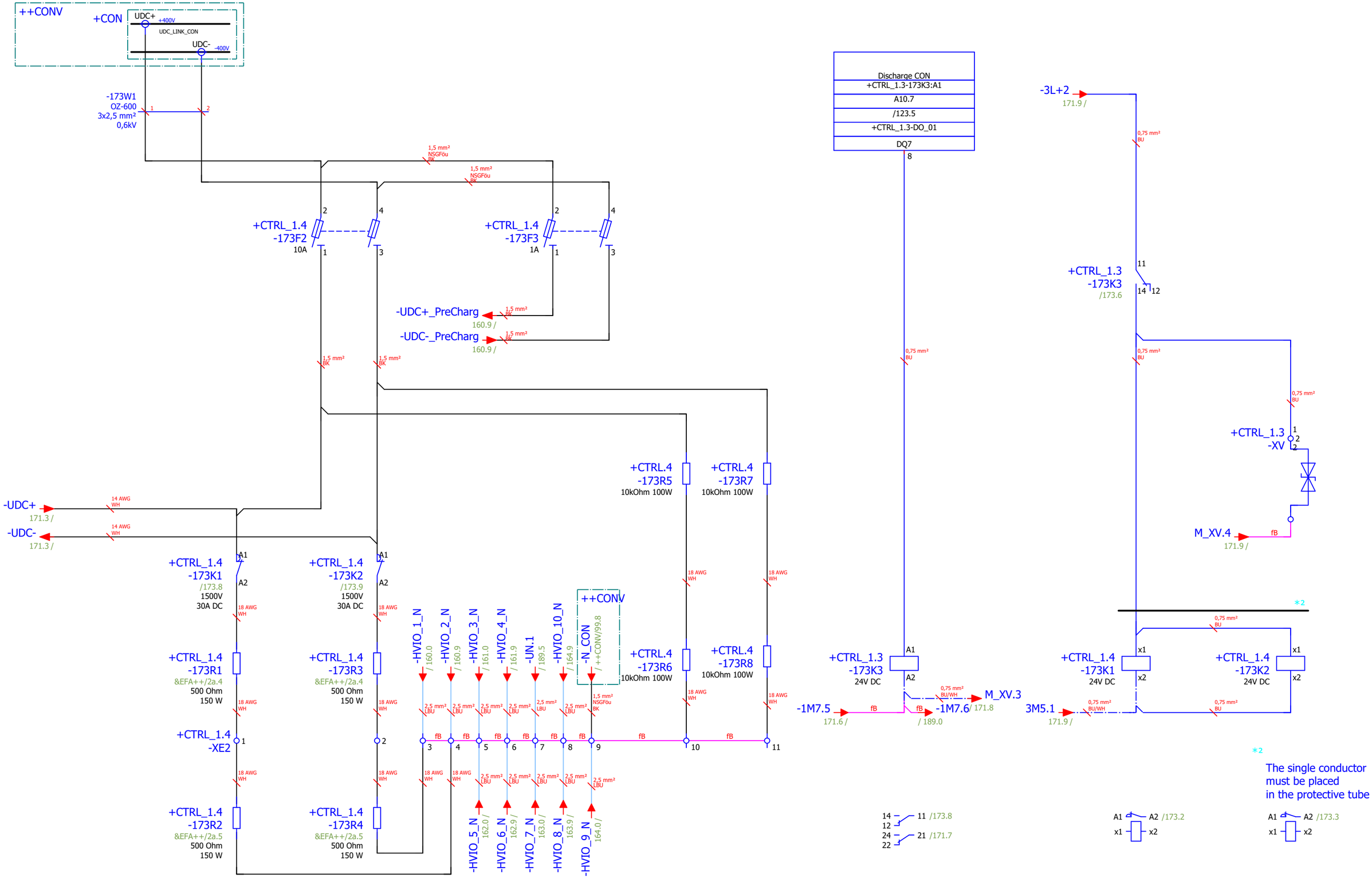


*2
The single conductor
must be placed
in the protective tube

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164

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173

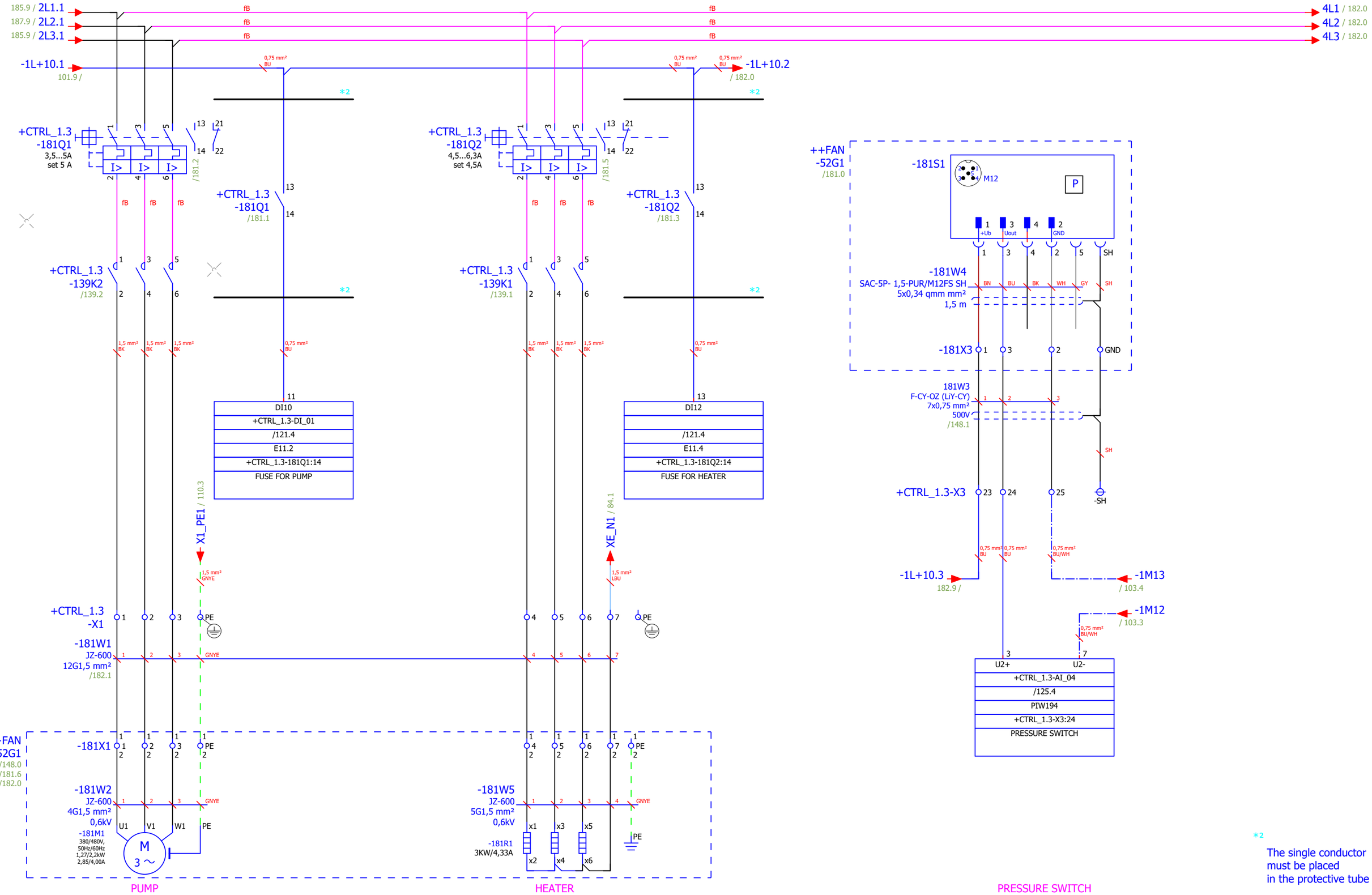
Editor	Freqcon_JD			Statron	FREQCON	PRE-CHARGING UDC	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 171
Date								+	total: 482



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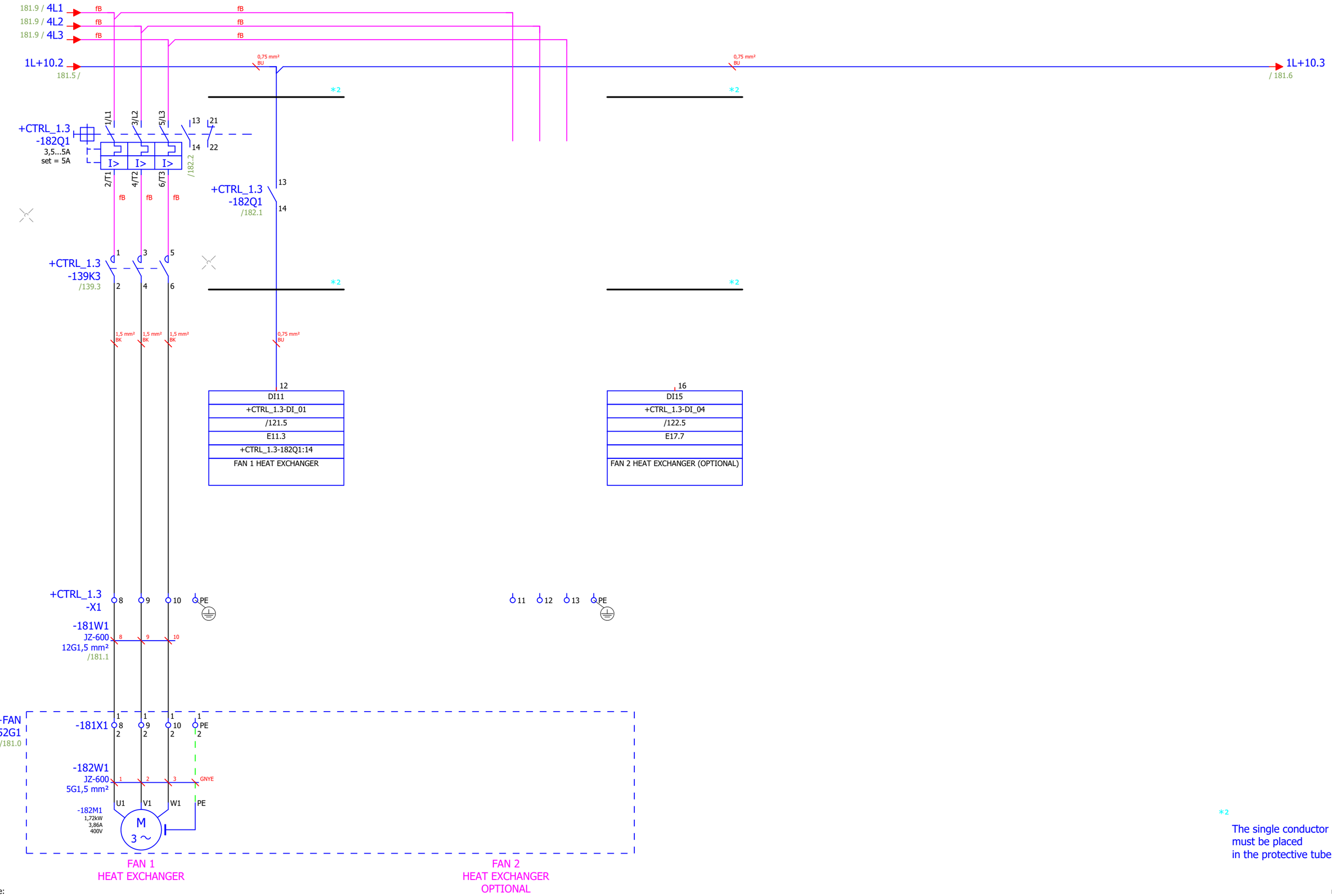
Editor	Freqcon_JD			Statron	FREQCON	DISCHARGE UDC	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 173
Date								+ total: 482



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Editor	Freqcon_DG			Statron	FREQCON	WATER SYSTEM	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 181
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	HEAT EXCHANGER	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 182
Date								+	total: 482

84.9 / 1L1.1
84.9 / 1L2.1
fB
1L1.2 / 185.0
1L2.2 / 187.0

-1L+8.1
84.6 /
0,75 mm² BU
-1L+8.2
/ 185.8

+CTRL_1.3
-183F1
C16A
/183.6
+CTRL_1.3
-183F2
C10A
/183.6

*2
+CTRL_1.3
-183F1
/183.1
0,75 mm² BU
*2
+CTRL_1.3
-183F2
/183.3
0,75 mm² BU
*2

1,5 mm² BK
1,5 mm² BK

+CTRL_1.3
-135K1
/135.1
XE_N2 / 84.1
+CTRL_1.3
-135K3
/135.3

1,5 mm² BK
2,5 mm² LBU
1,5 mm² BK

fB
fB
FB_XT.4-6
/ 185.1

PT 2,5 +CTRL_1.3
-XT
PE
PE

15
DI14
+CTRL_1.3-DI_01
/121.4
E11.6
+CTRL_1.3-183F2:13
Fuse Fans CON, IND Cabinets

++CONV
-279W1
JZ-500
3G1,5 mm²
GNYE
-FAN_L_2 ++CONV/279.1/
-FAN_N_2 ++CONV/279.1/
-FAN_PE_2 ++CONV/279.1/
EEC

++CONV
-281W1
JZ-500
3G1,5 mm²
GNYE
-FAN_L_3 ++CONV/281.1/
-FAN_N_3 ++CONV/281.1/
-FAN_PE_3 ++CONV/281.1/
EEC

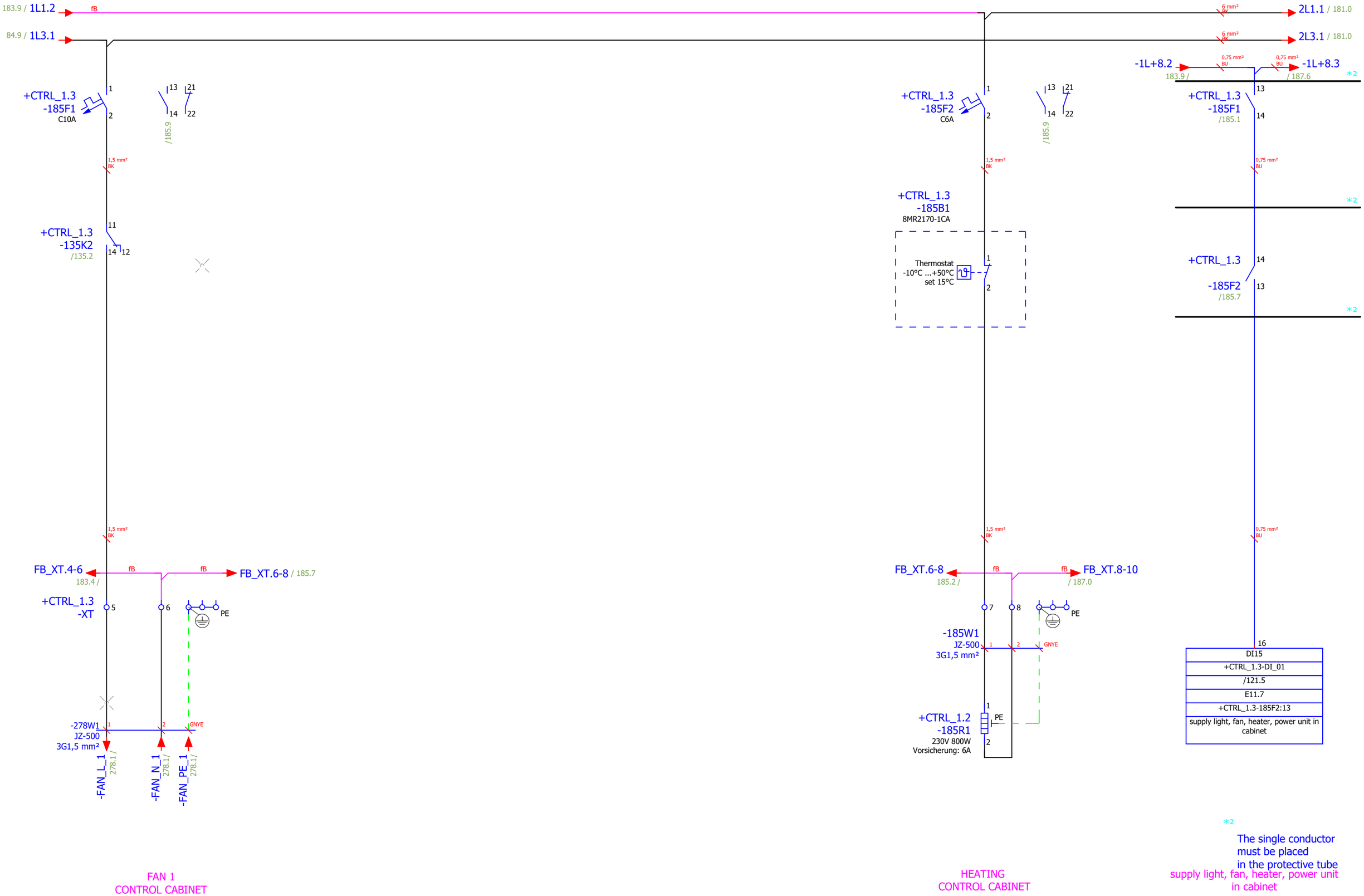
CON
Fans 1-5
in door

CIR
Fans 1-3
in door

*2
The single conductor
must be placed
in the protective tube

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next page: 185

Editor	Freqcon_DG			Statron	FREQCON	Supply for cabinet fan	20240809_V0.7	= UNIT_01 Converter Container 1
Date	29.07.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 183
Date								+ total: 482



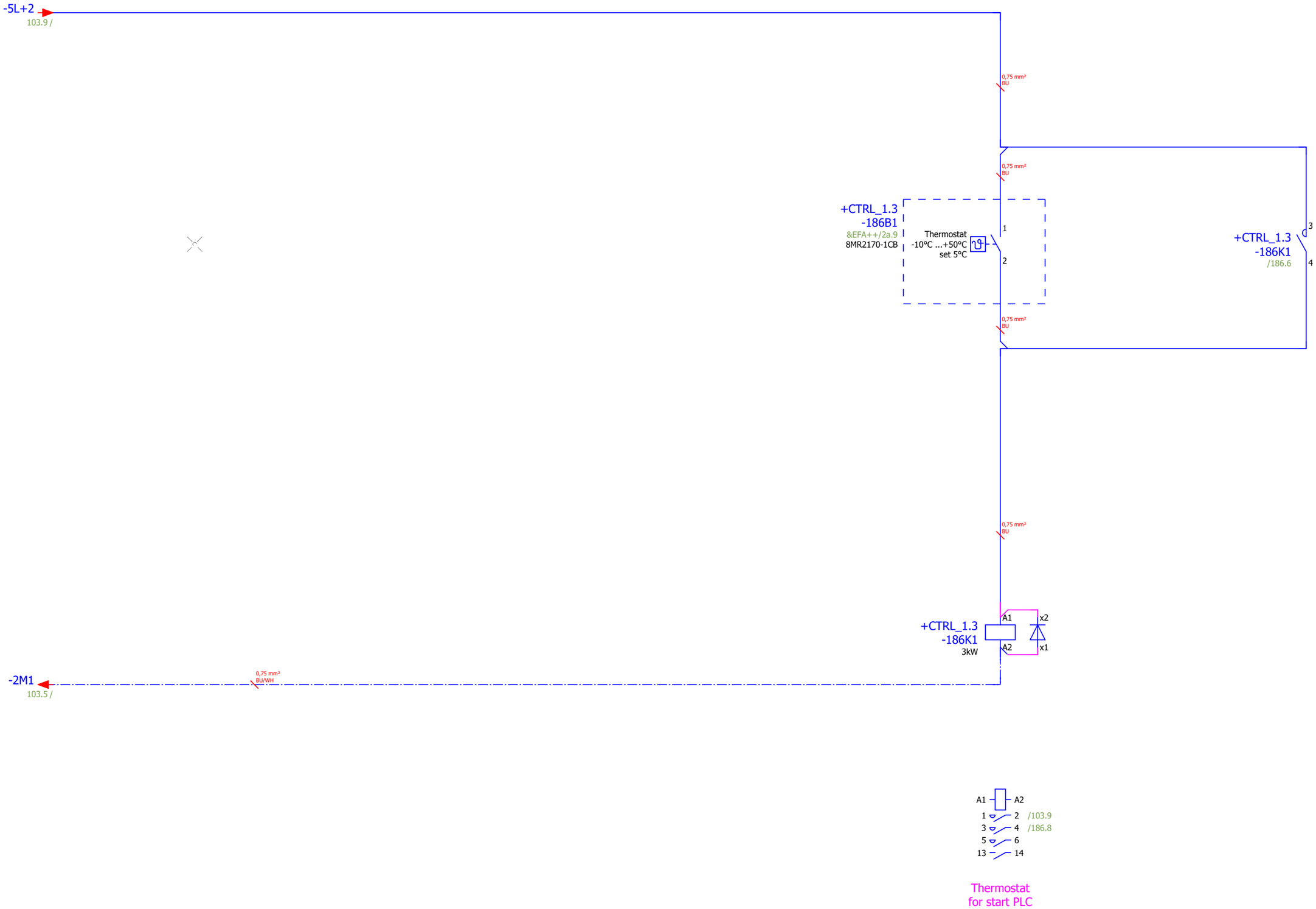
FAN 1
CONTROL CABINET

HEATING
CONTROL CABINET

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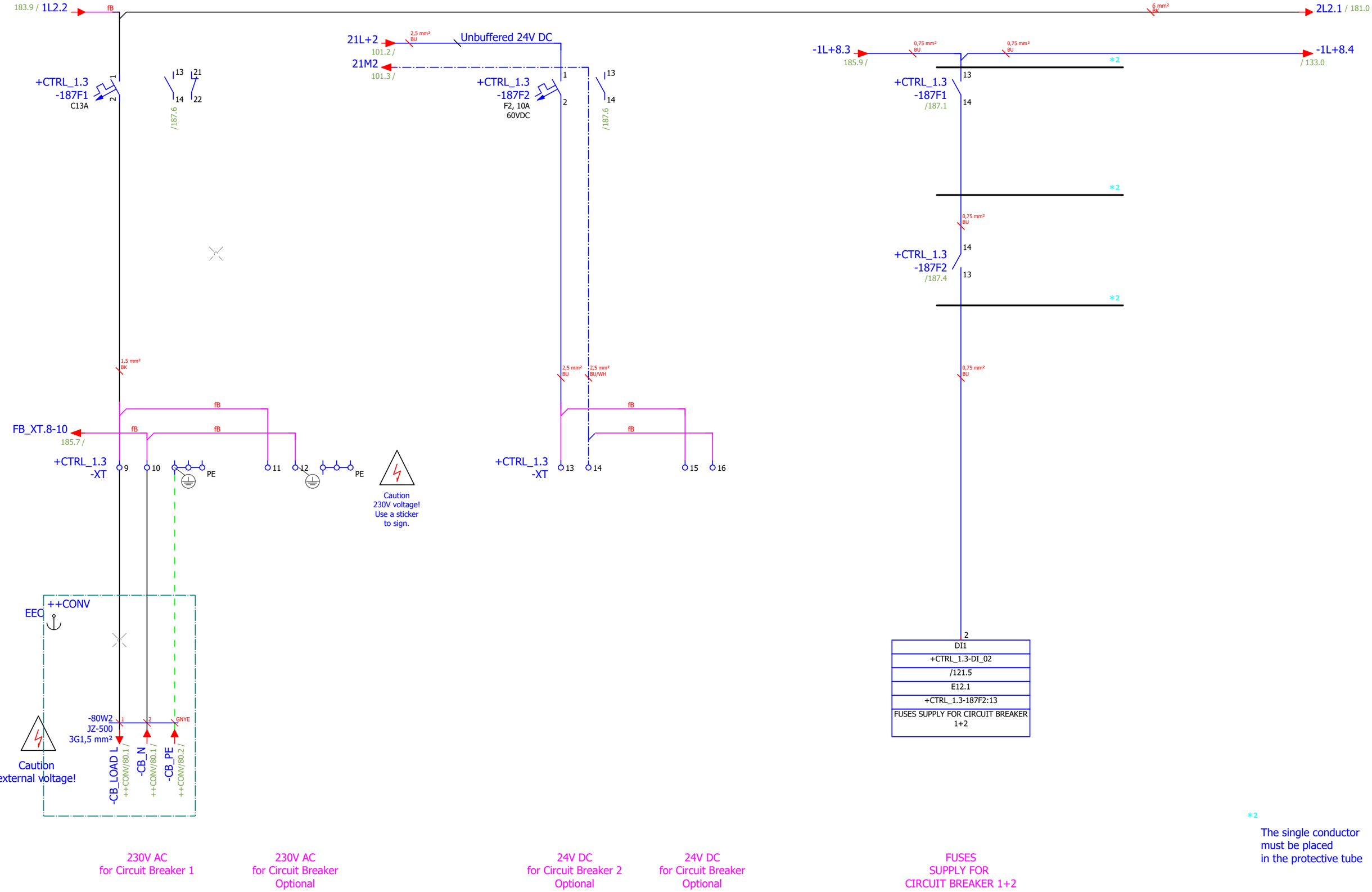
Editor	Freqcon_JD			Statron	FREQCON	FAN / HEATING CONTROL CABINET	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 185
Date								+		total: 482



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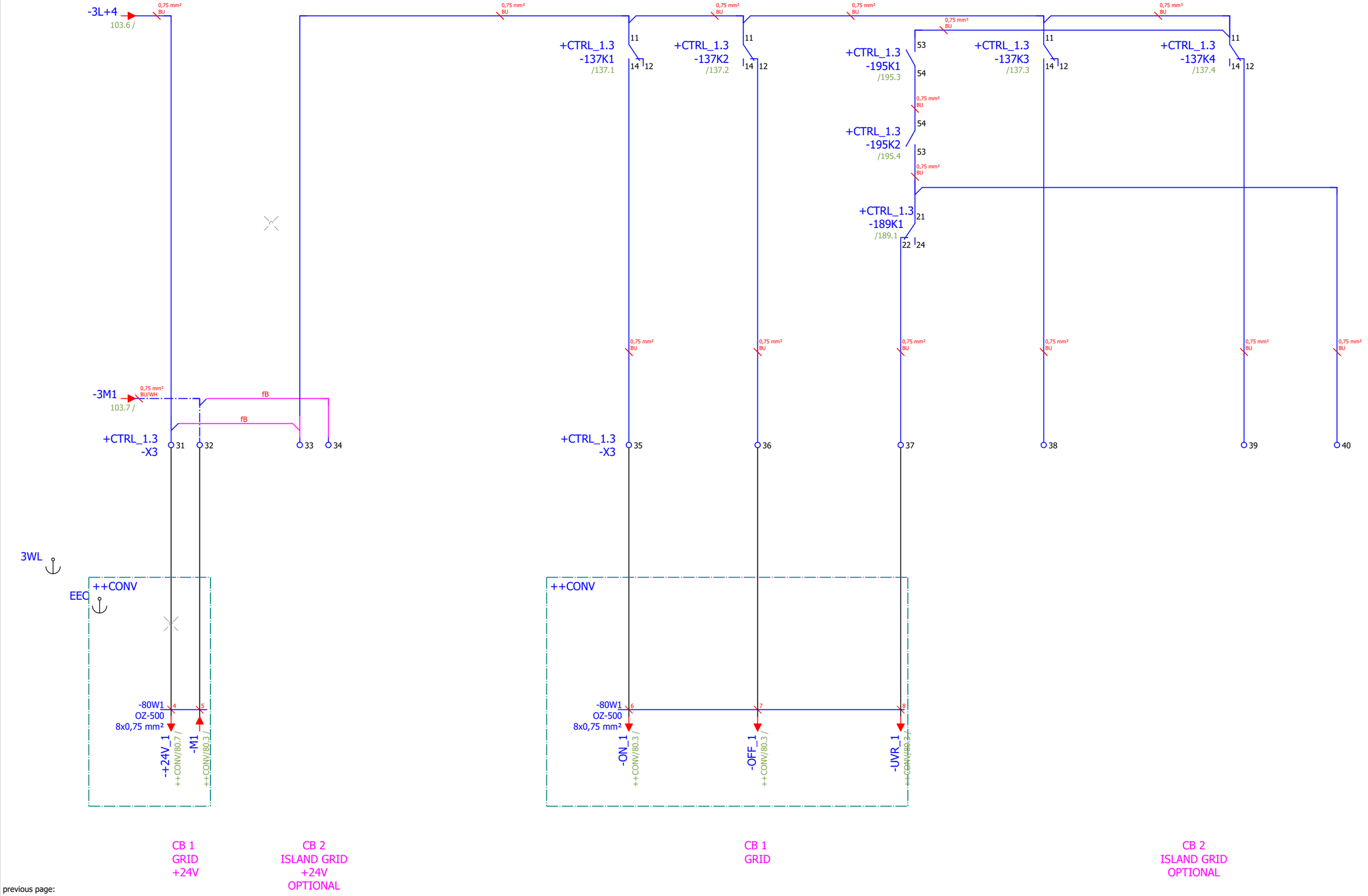
Editor	Freqcon_JD			Statron	FREQCON	THERMOSTAT	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 186
Date								+		total: 482



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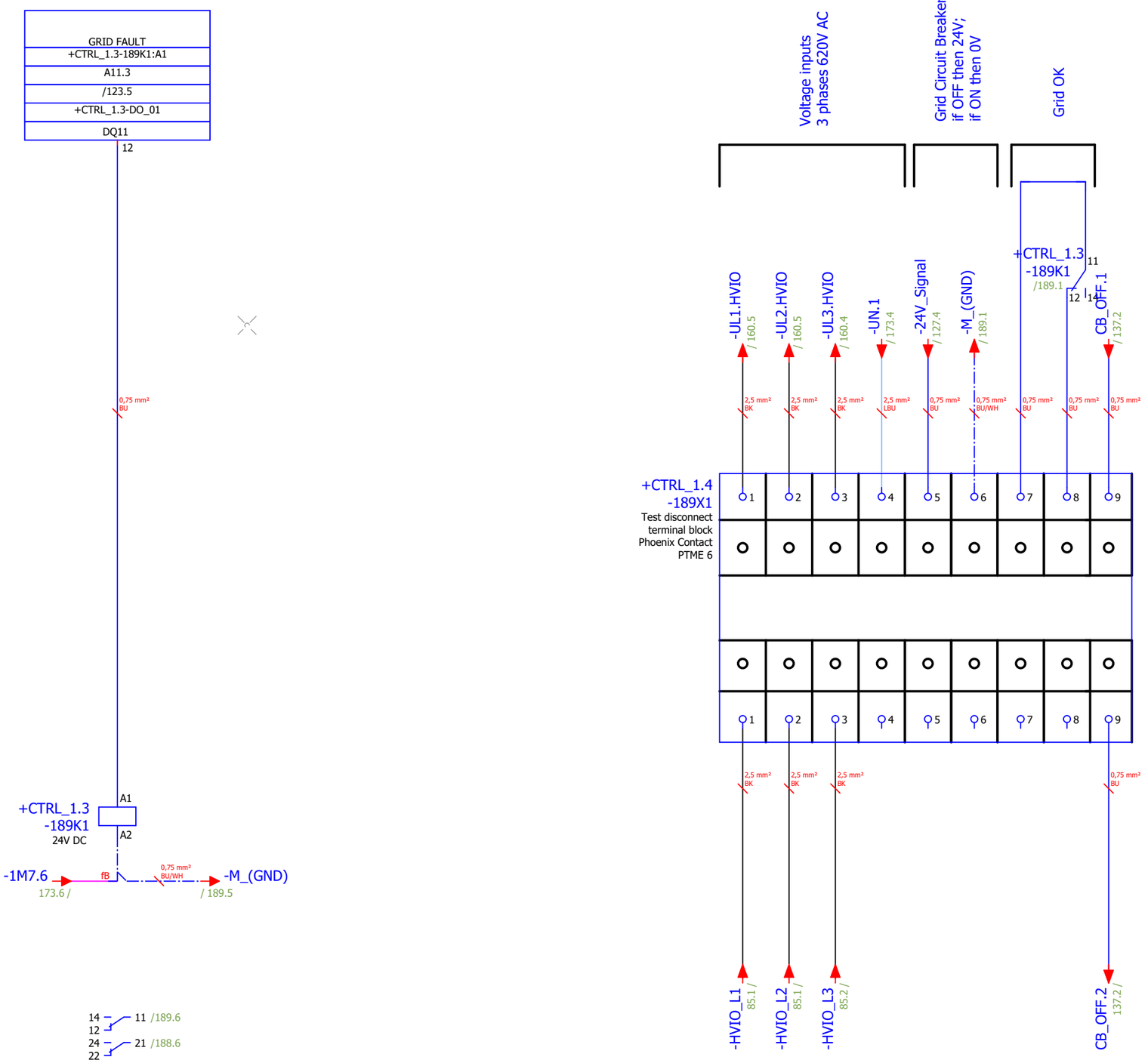
Editor	Freqcon_JD			Statron	FREQCON	24V DC SUPPLY CB	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore				++ CT Control cabinets	page: 187
Date							10354_23A2007	+	total: 482

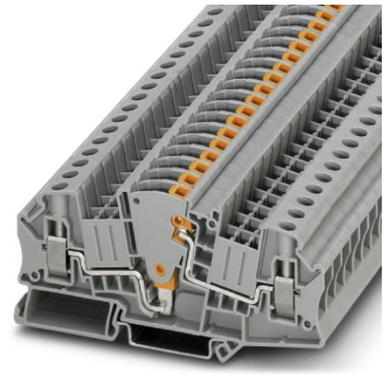


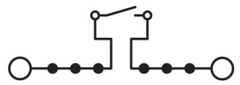
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Editor	Freqcon_JD			Statron	FREQCON	24V DC SUPPLY CON / CB GRID	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 188
Date								+	total: 482





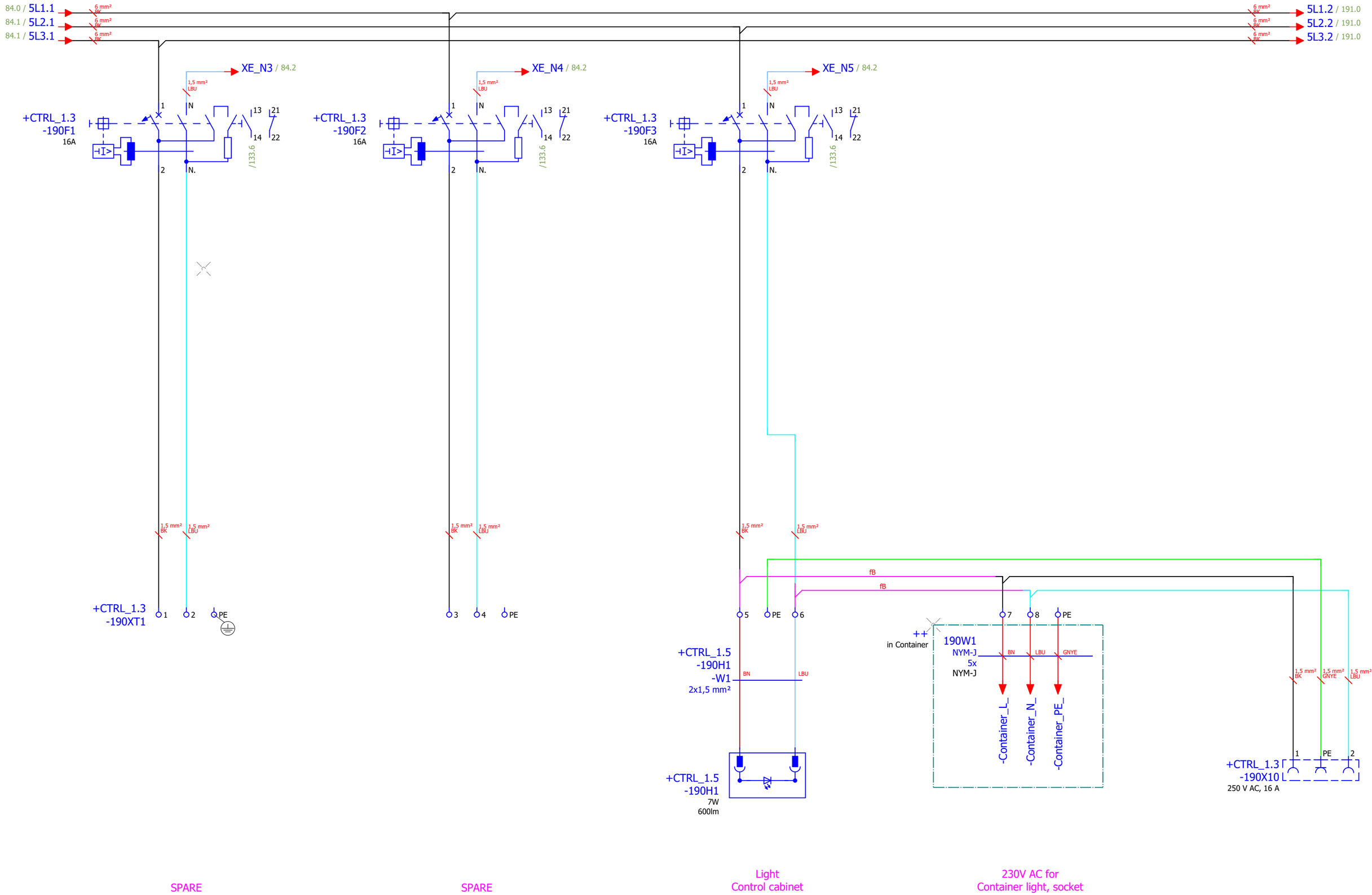


GRID FAULT

Test terminal block for protection tests

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next page: 190

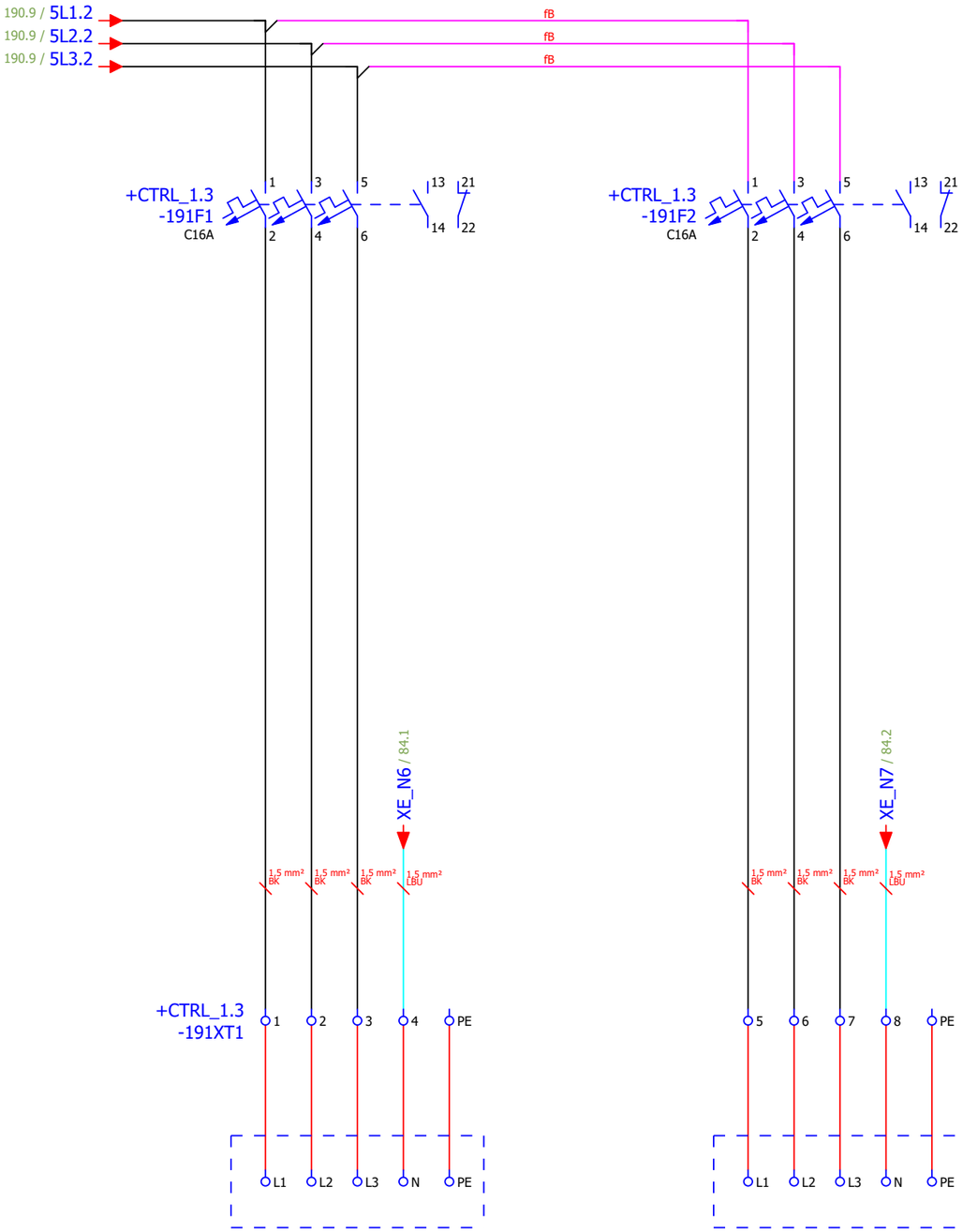
Editor	Freqcon_JD			Statron	FREQCON	TEST TERMINAL BLOCK	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 189
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Editor	Freqcon_DG			Statron	FREQCON	CONTAINER COOLING, LIGHT 230V SUPPLY	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 190
Date								+	total: 482

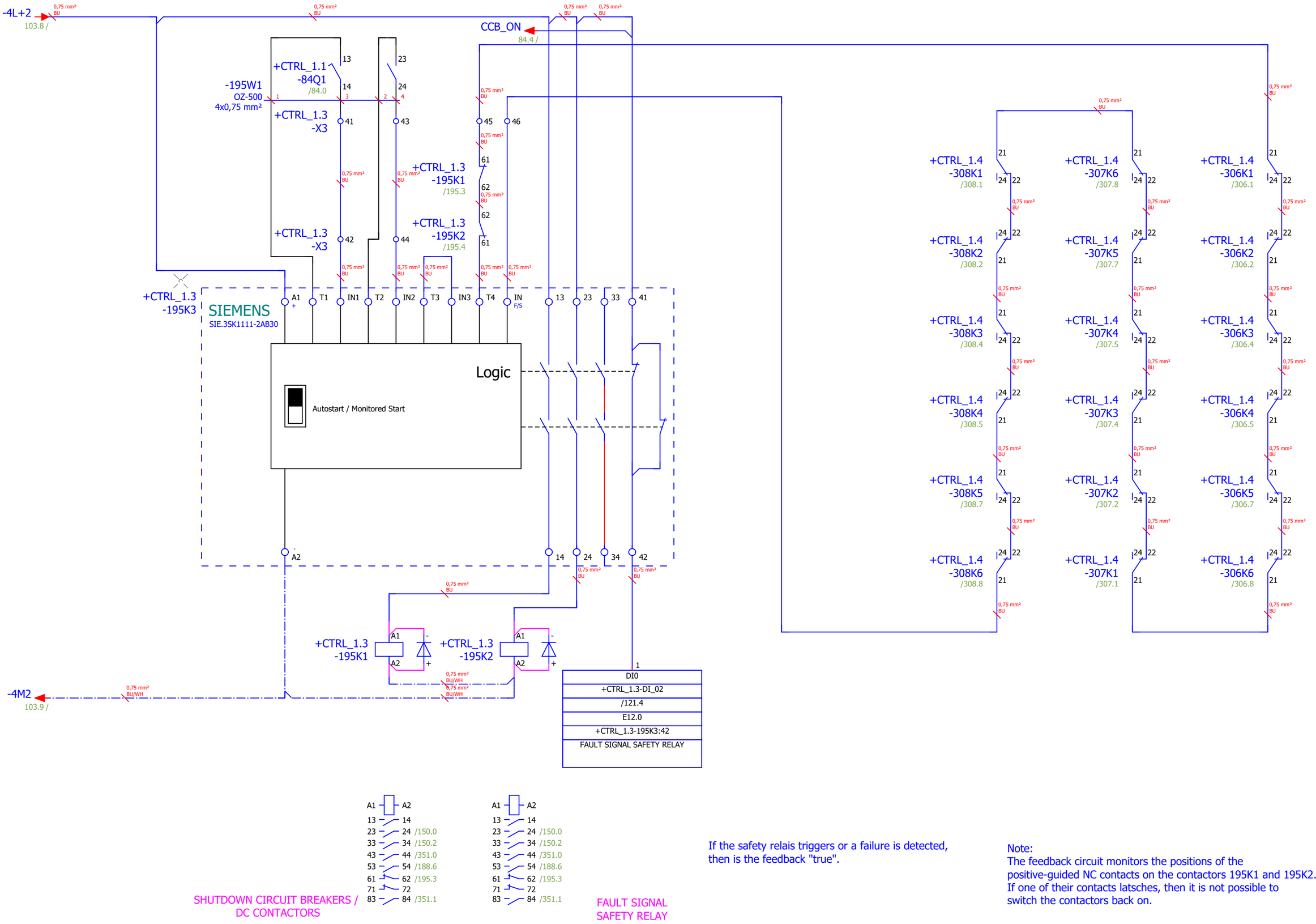


400V AC for
Container Air Conditioning 1

400V AC for
Container Air Conditioning 2

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A1 — A2
13 — 14
23 — 24 /150.0
33 — 34 /150.2
43 — 44 /351.0
53 — 54 /188.6
61 — 62 /195.3
71 — 72
83 — 84 /351.1

SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS

A1 — A2
13 — 14
23 — 24 /150.0
33 — 34 /150.2
43 — 44 /351.0
53 — 54 /188.6
61 — 62 /195.3
71 — 72
83 — 84 /351.1

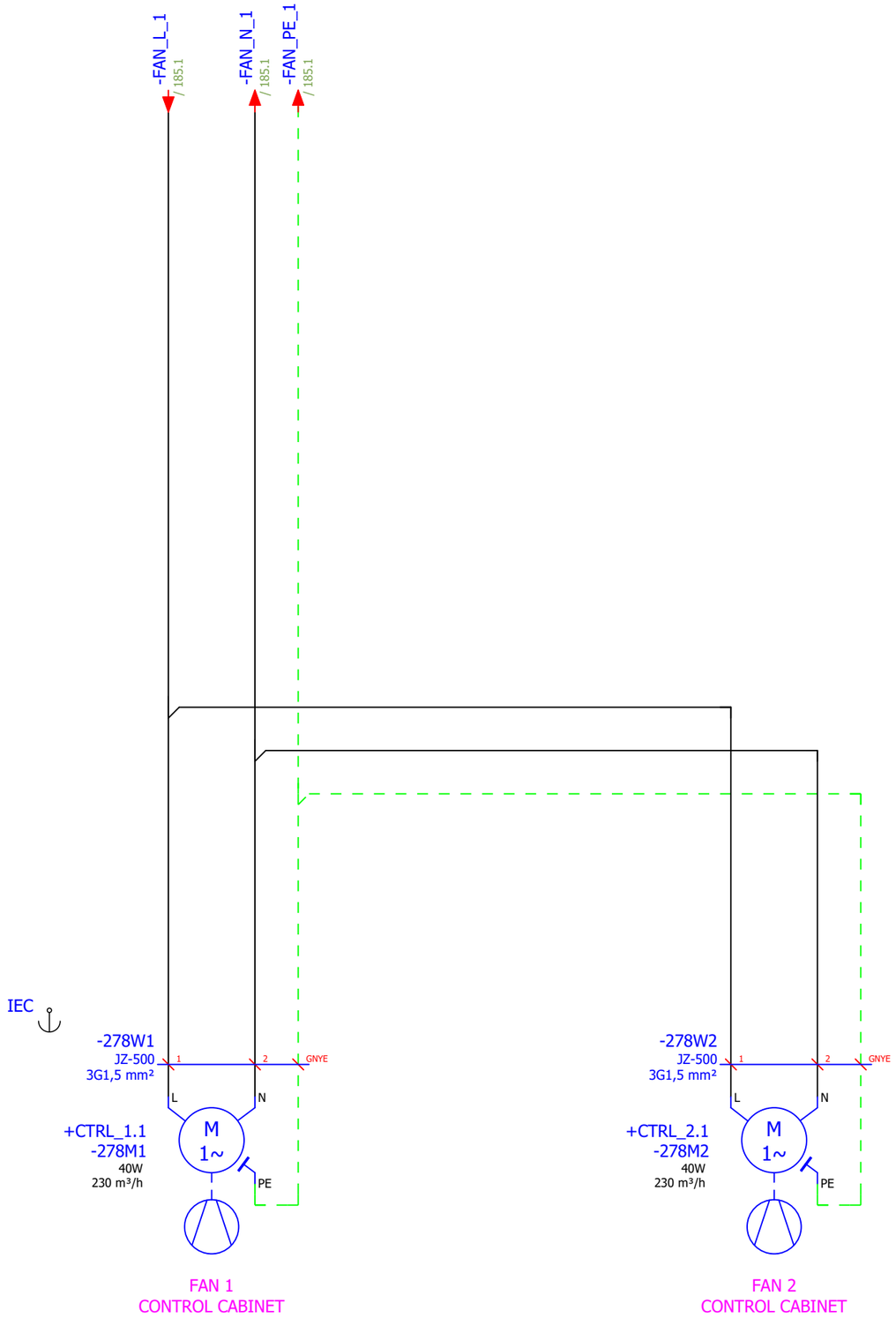
FAULT SIGNAL SAFETY RELAY

If the safety relais triggers or a failure is detected, then is the feedback "true".

Note:
The feedback circuit monitors the positions of the positive-guided NC contacts on the contactors 195K1 and 195K2. If one of their contacts latsches, then it is not possible to switch the contactors back on.

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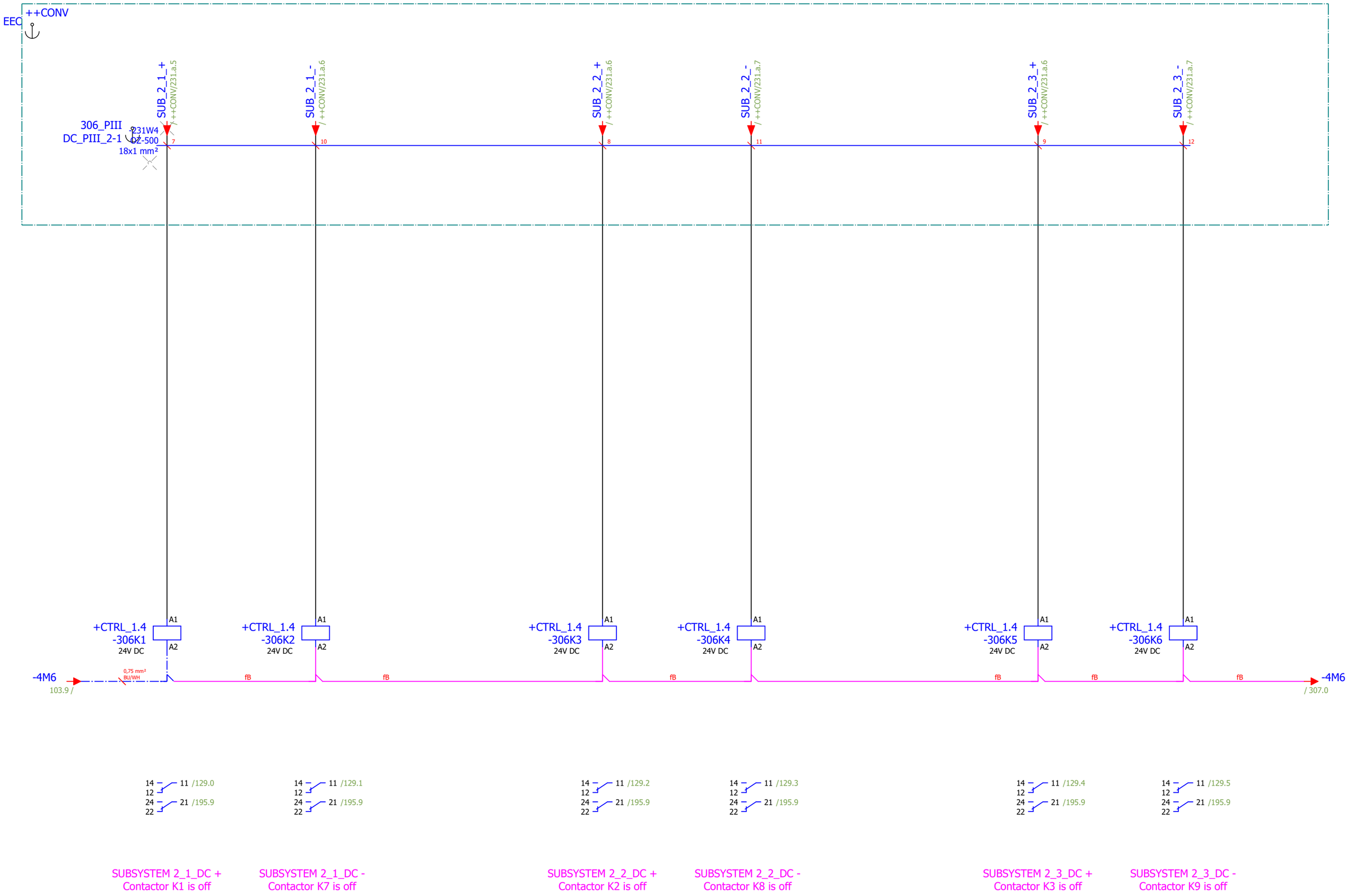
Editor	Freqcon_DG			Statron	FREQCON	SHUTDOWN CIRCUIT BREAKERS, DC CONTACTORS	20240809_V0.7	= UNIT_01 Converter Container 1
Date	29.07.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 195
Date								+ total: 482



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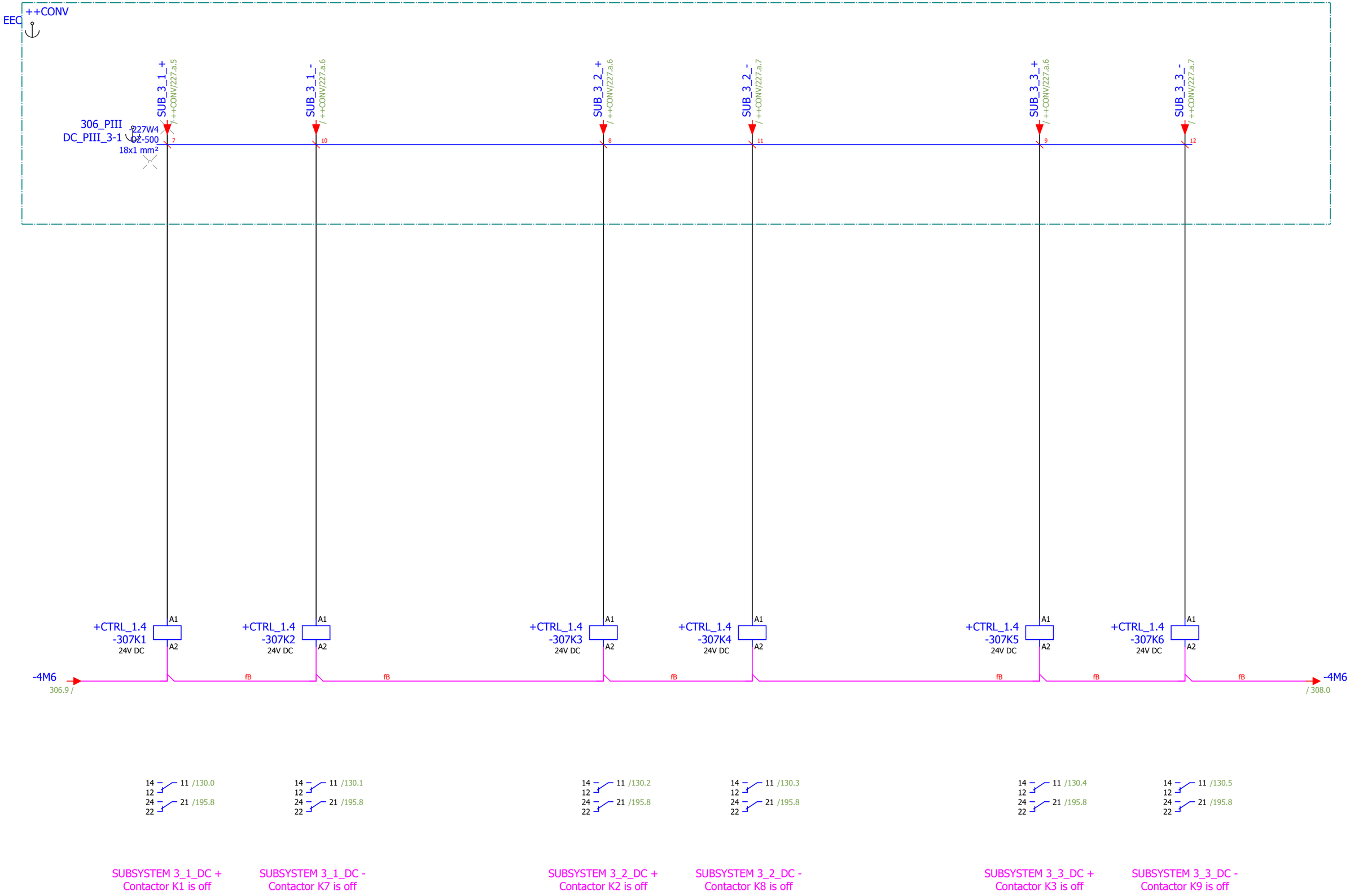
Editor	Freqcon_DG			Statron	FREQCON	CONTROL CABINET CLIMATE	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	29.07.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 278
Date								+		total: 482



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278

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307

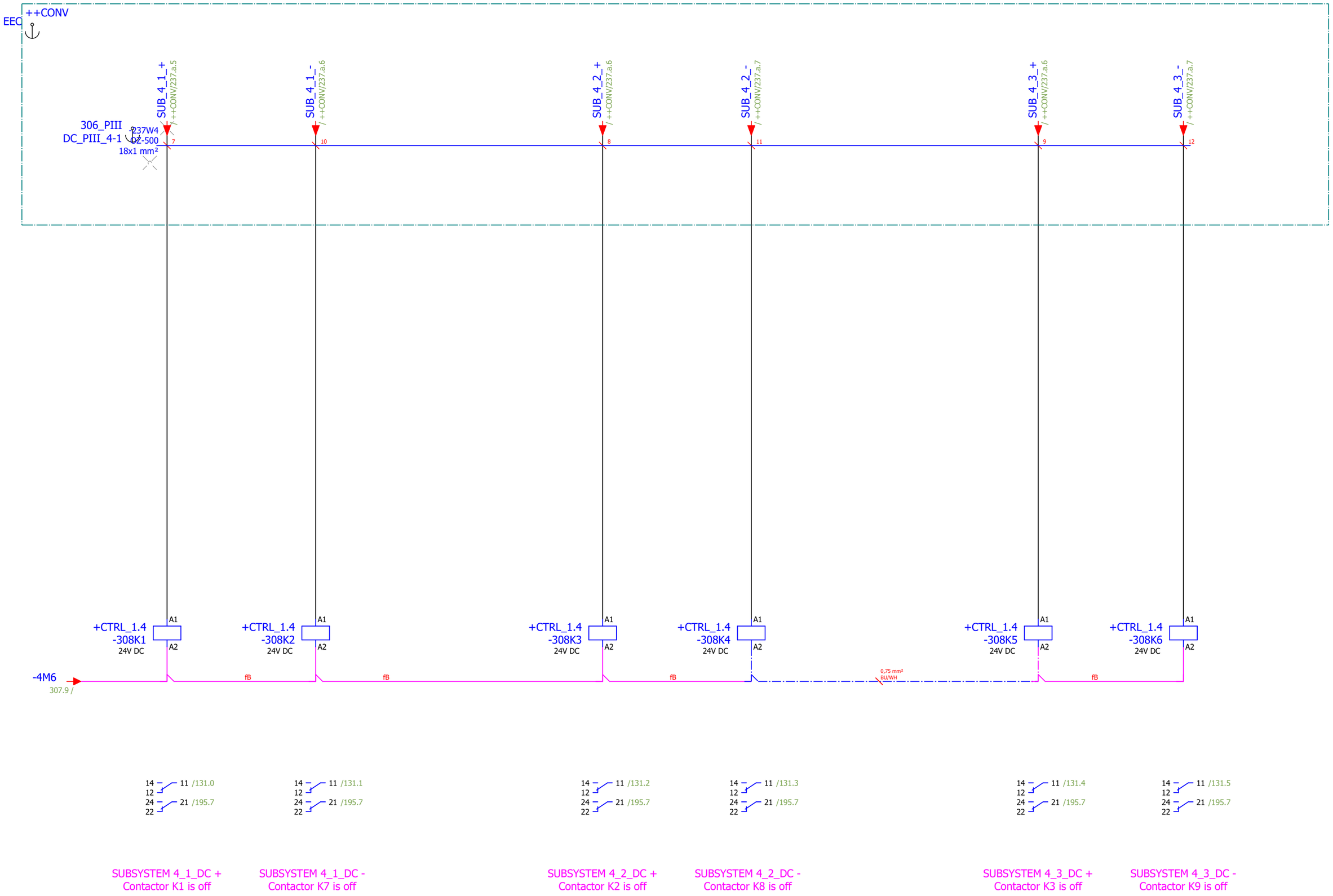
Editor	Freqcon_JD			Statron	FREQCON	Feedback DC contactors 1_4 - 1_6	20240809_V0.7	= UNIT_01	Converter Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 306
Date								+	total: 482



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306

next page:
308

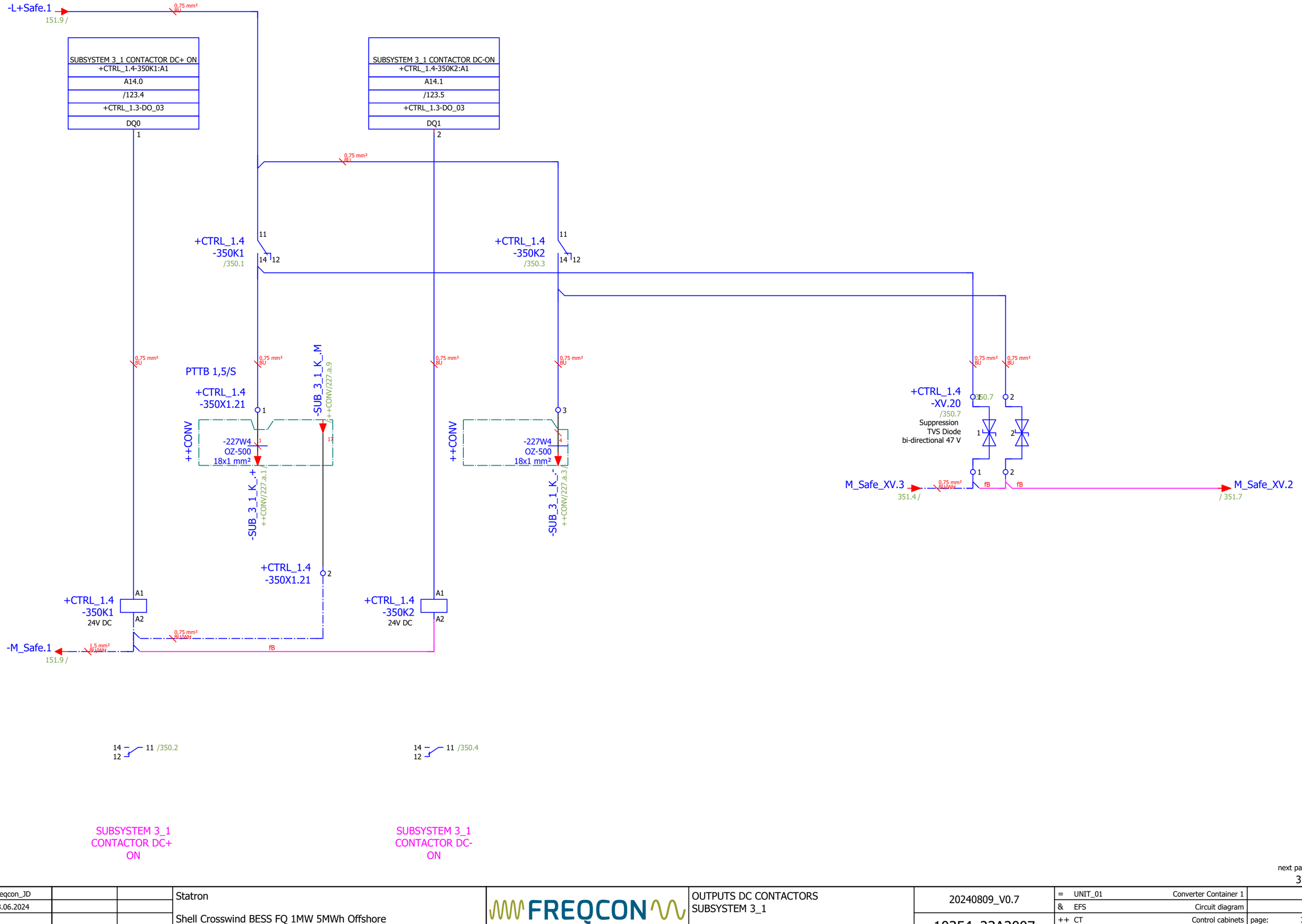
Editor	Freqcon_JD			Statron	FREQCON	Feedback DC contactors 2_1 - 2_3	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 307
Date								+		total: 482



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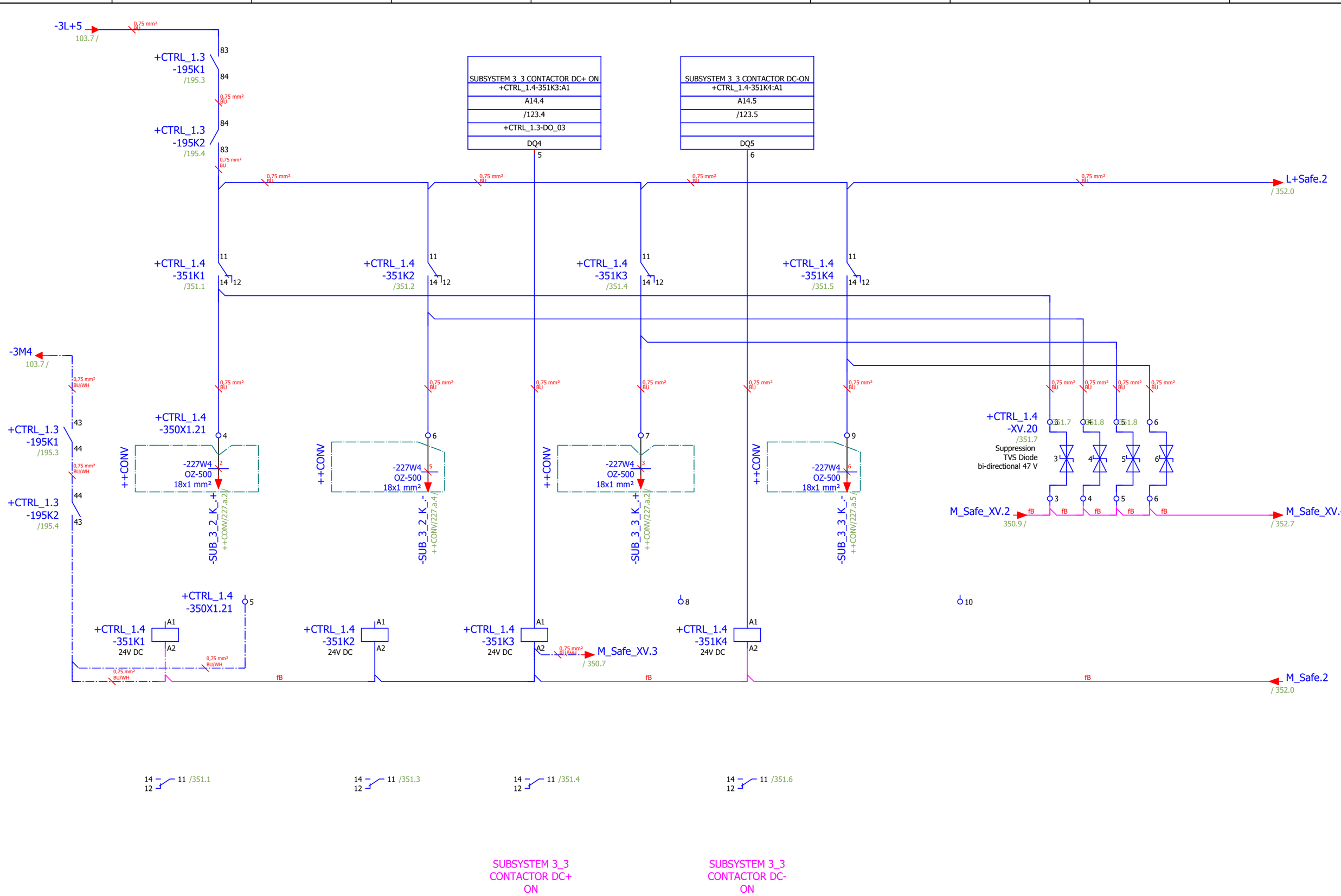
Editor	Freqcon_DG			Statron	FREQCON	Feedback DC contactors 2_4 - 2_6	20240809_V0.7	= UNIT_01	Converter Container 1
Date	29.07.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets page: 308
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS DC CONTACTORS SUBSYSTEM 3_1	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 350
Date								+	total: 482



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Editor	Freqcon_DG			Statron	FREQCON	OUTPUTS DC CONTACTORS SUBSYSTEM 3_2 - 3_3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	29.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 351
Date								+	total: 482

-L+Safe.2
351.9 /

SUBSYSTEM 4_1 CONTACTOR DC+ ON
+CTRL_1.4-352K1:A1
A14.6
/123.4
+CTRL_1.3-DO_03
DQ6
7

SUBSYSTEM 4_1 CONTACTOR DC-ON
+CTRL_1.4-352K2:A1
A14.7
/123.5
DQ7
8

L+Safe.3
/ 353.0

0,75 mm² BU

+CTRL_1.4
-352K1
/352.0
11
14 12

+CTRL_1.4
-352K2
/352.2
11
14 12

+CTRL_1.4
-350X1.21
11
++CONV
-237W4
OZ-500
18x1 mm²
1
17
-SUB_4_1_K_.+
++CONV/237.a.1
-SUB_4_1_K_.+
++CONV/237.a.9

+CTRL_1.4
-350X1.21
13
++CONV
-237W4
OZ-500
18x1 mm²
4
-SUB_4_1_K_.-
++CONV/237.a.3
-SUB_4_1_K_.-
++CONV/237.a.11

+CTRL_1.4
-350X1.21
12

+CTRL_1.4
-XV.20
/352.7
Suppression
TVS Diode
bi-directional 47 V
7
8

M_Safe_XV.4
351.9 /
fB
M_Safe_XV.5
/ 353.7

+CTRL_1.4
-352K1
24V DC
A1
A2

+CTRL_1.4
-352K2
24V DC
A1
A2

-M_Safe.2
351.9 /
fB
M_Safe.3
/ 353.0

14 11 /352.1
12

14 11 /352.3
12

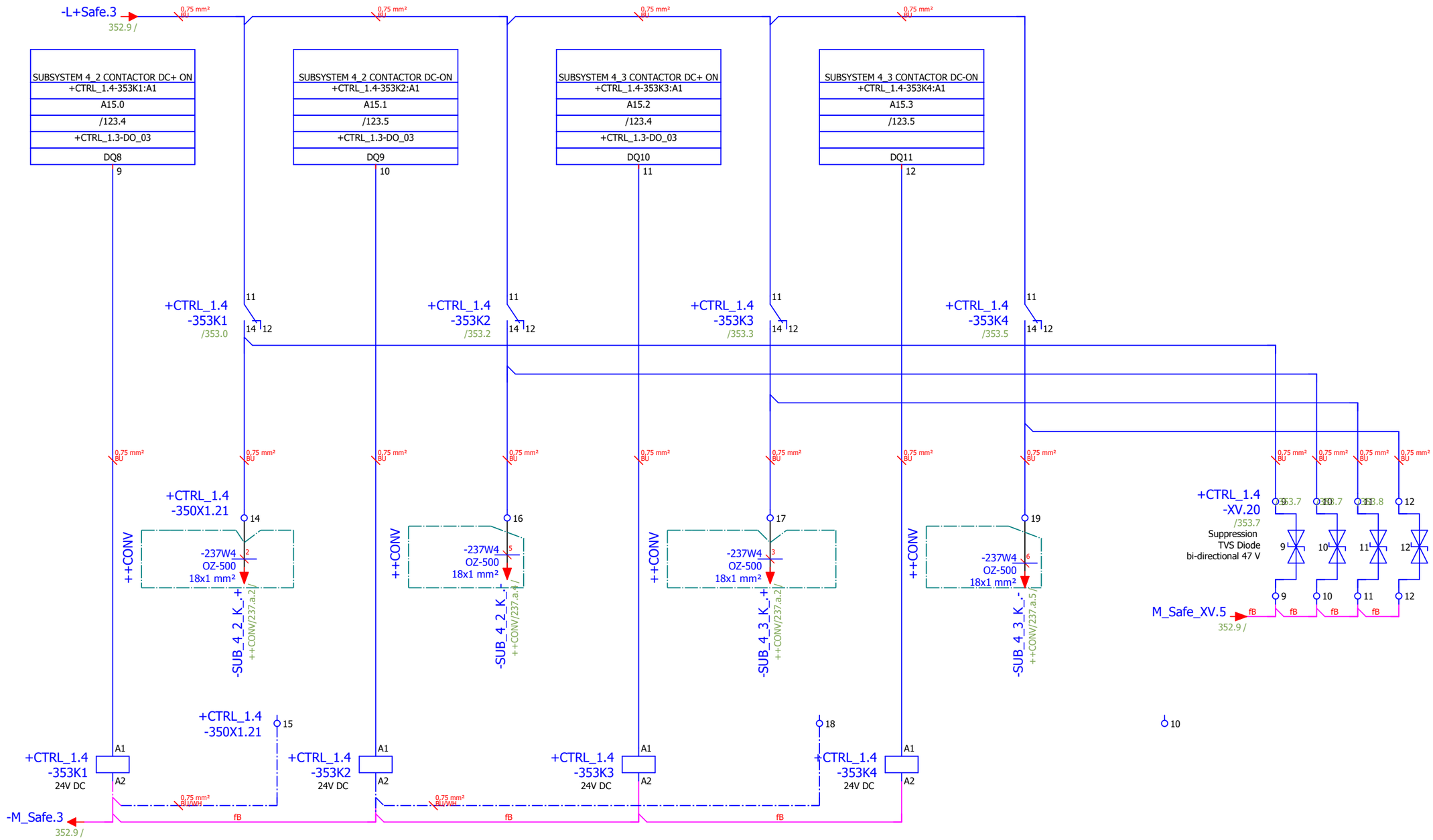
SUBSYSTEM 4_1
CONTACTOR DC+
ON

SUBSYSTEM 4_1
CONTACTOR DC-
ON

previous page:
351

next page:
353

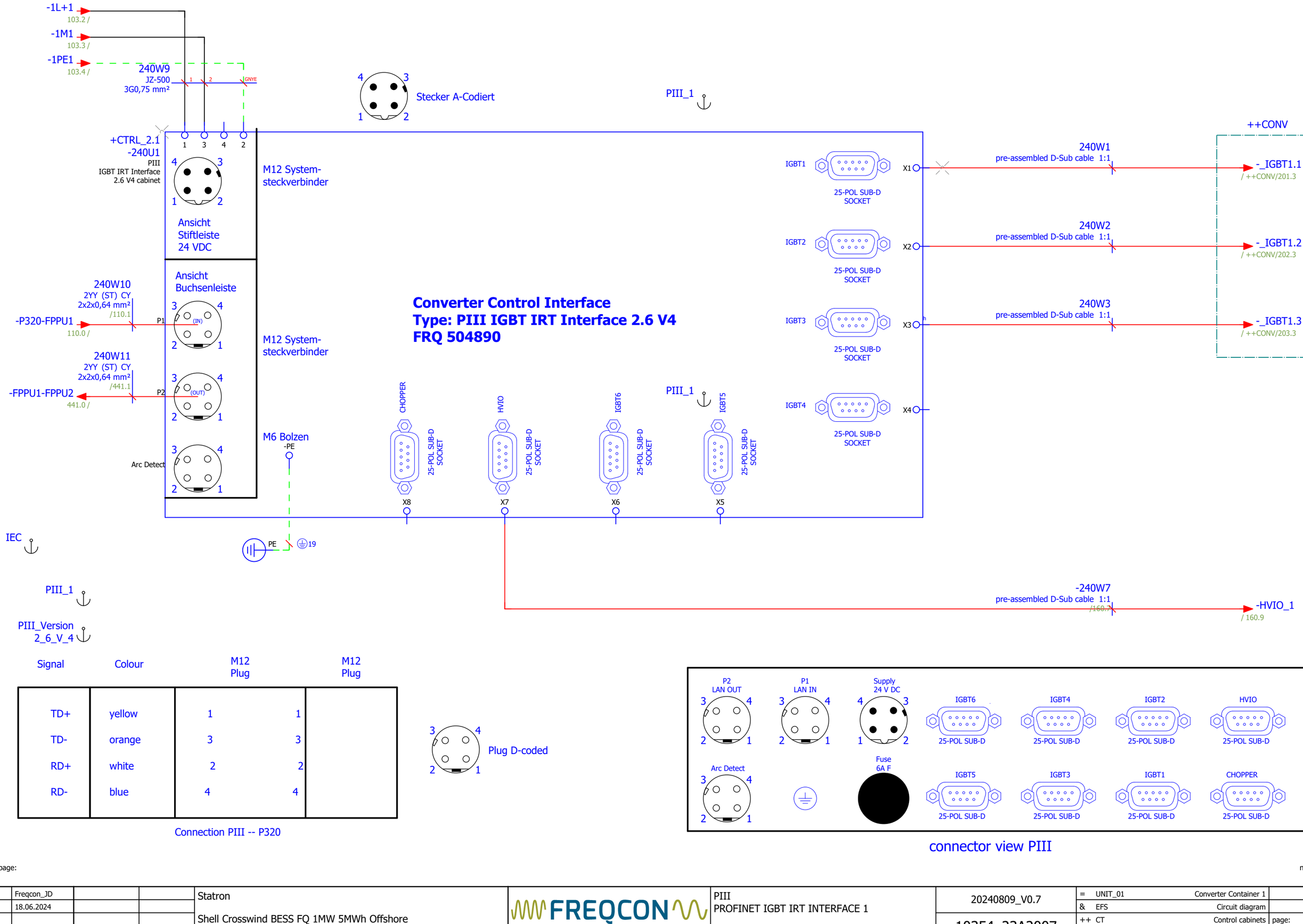
Editor	Freqcon_DG			Statron	FREQCON	OUTPUTS DC CONTACTORS SUBSYSTEM 4_1	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	29.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 352
Date								+	total: 482



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Editor	Freqcon_DG			Statron	FREQCON	OUTPUTS DC CONTACTORS SUBSYSTEM 4_2 - 4_3	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	29.07.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 353
Date								+	total: 482



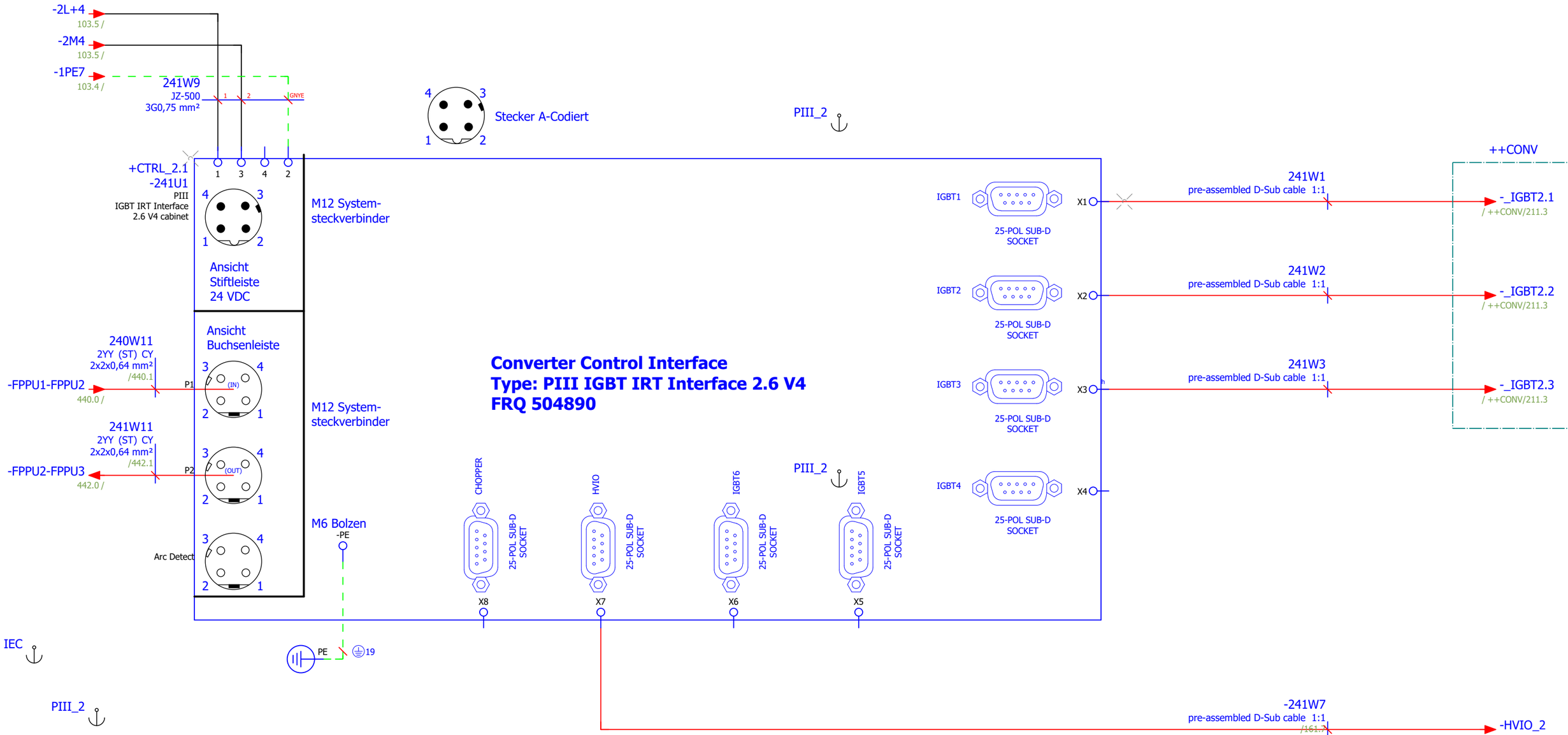
Signal	Colour	M12 Plug	M12 Plug
TD+	yellow	1	1
TD-	orange	3	3
RD+	white	2	2
RD-	blue	4	4

Connection PIII -- P320

connector view PIII

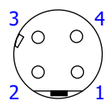
previous page: 353
next page: 441

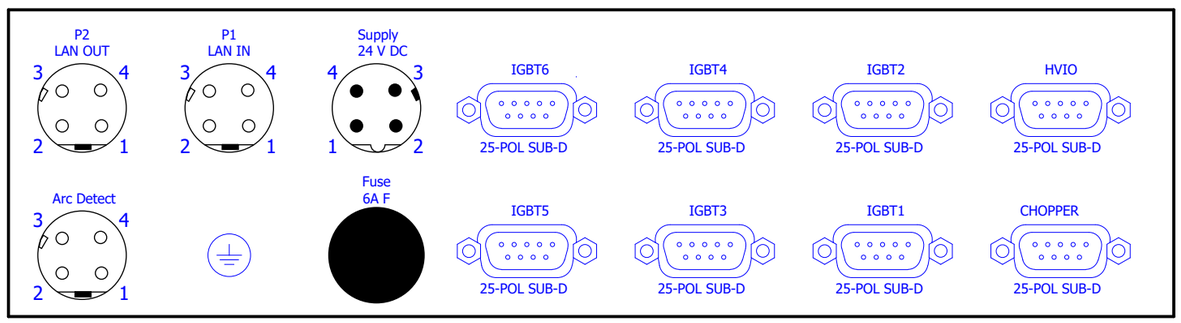
Editor	Freqcon_JD			Statron	FREQCON	PIII PROFINET IGBT IRT INTERFACE 1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 440
Date								+ total: 482



Signal	Colour	M12 Plug	M12 Plug
TD+	yellow	1	1
TD-	orange	3	3
RD+	white	2	2
RD-	blue	4	4

Connection PIII -- P320





connector view PIII

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next page: 442

Editor	Freqcon_JD			Statron	FREQCON	PIII PROFINET IGBT IRT INTERFACE 2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 441
Date								+ total: 482

-2L+2
103.4 /
-2M2
103.5 /
-1PE5
103.4 /
242W9
JZ-500
3G0,75 mm²
1 2 GNYE

+CTRL_2.1
-242U1
PIII
IGBT IRT Interface
2.6 V4 cabinet
1 3 4 2
Ansicht
Stiftleiste
24 VDC

M12 System-
steckverbinder

Ansicht
Buchsenleiste

241W11
2YY (ST) CY
2x2x0,64 mm²
/441.1
-FPPU2-FPPU3
441.0 /
P1 (IN)

242W11
2YY (ST) CY
2x2x0,64 mm²
/443.1
-FPPU3-FPPU4
443.0 /
P2 (OUT)

Arc Detect

M12 System-
steckverbinder

M6 Bolzen
-PE

PE
19

IEC

PIII_3

PIII_Version
2_6_V_4

Stecker A-Codiert

PIII_3

PIII_2

CHOPPER
HVIO
IGBT6
IGBT5
25-POL SUB-D SOCKET
X8 X7 X6 X5

IGBT1 X1
IGBT2 X2
IGBT3 X3
IGBT4 X4
25-POL SUB-D SOCKET

242W1
pre-assembled D-Sub cable 1:1
-_IGBT3.1
/ ++CONV/207.3

242W2
pre-assembled D-Sub cable 1:1
-_IGBT3.2
/ ++CONV/207.3

242W3
pre-assembled D-Sub cable 1:1
-_IGBT3.3
/ ++CONV/207.3

++CONV

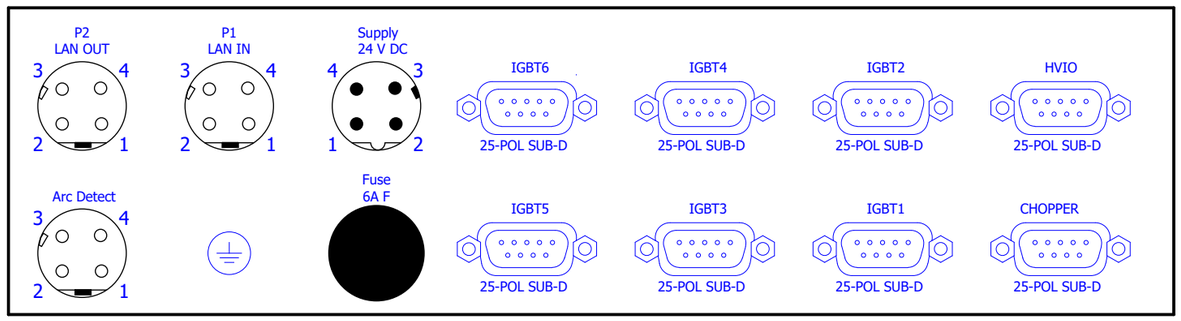
-242W7
pre-assembled D-Sub cable 1:1
/163.7
-HVIO_3
/ 163.9

Converter Control Interface
Type: PIII IGBT IRT Interface 2.6 V4
FRQ 504890

Signal	Colour	M12 Plug	M12 Plug
TD+	yellow	1	1
TD-	orange	3	3
RD+	white	2	2
RD-	blue	4	4

Connection PIII -- P320

Plug D-coded



connector view PIII

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next page: 443

Editor	Freqcon_JD			Statron	FREQCON	PIII PROFINET IGBT IRT INTERFACE 3	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 442
Date								+		total: 482

-2L+1
103.4 /
-2M3
103.5 /
-1PE8
103.4 /
243W9
JZ-500
3G0,75 mm²
1 2 GNYE

+CTRL_2.1
-243U1
PIII
IGBT IRT Interface
2.6 V4 cabinet
1 3 4 2
Ansicht
Stiftleiste
24 VDC

M12 System-
steckverbinder

Ansicht
Buchsenleiste

242W11
2YY (ST) CY
2x2x0,64 mm²
/442.1
-FPPU3-FPPU4
442.0 /
P1 (IN)
P2 (OUT)
Arc Detect

M12 System-
steckverbinder

M6 Bolzen
-PE
PE
19

Stecker A-Codiert

PIII_2

Converter Control Interface
Type: PIII IGBT IRT Interface 2.6 V4
FRQ 504890

PIII_2

CHOPPER
HVIO
IGBT6
IGBT5
25-POL SUB-D SOCKET
X8 X7 X6 X5

IGBT1
IGBT2
IGBT3
IGBT4
25-POL SUB-D SOCKET
X1 X2 X3 X4

243W1
pre-assembled D-Sub cable 1:1
-_IGBT4.1
/ ++CONV/217.3

243W2
pre-assembled D-Sub cable 1:1
-_IGBT4.2
/ ++CONV/217.3

243W3
pre-assembled D-Sub cable 1:1
-_IGBT4.3
/ ++CONV/217.3

++CONV

IEC

PIII_4

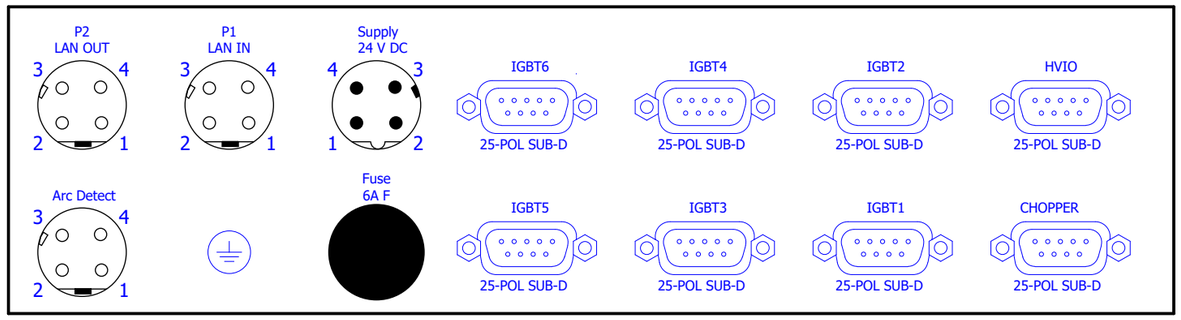
PIII_Version
2_6_V_4

-243W7
pre-assembled D-Sub cable 1:1
/164.7
-HVIO_4
/ 164.9

Signal	Colour	M12 Plug	M12 Plug
TD+	yellow	1	1
TD-	orange	3	3
RD+	white	2	2
RD-	blue	4	4

Connection PIII -- P320

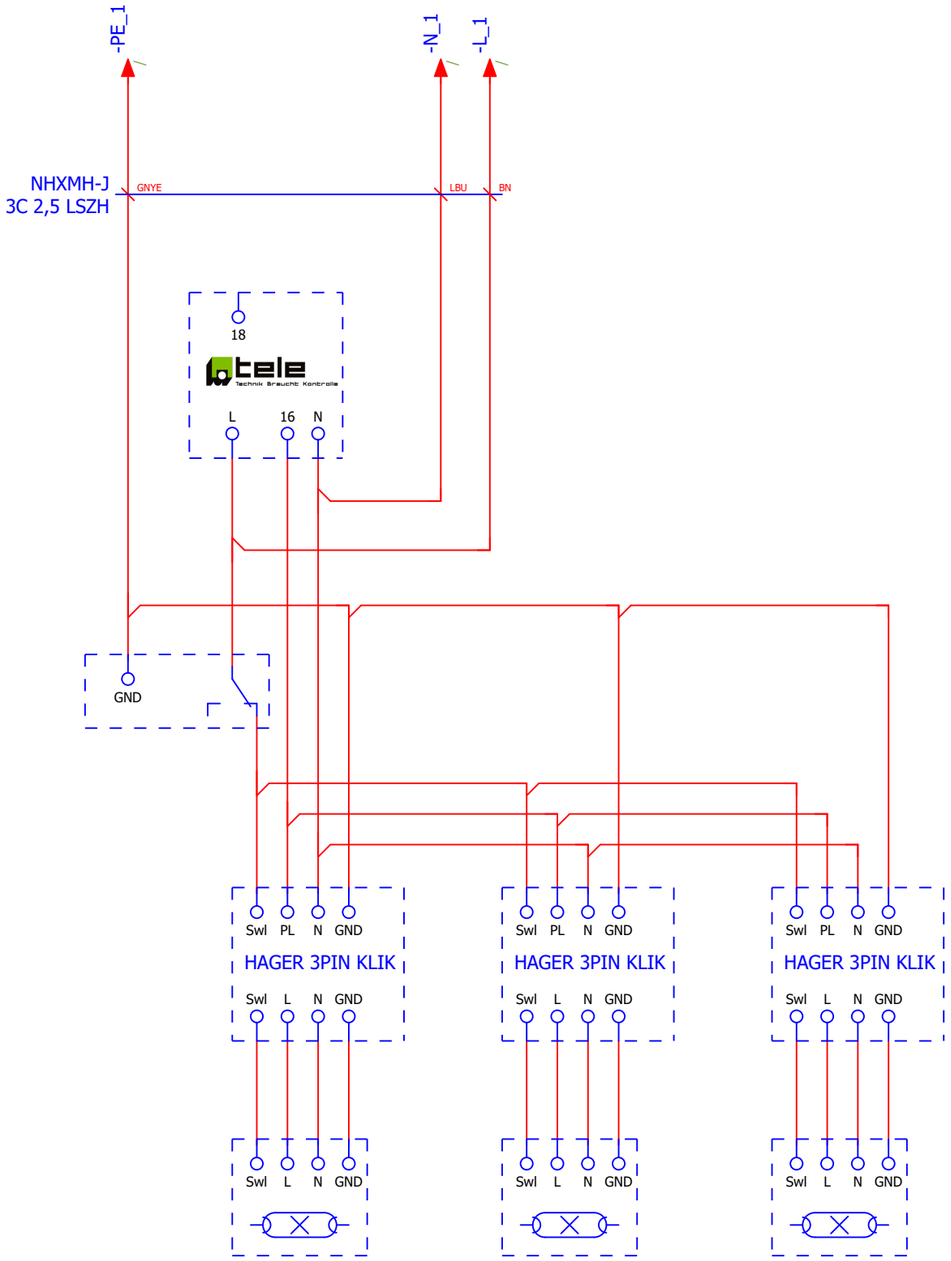
Plug D-coded

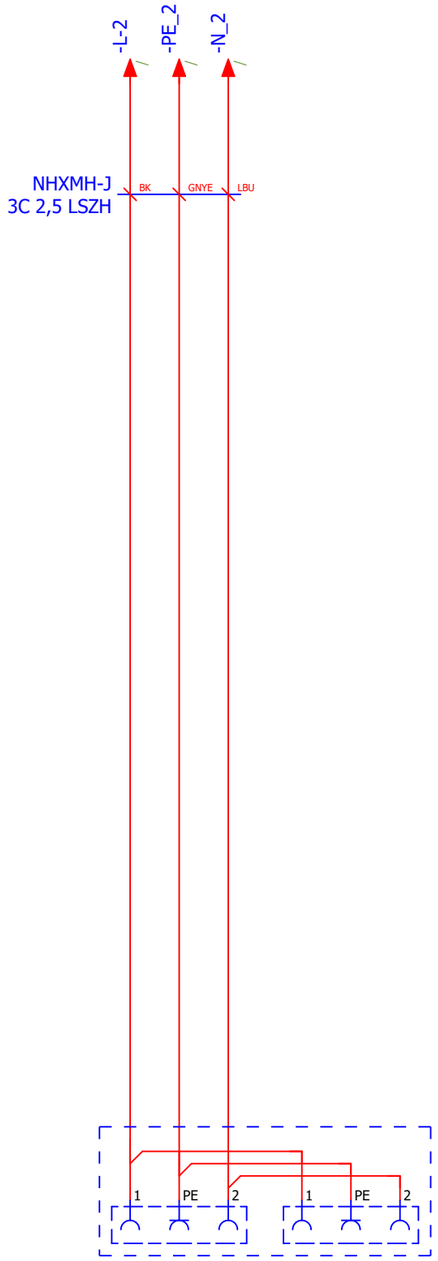


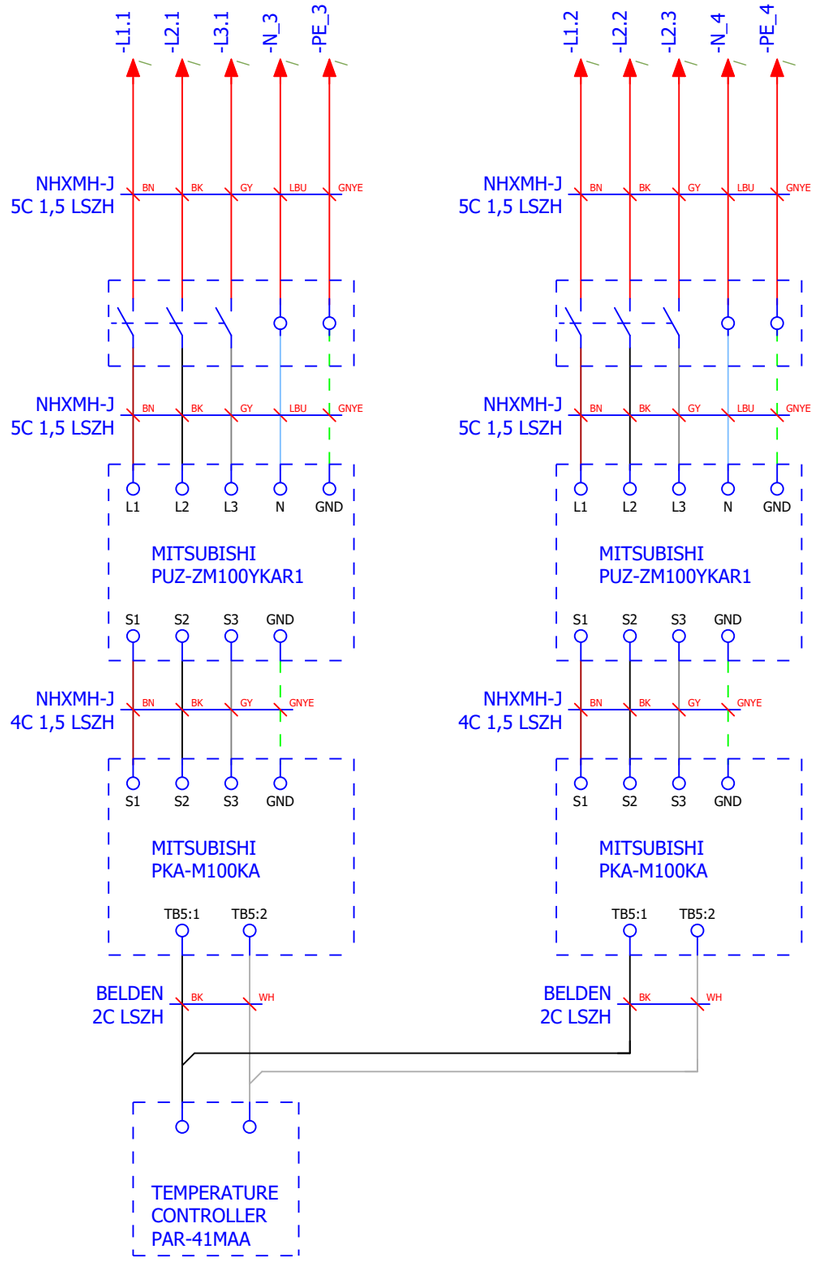
connector view PIII

previous page: 442
next page: ++Container/190

Editor	Freqcon_JD			Statron	FREQCON	PIII PROFINET IGBT IRT INTERFACE 4	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 443
Date								+		total: 482







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++CT/443

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&EPC++TRA/1

Editor	Freqcon_JD			Statron	FREQCON	CONTAINER INSTALLATION	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 190
Date								+	total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-18T1 &EFS/18.2	1	TMC Transformer 3150kVA-6300V/620V-50Hz-AL-IP00		TMC Transformers	508555	
-18W5 &EFS/18.3	1	Anschlussschiene;100x370mm;Zeichnung 501153B	501153	Freqcon GmbH	501153	

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&EFS++Container/190

next page:
++CONV/1

Editor	Freqcon_JD			Statron	FREQCON	PARTS LIST	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EPC Parts List
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ TRA medium voltage transformer page: 1
Date								+ total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-18Q1 &EFS++TRA/18.7	1	Switch-disconnector S6000, AC 600A at 690V AC (AC21B), size 2, 4-pole, to attach to the mounting plate	S6-08003NDO	Pronutec GmbH	10172	
-18Q1 &EFS++TRA/18.7	1	Auxiliary contacts S6000 SIZE 2	D5LAU01	Pronutec GmbH	503044	
-18Q1 &EFS++TRA/18.7	1	Direct handle S6000 SIZE 2	DS-LI21	Pronutec GmbH	503039	

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++TRA/1

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+CON/1

Editor	Freqcon_JD			Statron	FREQCON	PARTS LIST	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EPC Parts List	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 1
Date								+	total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-147B2 &EFS++CT+/147.7	1	Temperature sensor PT100, cable 3m Silicon	H2-012030-SDS	Fühler Direkt	500648	
-201Q1 &EFS+/201.3	1	*** VX BG PowerStack 1*1000A*** with SkiiP 2414 GB12E4-4DUW	52872	Freqcon GmbH	52872	
-201Q1 &EFS+/201.3	1	D SUB ADAPTER, PLUG-RECEPTACLE, 25-POL, L-COM DG9025MF1	506157	Freqcon GmbH	506157	
-201Q1 &EFS+/201.3	1	SKiiP 2414 GB17E4-4DUW, 1*1000 A	20603236	Semikron	501558	X
-201Q1 &EFS+/201.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-201Q1 &EFS+/201.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-201Q1 &EFS+/201.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X
-201Q1-C &EFS+/201.5	4	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-201Q1-C &EFS+/201.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X
-201Q1-C &EFS+/201.6;&EFS+/201.7	3	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-201Q1-C &EFS+/201.6;&EFS+/201.7	2	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-202Q1 &EFS+/202.3	1	*** VX BG PowerStack 1*1000A*** with SkiiP 2414 GB12E4-4DUW	52872	Freqcon GmbH	52872	
-202Q1 &EFS+/202.3	1	D SUB ADAPTER, PLUG-RECEPTACLE, 25-POL, L-COM DG9025MF1	506157	Freqcon GmbH	506157	
-202Q1 &EFS+/202.3	1	SKiiP 2414 GB17E4-4DUW, 1*1000 A	20603236	Semikron	501558	X
-202Q1 &EFS+/202.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-202Q1 &EFS+/202.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-202Q1 &EFS+/202.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X
-202Q1-C &EFS+/202.5	4	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-202Q1-C &EFS+/202.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-202Q1-C &EFS+/202.6;&EFS+/202.7	3	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-202Q1-C &EFS+/202.6;&EFS+/202.7	2	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-203Q1 &EFS+/203.3	1	*** VX BG PowerStack 1*1000A*** with SkiiP 2414 GB12E4-4DUW	52872	Freqcon GmbH	52872	
-203Q1 &EFS+/203.3	1	D SUB ADAPTER, PLUG-RECEPTACLE, 25-POL, L-COM DG9025MF1	506157	Freqcon GmbH	506157	
-203Q1 &EFS+/203.3	1	SKiiP 2414 GB17E4-4DUW, 1*1000 A	20603236	Semikron	501558	X
-203Q1 &EFS+/203.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-203Q1 &EFS+/203.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-203Q1 &EFS+/203.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X
-203Q1-C &EFS+/203.5	4	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-203Q1-C &EFS+/203.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X
-203Q1-C &EFS+/203.6;&EFS+/203.7	3	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-203Q1-C &EFS+/203.6;&EFS+/203.7	2	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-207Q1 &EFS+/207.3	1	*** VX BG PowerStack 3*250A***	52867	Freqcon GmbH	52867	
-207Q1 &EFS+/207.3	1	SKiiP 603 GD172-3DK1470	20452470	Semikron	501559	X
-207Q1 &EFS+/207.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-207Q1 &EFS+/207.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-207Q1 &EFS+/207.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X
-207Q1-C &EFS+/207.5	3	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-207Q1-C &EFS+/207.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-207Q1-C &EFS+/207.6;&EFS+/207.7	2	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-207Q1-C &EFS+/207.7	1	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-207Q1-U1 &EFS+/207.3	1	SKiiP 3 I Adapter	FRQ-M00080-1	Freqcon GmbH	500426	
-211Q1 &EFS+/211.3	1	*** VX BG PowerStack 3*250A***	52867	Freqcon GmbH	52867	
-211Q1 &EFS+/211.3	1	SKiiP 603 GD172-3DK1470	20452470	Semikron	501559	X
-211Q1 &EFS+/211.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-211Q1 &EFS+/211.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-211Q1 &EFS+/211.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X
-211Q1-C &EFS+/211.5	3	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-211Q1-C &EFS+/211.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X
-211Q1-C &EFS+/211.6;&EFS+/211.7	2	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-211Q1-C &EFS+/211.7	1	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-211Q1-U1 &EFS+/211.3	1	SKiiP 3 I Adapter	FRQ-M00080-1	Freqcon GmbH	500426	
-217Q1 &EFS+/217.3	1	*** VX BG PowerStack 3*250A***	52867	Freqcon GmbH	52867	
-217Q1 &EFS+/217.3	1	SKiiP 603 GD172-3DK1470	20452470	Semikron	501559	X
-217Q1 &EFS+/217.3	1	DC Adapter 3.3535 (EN-AW 5754) Alu	51524	Freqcon GmbH	51524	
-217Q1 &EFS+/217.3	2	Mini feed-through terminal block, Push in, MPT 1,5/S	3248100	Phoenix Contact	501024	X
-217Q1 &EFS+/217.3	2	End clamp CLIPFIX 15	3022263	Phoenix Contact	500935	X
-217Q1 &EFS+/217.3	1	End cover D-MPT 1,5/S	3248120	Phoenix Contact	500899	X

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-217Q1-C &EFS+/217.5	3	Snubber capacitor 470nF 5% 1500V Version for SkiiP module (SL)	KPF-271 REV-01	Alcon Electronics Pvt. Ltd.	501406	X
-217Q1-C &EFS+/217.6	1	Film Capacitor 1500µF 700VDC, with PT100 temperature sensor	1025314-54097	FTCap GmbH	504740	X
-217Q1-C &EFS+/217.6;&EFS+/217.7	2	Film Capacitor 1500µF 700VDC	1025173-54097	FTCap GmbH	500662	X
-217Q1-C &EFS+/217.7	1	Film Capacitor 1500µF 700VDC EC1500µ700d116165KF6_1	1025170-54097	FTCap GmbH	500661	X
-217Q1-U1 &EFS+/217.3	1	SKiiP 3 I Adapter	FRQ-M00080-1	Freqcon GmbH	500426	
-260B1 &EFS+/260.3	1	Optical smoke detector 12V, with alarm relais	130-60-457	ABUS Security-Center GmbH & Co. KG	500713	X
-279M1 &EFS+/279.1	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-279M2 &EFS+/279.2	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-279M3 &EFS+/279.3	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-279M4 &EFS+/279.5	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-279M5 &EFS+/279.6	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-N &EFS+/99.5	2	Busbar holder for busbars 12x 5 (10)-30x 5 (10) and 6x 6 mm	8US1923-1AA01	Siemens	501271	X

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+IND/1

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-201L1 &EFS+/201.1	1	*** VX Single phase line Inductor, I= 1x 1000 A LN= 0,2mH ***	53053	Freqcon GmbH	53053	
-201L1 &EFS+/201.1	1	Inductor, 1050A, 0.2mH, 690V, 50/60Hz, 1-phas, 1x PT100, water-cooled	36231	Trafotek Oy	500889	X
-201U1 &EFS+/201.0	1	EMI Suppresion CAP DC	FRQ-M00110	Freqcon GmbH	500449	
-202L1 &EFS+/202.1	1	*** VX Single phase line Inductor, I= 1x 1000 A LN= 0,2mH ***	53053	Freqcon GmbH	53053	
-202L1 &EFS+/202.1	1	Inductor, 1050A, 0.2mH, 690V, 50/60Hz, 1-phas, 1x PT100, water-cooled	36231	Trafotek Oy	500889	X
-202U1 &EFS+/202.0	1	EMI Suppresion CAP DC	FRQ-M00110	Freqcon GmbH	500449	
-203L1 &EFS+/203.1	1	*** VX Single phase line Inductor, I= 1x 1000 A LN= 0,2mH ***	53053	Freqcon GmbH	53053	
-203L1 &EFS+/203.1	1	Inductor, 1050A, 0.2mH, 690V, 50/60Hz, 1-phas, 1x PT100, water-cooled	36231	Trafotek Oy	500889	X
-203U1 &EFS+/203.0	1	EMI Suppresion CAP DC	FRQ-M00110	Freqcon GmbH	500449	
-207L1 &EFS+/207.1	1	*** VX Trible phase line Inductor, I= 3x 250A LN= 0,6mH ***	53046	Freqcon GmbH	53046	
-207L1 &EFS+/207.1	1	3x Single phase line reactor, UN=690 V, 50/60 Hz, LN=0,6 mH, I=263,0 A	37106B	Trafotek Oy	501204	X
-211L1 &EFS+/211.1	1	*** VX Trible phase line Inductor, I= 3x 250A LN= 0,6mH ***	53046	Freqcon GmbH	53046	
-211L1 &EFS+/211.1	1	3x Single phase line reactor, UN=690 V, 50/60 Hz, LN=0,6 mH, I=263,0 A	37106B	Trafotek Oy	501204	X
-217L1 &EFS+/217.1	1	*** VX Trible phase line Inductor, I= 3x 250A LN= 0,6mH ***	53046	Freqcon GmbH	53046	
-217L1 &EFS+/217.1	1	3x Single phase line reactor, UN=690 V, 50/60 Hz, LN=0,6 mH, I=263,0 A	37106B	Trafotek Oy	501204	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-80Q1 &EFS+/80.0	1	*** VX BG Circuit Breaker IEC 1000 A ***	52955	Freqcon GmbH	52955	
-80Q1 &EFS+/80.1	1	Circuit breaker 3WL1112, 1250A, 42kA 690V, size 1, 3-pole, IEC, ETU15B, withdrawable	3WL1112-2BB36-1BJ2-ZA08+K07+M06+M21+R10	Siemens	501430	X
-83U1 &EFS+/83.2	1	*** VX BG AC Capacitor Bank 3 * 600µF ***	52918	Freqcon GmbH	52918	
-83U1-C1 &EFS+/83.4	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C2 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C3 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C4 &EFS+/83.6	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C7 &EFS+/83.4	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C8 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C9 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C10 &EFS+/83.6	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C13 &EFS+/83.4	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C14 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C15 &EFS+/83.5	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-83U1-C16 &EFS+/83.6	1	CAPACITORS MKP AC B32362 150µF 680V AC / 480V rms	B32362A4157J080	EPCOS AG	500663	X
-148B3 &EFS++CT+/148.5	1	Temperature sensor PT100, cable 6m Silicon	H2-012060-SDS	Fühler Direkt	500649	
-227U1 &EFS+/227.0	1	*** VX BG DC switch and Fuse 3*250A 1000V***	52882	Freqcon GmbH	52882	
-227U1-C1 &EFS+/227.1	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-227U1-C7 &EFS+/227.3	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-227U1-C13 &EFS+/227.7	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-227U1-F0 &EFS+/227.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F1 &EFS+/227.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F1 &EFS+/227.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F1 &EFS+/227.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-227U1-F2 &EFS+/227.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F2 &EFS+/227.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F2 &EFS+/227.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-227U1-F3 &EFS+/227.1	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F3 &EFS+/227.1	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F3 &EFS+/227.1	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-227U1-F4 &EFS+/227.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F4 &EFS+/227.2	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F5 &EFS+/227.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F5 &EFS+/227.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F5 &EFS+/227.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-227U1-F6 &EFS+/227.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F6 &EFS+/227.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F6 &EFS+/227.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-227U1-F7 &EFS+/227.3	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F7 &EFS+/227.3	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F8 &EFS+/227.4	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F8 &EFS+/227.4	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F9 &EFS+/227.6	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F9 &EFS+/227.6	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F9 &EFS+/227.6	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-227U1-F10 &EFS+/227.7	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-227U1-F10 &EFS+/227.7	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-227U1-F10 &EFS+/227.7	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-227U1-F11 &EFS+/227.6	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F11 &EFS+/227.6	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F12 &EFS+/227.8	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-227U1-F12 &EFS+/227.8	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-227U1-F12 &EFS+/227.8	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-227U1-K1 &EFS+/227.a.1	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-227U1-K2 &EFS+/227.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-227U1-K3 &EFS+/227.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-227U1-K7 &EFS+/227.a.3	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-227U1-K8 &EFS+/227.a.4	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-227U1-K9 &EFS+/227.a.5	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-227U1-U1 &EFS+/227.4	1	EMI Suppresion CAP L1-L3; N; DC + & -	FRQ-M00111	Freqcon GmbH	500450	X
-227U1-X3.1 &EFS+/227.a.0;&EFS+/227.a.9	0					
-227U1-X3.1 &EFS+/227.a.1...&EFS+/227.a.9	17	Feed-through terminal block Push-in PT 2,5/1P	3210033	Phoenix Contact	501390	X
-227U1-X3.1 &EFS+/227.a.1	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-L	3210062	Phoenix Contact	504126	X
-227U1-X3.1 &EFS+/227.a.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	X
-227U1-X3.1 &EFS+/227.a.1;&EFS+/227.a.9	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-227U1-X3.1 &EFS+/227.a.1;&EFS+/227.a.9	2	Latching PR	3040559	Phoenix Contact	504066	X
-227U1-X3.1 &EFS+/227.a.2...&EFS+/227.a.9	15	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-M	3210091	Phoenix Contact	504129	X
-227U1-X3.1 &EFS+/227.a.9	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-R	3210127	Phoenix Contact	10044	X
-227U1-X3.2 &EFS+/227.a.0	0					
-227U1-X3.2 &EFS+/227.a.1...&EFS+/227.a.7	13	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-227U1-X3.2 &EFS+/227.a.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-227U1-X3.2 &EFS+/227.a.1;&EFS+/227.a.7	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-227U1-X3.2 &EFS+/227.a.1;&EFS+/227.a.5	2	Plug-in bridge FBS 10-3,5	3213056	Phoenix Contact	501171	X
-231U1 &EFS+/231.0	1	*** VX BG DC switch and Fuse 3*250A 1000V***	52882	Freqcon GmbH	52882	
-231U1-C1 &EFS+/231.1	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-231U1-C7 &EFS+/231.3	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-231U1-C13 &EFS+/231.7	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-231U1-F0 &EFS+/231.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F1 &EFS+/231.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F1 &EFS+/231.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F1 &EFS+/231.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-231U1-F2 &EFS+/231.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F2 &EFS+/231.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F2 &EFS+/231.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-231U1-F3 &EFS+/231.1	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F3 &EFS+/231.1	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F3 &EFS+/231.1	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-231U1-F4 &EFS+/231.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F4 &EFS+/231.2	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F5 &EFS+/231.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F5 &EFS+/231.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F5 &EFS+/231.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-231U1-F6 &EFS+/231.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F6 &EFS+/231.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F6 &EFS+/231.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-231U1-F7 &EFS+/231.3	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F7 &EFS+/231.3	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F8 &EFS+/231.4	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F8 &EFS+/231.4	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F9 &EFS+/231.6	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F9 &EFS+/231.6	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F9 &EFS+/231.6	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-231U1-F10 &EFS+/231.7	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-231U1-F10 &EFS+/231.7	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-231U1-F10 &EFS+/231.7	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-231U1-F11 &EFS+/231.6	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F11 &EFS+/231.6	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F12 &EFS+/231.8	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-231U1-F12 &EFS+/231.8	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-231U1-F12 &EFS+/231.8	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-231U1-K1 &EFS+/231.a.1	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-231U1-K2 &EFS+/231.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-231U1-K3 &EFS+/231.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-231U1-K7 &EFS+/231.a.3	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-231U1-K8 &EFS+/231.a.4	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-231U1-K9 &EFS+/231.a.5	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-231U1-U1 &EFS+/231.4	1	EMI Suppresion CAP L1-L3; N; DC + & -	FRQ-M00111	Freqcon GmbH	500450	X
-231U1-X3.1 &EFS+/231.a.0;&EFS+/231.a.9	0					
-231U1-X3.1 &EFS+/231.a.1...&EFS+/231.a.9	17	Feed-through terminal block Push-in PT 2,5/1P	3210033	Phoenix Contact	501390	X
-231U1-X3.1 &EFS+/231.a.1	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-L	3210062	Phoenix Contact	504126	X
-231U1-X3.1 &EFS+/231.a.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	X
-231U1-X3.1 &EFS+/231.a.1;&EFS+/231.a.9	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-231U1-X3.1 &EFS+/231.a.1;&EFS+/231.a.9	2	Latching PR	3040559	Phoenix Contact	504066	X
-231U1-X3.1 &EFS+/231.a.2...&EFS+/231.a.9	15	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-M	3210091	Phoenix Contact	504129	X
-231U1-X3.1 &EFS+/231.a.9	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-R	3210127	Phoenix Contact	10044	X
-231U1-X3.2 &EFS+/231.a.0	0					
-231U1-X3.2 &EFS+/231.a.1...&EFS+/231.a.7	13	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-231U1-X3.2 &EFS+/231.a.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-231U1-X3.2 &EFS+/231.a.1;&EFS+/231.a.7	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-231U1-X3.2 &EFS+/231.a.1;&EFS+/231.a.5	2	Plug-in bridge FBS 10-3,5	3213056	Phoenix Contact	501171	X
-237U1 &EFS+/237.0	1	*** VX BG DC switch and Fuse 3*250A 1000V***	52882	Freqcon GmbH	52882	
-237U1-C1 &EFS+/237.1	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-237U1-C7 &EFS+/237.3	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X

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Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-237U1-C13 &EFS+/237.7	1	CAPACITORS MKP DC B2562 340µF 1320V DC	B25620C1347K321	EPCOS AG	501405	X
-237U1-F0 &EFS+/237.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F1 &EFS+/237.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F1 &EFS+/237.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F1 &EFS+/237.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-237U1-F2 &EFS+/237.1	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F2 &EFS+/237.1	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F2 &EFS+/237.1	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-237U1-F3 &EFS+/237.1	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F3 &EFS+/237.1	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F3 &EFS+/237.1	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-237U1-F4 &EFS+/237.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F4 &EFS+/237.2	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F5 &EFS+/237.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F5 &EFS+/237.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F5 &EFS+/237.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-237U1-F6 &EFS+/237.3	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F6 &EFS+/237.3	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F6 &EFS+/237.3	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-237U1-F7 &EFS+/237.3	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F7 &EFS+/237.3	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F8 &EFS+/237.4	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F8 &EFS+/237.4	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F9 &EFS+/237.6	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F9 &EFS+/237.6	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F9 &EFS+/237.6	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-237U1-F10 &EFS+/237.7	1	HLS Fuse 1250V/400A Size 1KN/110	170M4243	Gemballa Electronics	501537	X
-237U1-F10 &EFS+/237.7	1	Fuse base Bussmann 1250A, 1400V, 110mm center distance, UR 43653	170H3006	Gemballa Electronics	501536	X
-237U1-F10 &EFS+/237.7	1	Microswitch 250V/2A Switch K1	170H0069	Gemballa Electronics	501455	X
-237U1-F11 &EFS+/237.6	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F11 &EFS+/237.6	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F12 &EFS+/237.8	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	X
-237U1-F12 &EFS+/237.8	1	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-237U1-F12 &EFS+/237.8	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-237U1-K1 &EFS+/237.a.1	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-237U1-K2 &EFS+/237.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-237U1-K3 &EFS+/237.a.2	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-237U1-K7 &EFS+/237.a.3	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-237U1-K8 &EFS+/237.a.4	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-237U1-K9 &EFS+/237.a.5	1	HX22 CAB 1500V, 300A, SPST-NO, 24Vdc	GIG/HX22CAB	GIGAVAC	509201	X
-237U1-U1 &EFS+/237.4	1	EMI Suppresion CAP L1-L3; N; DC + & -	FRQ-M00111	Freqcon GmbH	500450	X
-237U1-X3.1 &EFS+/237.a.0;&EFS+/237.a.9	0					
-237U1-X3.1 &EFS+/237.a.1...&EFS+/237.a.9	17	Feed-through terminal block Push-in PT 2,5/1P	3210033	Phoenix Contact	501390	X
-237U1-X3.1 &EFS+/237.a.1	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-L	3210062	Phoenix Contact	504126	X
-237U1-X3.1 &EFS+/237.a.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	X
-237U1-X3.1 &EFS+/237.a.1;&EFS+/237.a.9	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-237U1-X3.1 &EFS+/237.a.1;&EFS+/237.a.9	2	Latching PR	3040559	Phoenix Contact	504066	X
-237U1-X3.1 &EFS+/237.a.2...&EFS+/237.a.9	15	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-M	3210091	Phoenix Contact	504129	X
-237U1-X3.1 &EFS+/237.a.9	1	Plug Push-in, 1 Pol., 0,14 mm² - 4 mm², PP-H 2,5/1-R	3210127	Phoenix Contact	10044	X
-237U1-X3.2 &EFS+/237.a.0	0					
-237U1-X3.2 &EFS+/237.a.1...&EFS+/237.a.7	13	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-237U1-X3.2 &EFS+/237.a.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-237U1-X3.2 &EFS+/237.a.1;&EFS+/237.a.7	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-237U1-X3.2 &EFS+/237.a.1;&EFS+/237.a.5	2	Plug-in bridge FBS 10-3,5	3213056	Phoenix Contact	501171	X
-281M1 &EFS+/281.1	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-281M2 &EFS+/281.2	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X
-281M3 &EFS+/281.3	1	SK TopTherm fan-and-filter unit, 550/600 m³/h, 230 V, 1~, 50/60 Hz, 70W	3243100	Rittal	500596	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-78F1 &EFS+/78.6	1	Fuse switch disconnector 3NP1, 3-pole, NH00, 160 A, for mounting plate, flat terminal, Fuse monitoring: electromechanical	3NP11331CA11	Siemens	500738	
-78F1 &EFS+/78.6	3	Fuse link 690V AC, 100A, NH00, gL/gG, UL recognized, Bussmann	100NHG00B-690	Gemballa Electronics	501539	
-78F2 &EFS+/78.6	1	SURGE ARRESTER [Typ 1 + Typ 2] PP BC TNC 50-400/690	374504	LEUTRON GmbH	10055	
-78F3 &EFS+/78.7;&EFS+/78.8	3	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779	
-78F3 &EFS+/78.7;&EFS+/78.8	3	SITOR cylindrical fuse link, 10 x 38 mm, 20 A, aR, Un AC: 600 V, Un DC: 700 V, DC according to UL	3NC1020	Siemens	501545	
-78W1 &EFS+/78.3	1	*** BG connection rail 100x370 ***	53190	Freqcon GmbH	53190	
-78W2 &EFS+/78.3	0	*** BG connection rail 100x370 ***	53190	Freqcon GmbH	53190	
-78W3 &EFS+/78.3	0	*** BG connection rail 100x370 ***	53190	Freqcon GmbH	53190	
-78W4 &EFS+/78.3	1	*** VX BG PE + N busbar 50x380 - 600 MTS ***	53290	Freqcon GmbH	53290	
-78W5 &EFS+/78.2	1	*** BG connection rail 100x370 ***	50070	Freqcon GmbH	50070	
-227W10 &EFS+/227.1	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-227W11 &EFS+/227.1	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-227W12 &EFS+/227.4	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-227W13 &EFS+/227.4	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-227W14 &EFS+/227.7	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-227W15 &EFS+/227.7	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-228F1 &EFS+/228.0	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-228F2 &EFS+/228.4	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-228F3 &EFS+/228.7	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-231W10 &EFS+/231.1	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-231W11 &EFS+/231.1	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-231W12 &EFS+/231.4	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-231W13 &EFS+/231.4	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-231W14 &EFS+/231.7	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-231W15 &EFS+/231.7	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W10 &EFS+/237.1	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W11 &EFS+/237.1	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W12 &EFS+/237.4	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W13 &EFS+/237.4	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W14 &EFS+/237.7	1	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-237W15 &EFS+/237.7	0	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604	
-238F1 &EFS+/238a.0	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-238F2 &EFS+/238a.4	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-238F3 &EFS+/238a.7	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-238F4 &EFS+/238b.0	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-238F5 &EFS+/238b.4	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-238F6 &EFS+/238b.7	1	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130	
-X3.43	20	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-XT1 &EFS/136.0...&EFS/136.8	20	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-XT1 &EFS/136.0	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-XT1 &EFS/136.0	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XT1 &EFS/136.0	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	

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Date	02.07.2024							& EPC Parts List
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 1
Date								+ total: 482

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-84Q1 &EFS+/84.0	1	EMERGENCY STOP SWITCH	3LD2203-1TP53	Siemens	500810	X
-84Q1 &EFS+/84.0	1	Auxiliary switch	3LD9200-5B	Siemens	504922	X
-112A1 &EFS+/112.2	1	Panel PC 15,6" PPC-JWS156-J4125	PPC-JWS156-I/C-J4125/8GB/128GBSSD/W10		508475	
-126S1 &EFS+/126.1	1	PUSHBUTTON, BLACK, 1 NO	3SU1100-0AB10-3BA0	Siemens	10026	X
-126S1 &EFS+/126.1	1	Marker carriers - CARRIER-EMP 22 (27X12,5)	0827446	Phoenix Contact	500751	X
-140H1 &EFS+/140.1	1	Complete device, round, indicator light RED	3SU1102-6AA20-3AA0	Siemens	10019	X
-140H1 &EFS+/140.1	1	Marker carriers - CARRIER-EMP 22 (27X12,5)	0827446	Phoenix Contact	500751	X
-140H2 &EFS+/140.2	1	Complete device, round, indicator light YELLOW	3SU1102-6AA30-3AA0	Siemens	10021	X
-140H2 &EFS+/140.2	1	Marker carriers - CARRIER-EMP 22 (27X12,5)	0827446	Phoenix Contact	500751	X
-140H3 &EFS+/140.3	1	Complete device, round, indicator light GREEN	3SU1102-6AA40-3AA0	Siemens	10023	X
-140H3 &EFS+/140.3	1	Marker carriers - CARRIER-EMP 22 (27X12,5)	0827446	Phoenix Contact	500751	X
-140H4 &EFS+/140.4	1	Complete device, round, indicator light GREEN	3SU1102-6AA40-3AA0	Siemens	10023	X
-140H4 &EFS+/140.4	1	Marker carriers - CARRIER-EMP 22 (27X12,5)	0827446	Phoenix Contact	500751	X
-278M1 &EFS+/278.1	1	SK TopTherm fan-and-filter unit, 230/250 m³/h, 230 V, 1~, 50/60 Hz, 40W	3241100	Rittal	500594	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-110U1 &EFS+/110.2	1	SIMOTION P320-4 BOX WITH INTEL CORE I3 PROZESSOR; 2 X 1,6 GHZ	6AU1320-4DE65-3AF0	Siemens	500789	
-110U1 &EFS+/110.2	1	Connector RJ45, 4 Pol., Profinet, VS-PN-RJ45-5-Q/IP20	1658435	Phoenix Contact	500806	X
-114A1 &EFS+/114.4	1	SIMATIC PN/PN Coupler	6ES7158-3AD10-0XA0	Siemens	10138	
-114A1 &EFS+/114.4	2	BA 2XRJ45	6ES7193-6AR00-0AA0	Siemens	505628	
-185R1 &EFS+/185.7	1	SK Enclosure heater, 800/870 W, 230 V, 1~, 50/60 Hz, WHD: 103x200x103 mm	3105400	Rittal	500621	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-84F1 &EFS+/84.6	1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070	
-84F2 &EFS+/84.0	1	CIRCUIT BREAKER 400V, 10KA, 3-POLE, C, 32A	5SY4332-7	Siemens	505272	X
-84F2 &EFS+/84.0	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-84K1 &EFS+/84.5	1	CONTACTOR RELAY, 3NO+1NC DC 24V, mit Diode integriert	3RH2131-2FB40	Siemens	501288	X
-101Q1 &EFS+/101.2	1	MOTOR PROTECTION S00, A-release 2.2...3.2 A, N-release 42 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1DA25	Siemens	501432	X
-101Q1 &EFS+/101.2	1	Cable connector size S00 Spring-type terminal	3RV2917-5AA00	Siemens	500797	X
-101Q1 &EFS+/101.2	1	3-phase busbar with infeed left for 2 circuit breakers Size S00 and S0	3RV2917-1A	Siemens	500799	X
-101Q1 &EFS+/101.2	1	3-phase busbar including extension connector for 3 circuit breakers Size S00 and S0	3RV2917-4B	Siemens	504254	X
-101T1 &EFS+/101.2	1	Power supply unit	2866404	Phoenix Contact	502745	X
-102G1 &EFS+/102.2	1	Uninterruptible power supply	2320241	Phoenix Contact	501836	X
-102G2 &EFS+/102.6	1	Energy storage UPS-BAT/VRLA/24DC/12AH	2320322	Phoenix Contact	501229	X
-103F1 &EFS+/103.2	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-103F2 &EFS+/103.4	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-103F3 &EFS+/103.6	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-103F4 &EFS+/103.8	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-103F5 &EFS+/103.9	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-111A1 &EFS+/111.0	1	Tree 8TX Metall - Unmanaged Switch - 8 Ports	58152	Murrelektronik	10287	
-113T1 &EFS+/113a.1	1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464	
-113T1 &EFS+/113a.1	1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-113T2 &EFS+/113b.1	1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464	
-113T2 &EFS+/113b.1	1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395	
-113U1 &EFS+/113a.3	1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791	
-113U2 &EFS+/113a.5	1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214	
-113U3 &EFS+/113b.3	1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791	
-113U4 &EFS+/113b.5	1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214	
-115A1 &EFS+/115.3	1	Router Ewon Cosy 131, 4G + VPN router, supply 24 VDC UMTS router	WEC6133G	Wachendorff Prozesstechnik GmbH & Co. KG	506838alt	
-120A1 &EFS+/120.1	1	SIMATIC ET 200SP, PROFINET Interface-Module, IM 155-6 PN ST, bundle of Server module + Busadapter	6ES7155-6AA01-0BN0	Siemens	501554	X
-134K1 &EFS+/134.8	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-134K1 &EFS+/134.8	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-135K1 &EFS+/135.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-135K1 &EFS+/135.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-135K2 &EFS+/135.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-135K2 &EFS+/135.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-135K3 &EFS+/135.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-135K3 &EFS+/135.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-135K4 &EFS+/135.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-135K4 &EFS+/135.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-135K5 &EFS+/135.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-135K5 &EFS+/135.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-136K7 &EFS+/136.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-136K8 &EFS+/136.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-136K9 &EFS+/136.8	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-137K1 &EFS+/137.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-137K1 &EFS+/137.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-137K2 &EFS+/137.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-137K2 &EFS+/137.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-137K3 &EFS+/137.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-137K3 &EFS+/137.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-137K4 &EFS+/137.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-137K4 &EFS+/137.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-138K1 &EFS+/138.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K1 &EFS+/138.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K2 &EFS+/138.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K2 &EFS+/138.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K3 &EFS+/138.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K3 &EFS+/138.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K4 &EFS+/138.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-138K4 &EFS+/138.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K5 &EFS+/138.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K5 &EFS+/138.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K6 &EFS+/138.6	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K6 &EFS+/138.6	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-138K7 &EFS+/138.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-138K7 &EFS+/138.7	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-139K1 &EFS+/139.1	1	AC Contactor 3RT2015, 7A, 3KW @AC-3, 400V, S00, 3-pole, 24VDC, 1NO, spring-type, integr.diode	3RT2015-2FB41	Siemens	501516	X
-139K2 &EFS+/139.2	1	AC Contactor 3RT2015, 7A, 3KW @AC-3, 400V, S00, 3-pole, 24VDC, 1NO, spring-type, integr.diode	3RT2015-2FB41	Siemens	501516	X
-139K3 &EFS+/139.3	1	AC Contactor 3RT2015, 7A, 3KW @AC-3, 400V, S00, 3-pole, 24VDC, 1NO, spring-type, integr.diode	3RT2015-2FB41	Siemens	501516	X
-150K1 &EFS+/150.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-150K1 &EFS+/150.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-150K2 &EFS+/150.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-150K2 &EFS+/150.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-150X1 &EFS+/150.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-150X1 &EFS+/150.1	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-150X1 &EFS+/150.2;&EFS+/150.4;&EFS+/151.1;&EFS+/151.4;&EFS+/151.6	5	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-151K1 &EFS+/151.0	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-151K1 &EFS+/151.0	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X

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-151K2 &EFS+/151.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-151K2 &EFS+/151.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-151K3 &EFS+/151.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-151K3 &EFS+/151.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-151K4 &EFS+/151.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-151K4 &EFS+/151.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-171K3 &EFS+/171.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-171K3 &EFS+/171.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-173K3 &EFS+/173.6	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-173K3 &EFS+/173.6	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	X
-181Q1 &EFS+/181.1	1	MOTOR PROTECTION S00, A-release 3.5...5 A, N-release 65 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1FA25	Siemens	500740	
-181Q1 &EFS+/181.1	1	Link module spring-type Electrical and mechanical for 3RV2011 and 3RT201	3RA2911-2AA00	Siemens	500845	
-181Q1 &EFS+/181.1	1	Cable connector size S00 Spring-type terminal	3RV2917-5AA00	Siemens	500797	
-181Q2 &EFS+/181.3	1	MOTOR PROTECTION S00, A-release 4.5...6.3 A, N-release 82 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1GA25	Siemens	500671	
-181Q2 &EFS+/181.3	1	Link module spring-type Electrical and mechanical for 3RV2011 and 3RT201	3RA2911-2AA00	Siemens	500845	
-181Q2 &EFS+/181.3	1	Cable connector size S00 Spring-type terminal	3RV2917-5AA00	Siemens	500797	
-182Q1 &EFS+/182.1	1	MOTOR PROTECTION S00, A-release 3.5...5 A, N-release 65 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1FA25	Siemens	500740	
-182Q1 &EFS+/182.1	1	Link module spring-type Electrical and mechanical for 3RV2011 and 3RT201	3RA2911-2AA00	Siemens	500845	
-182Q1 &EFS+/182.1	1	Cable connector size S00 Spring-type terminal	3RV2917-5AA00	Siemens	500797	

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-183F1 &EFS+/183.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	X
-183F1 &EFS+/183.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-183F1 &EFS+/183.1	1	Pin busbar touch-safe, 16 mm2 3x 1-phase+AUX, 1016 mm long	5ST3714	Siemens	503364	X
-183F1 &EFS+/183.1	2	End cap for pin busbars 2 - 3-phase	5ST3750	Siemens	503570	X
-183F2 &EFS+/183.3	1	CIRCUIT BREAKER 10KA 1POL C10	5SY4110-7	Siemens	500681	X
-183F2 &EFS+/183.3	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-185B1 &EFS+/185.6	1	Thermostat NC contact, -10 to 50 °C	8MR2170-1CA	Siemens	500816	X
-185F1 &EFS+/185.1	1	CIRCUIT BREAKER 10KA 1POL C10	5SY4110-7	Siemens	500681	X
-185F1 &EFS+/185.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-185F2 &EFS+/185.7	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	X
-185F2 &EFS+/185.7	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-186B1 &EFS+/186.6	1	Thermostat NO contact, -10 to 50 °C	8MR2170-1CB	Siemens	501577	X
-186K1 &EFS+/186.6	1	AC Contactor 3RT2015, 7A, 3KW @AC-3, 400V, S00, 3-pole, 24VDC, 1NO, spring-type, integr.diode	3RT2015-2FB41	Siemens	501516	X
-187F1 &EFS+/187.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C13	5SY4113-7	Siemens	504323	X
-187F1 &EFS+/187.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-187F2 &EFS+/187.4	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	X
-189K1 &EFS+/189.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	X
-190F1 &EFS+/190.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	X
-190F1 &EFS+/190.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-190F2 &EFS+/190.3	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	X
-190F2 &EFS+/190.3	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-190F3 &EFS+/190.5	1	RCBO elm, TYP A, 230V, 10KA, 1 Pol.+N, 30mA, C, 16A	5SU1354-7KK16	Siemens	500765	X
-190F3 &EFS+/190.5	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-190F3 &EFS+/190.5	1	Handle coupler for residual current miniature circuit breaker D=70 mm	5ST3805-1	Siemens	500608	X
-190X10 &EFS+/190.9	1	SCHUKO socket outlet 16 A according to DIN VDE 0620 for installation in distribution boards	5TE6800	Siemens	503215	X
-190XT1 &EFS+/190.0	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	X
-190XT1 &EFS+/190.0	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	X
-190XT1 &EFS+/190.1;&EFS+/190.3;&EFS+/190.5;&EFS+/190.7	4	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	X
-190XT1 &EFS+/190.1;&EFS+/190.3;&EFS+/190.5;&EFS+/190.7	4	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	X
-190XT1 &EFS+/190.1;&EFS+/190.5	3	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-190XT1 &EFS+/190.1;&EFS+/190.3;&EFS+/190.5;&EFS+/190.7	4	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	X
-191F1 &EFS+/191.1	1	CIRCUIT BREAKER 10KA 3POL C16	5SY4316-7	Siemens	503340	X
-191F1 &EFS+/191.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-191F2 &EFS+/191.3	1	CIRCUIT BREAKER 10KA 3POL C16	5SY4316-7	Siemens	503340	X
-191F2 &EFS+/191.3	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	X
-191XT1 &EFS+/191.1;&EFS+/191.3	6	Feed-through terminal block Push-in PT 6	3211813	Phoenix Contact	501388	X
-191XT1 &EFS+/191.1	1	End cover D-PT 6	3212044	Phoenix Contact	500503	X
-191XT1 &EFS+/191.1	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-191XT1 &EFS+/191.2;&EFS+/191.4	2	Feed-through terminal block Push-in PT 6 BU	3211819	Phoenix Contact	500585	X
-191XT1 &EFS+/191.2;&EFS+/191.4	2	Ground modular terminal block Push-in PT 6-PE	3211822	Phoenix Contact	500725	X
-195K1 &EFS+/195.3	1	Contactor relay 3RH2362, 24VDC, S00, 6NO, 2NC, spring-type, removable aux. switch	3RH2362-2BB40	Siemens	501287	X
-195K1 &EFS+/195.3	1	SURGE SUPPRESSOR, DIODE COMBINATION, DC 12...250V, F. CONT. RELAYS A. MOTOR CONT. SZ S00	3RT29161EH00	Siemens	500534	X
-195K2 &EFS+/195.4	1	Contactor relay 3RH2362, 24VDC, S00, 6NO, 2NC, spring-type, removable aux. switch	3RH2362-2BB40	Siemens	501287	X
-195K2 &EFS+/195.4	1	SURGE SUPPRESSOR, DIODE COMBINATION, DC 12...250V, F. CONT. RELAYS A. MOTOR CONT. SZ S00	3RT29161EH00	Siemens	500534	X
-195K3 &EFS+/195.1	1	SIRIUS SAFETY RELAY STANDARD SERIES DEVICE	3SK1111-2AB30	Siemens	501260	X
-AI_01 &EFS+/120.6	1	ET 200SP, AI 8XRTD/TC 2-WIRE HF	6ES7134-6JF00-0CA1	Siemens	501550	X
-AI_01 &EFS+/120.6	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	X
-AI_02 &EFS+/120.6	1	ET 200SP, AI 8XRTD/TC 2-WIRE HF	6ES7134-6JF00-0CA1	Siemens	501550	X
-AI_02 &EFS+/120.6	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-AI_03 &EFS+/120.7	1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054	X
-AI_03 &EFS+/120.7	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-AI_04 &EFS+/120.7	1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054	X
-AI_04 &EFS+/120.7	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DI_01 &EFS+/120.3	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_01 &EFS+/120.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	X
-DI_02 &EFS+/120.3	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_02 &EFS+/120.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X

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-DI_03 &EFS+/120.3	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_03 &EFS+/120.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DI_04 &EFS+/120.4	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_04 &EFS+/120.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DI_05 &EFS+/120.4	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_05 &EFS+/120.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DI_06 &EFS+/120.4	1	ET 200SP, DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788alt	X
-DI_06 &EFS+/120.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DO_01 &EFS+/120.5	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	X
-DO_01 &EFS+/120.5	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	X
-DO_02 &EFS+/120.5	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	X
-DO_02 &EFS+/120.5	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	X
-DO_03 &EFS+/120.5	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	
-DO_03 &EFS+/120.5	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	
-DO_04 &EFS+/120.6	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	
-DO_04 &EFS+/120.6	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	
-X1 &EFS+/181.0	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	X
-X1 &EFS+/181.0	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	X
-X1 &EFS+/181.1;&EFS+/181.3;&EFS+/181.4;&EFS+/182.1;&EFS+/182.3;&EFS+/182.4	12	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-X1 &EFS+/181.4	1	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	X
-X1 &EFS+/181.1;&EFS+/181.4;&EFS+/182.1;&EFS+/182.4	4	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	X
-X3 &EFS+/127.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X3 &EFS+/127.1	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X3.10 &EFS+/129.0	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X3.10 &EFS+/129.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X3.10 &EFS+/129.0;&EFS+/129.2;&EFS+/129.4;&EFS+/129.6;&EFS+/129.8;&EFS+/129.9	6	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-X3.10 &EFS+/129.0;&EFS+/129.4;&EFS+/129.6;&EFS+/129.9	4	Plug-in bridge FBS 3-3,5	3213027	Phoenix Contact	503102	X
-X3.11 &EFS+/130.0	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X3.11 &EFS+/130.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X3.11 &EFS+/130.0;&EFS+/130.2;&EFS+/130.4;&EFS+/130.6;&EFS+/130.8;&EFS+/130.9	6	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-X3.11 &EFS+/130.0;&EFS+/130.4;&EFS+/130.6;&EFS+/130.9	4	Plug-in bridge FBS 3-3,5	3213027	Phoenix Contact	503102	X
-X3.12 &EFS+/131.0	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X3.12 &EFS+/131.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X3.12 &EFS+/131.0;&EFS+/131.2;&EFS+/131.4;&EFS+/131.6;&EFS+/131.8;&EFS+/131.9	6	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-X3.12 &EFS+/131.0;&EFS+/131.6	4	Plug-in bridge FBS 3-3,5	3213027	Phoenix Contact	503102	X
-X3.13 &EFS+/132.0	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X3.13 &EFS+/132.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X3.13 &EFS+/132.0;&EFS+/132.2;&EFS+/132.4;&EFS+/132.6;&EFS+/132.8;&EFS+/132.9	6	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-X3.13 &EFS+/132.0;&EFS+/132.6	4	Plug-in bridge FBS 3-3,5	3213027	Phoenix Contact	503102	X
-X3 ----------	21	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-X3 &EFS+/127.1;&EFS+/127.5;&EFS+/128.3;&EFS+/188.1	5	Plug-in bridge FBS 2-3,5	3213014	Phoenix Contact	500802	X
-X5 &EFS+/145.0	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	X
-X5 &EFS+/145.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X5.1 &EFS+/149.0	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-X5.1 &EFS+/149.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-X5.1 &EFS+/149.0;&EFS+/149.2	2	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-X5.1 &EFS+/149.0	1	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-X5 ----------	15	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	X
-XDC1 &EFS+/103.1	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC1 &EFS+/103.1	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC1 &EFS+/103.2;&EFS+/103.3	7	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-XDC1 &EFS+/103.2	1	Plug-in bridge FBS 3-5	3030174	Phoenix Contact	503103	X
-XDC1 &EFS+/103.3	1	Plug-in bridge FBS 4-5	3030187	Phoenix Contact	500801	X
-XDC1 &EFS+/103.4	2	Protective conductor double-level terminal block Push-in PTTB 2,5-PE	3210596	Phoenix Contact	501389	X
-XDC2 &EFS+/103.3	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC2 &EFS+/103.3	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC2 &EFS+/103.4;&EFS+/103.5	4	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-XDC2 &EFS+/103.4;&EFS+/103.5	2	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-XDC3 &EFS+/103.5	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC3 &EFS+/103.5	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC3 &EFS+/103.6;&EFS+/103.7	4	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-XDC3 &EFS+/103.6;&EFS+/103.7	2	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-XDC4 &EFS+/103.7	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC4 &EFS+/103.7	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC4 &EFS+/103.8;&EFS+/103.9	4	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-XDC4 &EFS+/103.8;&EFS+/103.9	2	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-XDC5.1 &EFS+/103.8	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC5.1 &EFS+/103.8	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC5.1 &EFS+/103.9	1	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-XDC5.2 &EFS+/103.8	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XDC5.2 &EFS+/103.8	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XDC5.2 &EFS+/103.9	1	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	X
-XE &EFS+/84.0	1	End cover D-PT 6	3212044	Phoenix Contact	500503	X
-XE &EFS+/84.0	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	X
-XE &EFS+/84.0;&EFS+/84.1	6	Feed-through terminal block Push-in PT 6	3211813	Phoenix Contact	501388	X
-XE &EFS+/84.0;&EFS+/84.1	3	Plug-in bridge FBS 2-8	3030284	Phoenix Contact	502068	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-XE &EFS+/84.1;&EFS+/84.2	3	Feed-through terminal block Push-in PT 6 BU	3211819	Phoenix Contact	500585	X
-XE &EFS+/84.1	1	Plug-in bridge FBS 3-8	3030297	Phoenix Contact	501568	X
-XE &EFS+/84.2;&EFS+/84.3	3	Ground modular terminal block Push-in PT 6-PE	3211822	Phoenix Contact	500725	X
-XT &EFS+/183.0	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-XT &EFS+/183.0	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-XT &EFS+/183.1;&EFS+/183.3;&EFS+/185.1;&EFS+/185.7;&EFS+/187.1;&EFS+/187.2;&EFS+/187.4;&EFS+/187.5	8	Double-level terminal block Push-in PTTB 2,5	3210567	Phoenix Contact	501386	X
-XT &EFS+/183.1	1	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	X
-XT &EFS+/187.4	1	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	X
-XT &EFS+/183.1;&EFS+/183.4;&EFS+/185.1;&EFS+/185.7;&EFS+/187.1;&EFS+/187.2	6	Protective conductor double-level terminal block Push-in PTTB 2,5-PE	3210596	Phoenix Contact	501389	X
-XV &EFS+/171.8	1	End cover D-PT 2,5-MT	3211003	Phoenix Contact	503382	X
-XV &EFS+/171.8	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	X
-XV &EFS+/134.5;&EFS+/150.7;&EFS+/151.7;&EFS+/151.8;&EFS+/171.8;&EFS+/173.9	9	Disconnect terminal block Push-in PT 2,5-TG	3210185	Phoenix Contact	500828	X
-XV &EFS+/134.5;&EFS+/150.7;&EFS+/151.7;&EFS+/151.8;&EFS+/171.8;&EFS+/173.9	9	Component connector P-CO	3036796	Phoenix Contact	500533	X
-XV &EFS+/150.7;&EFS+/151.7;&EFS+/151.8;&EFS+/171.8;&EFS+/173.9	8	Suppression diode CB-417, 600W, 47V, -65...+175°C	P6KE47CA	reichelt elektronik GmbH & Co. KG	501574	X
-XV &EFS+/171.8	1	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	X
-XV &EFS+/134.5	1	Diode ZY12 - zener diode, DO-41, plastic, 12V, 2W	17060488	Distrelec Schuricht GmbH	500556	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-85U1 &EFS+/85.0	1	Power Bridge Rectifiers SKD 30/16A1, Vrrm = 1600V, Id = 30A	07122150	Semikron	501556	X
-85U10 &EFS+/85.0	1	EMI Filter X2 Y1 Version 2	505722	Freqcon GmbH	505722	X
-149U1 &EFS+/149.5	1	Interface module UM 25-D25SUB/B/FRONT/Q	2959609	Phoenix Contact	501595	X
-171F1 &EFS+/171.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 2-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7023-4	Siemens	500780	X
-171F1 &EFS+/171.2	2	Fuse link 1000V AC/DC, 10A, 10x38mm, gR, 30kA	5019906-10	Schukat	501540	X
-171K1 &EFS+/171.7	1	DC contactor P115, 50A, 1500V DC, 1-pole, 24Vdc, SPST-NO	GIG/P115CDA	GIGAVAC	501487	X
-171K2 &EFS+/171.8	1	DC contactor P115, 50A, 1500V DC, 1-pole, 24Vdc, SPST-NO	GIG/P115CDA	GIGAVAC	501487	X
-171R1 &EFS+/171.1	1	Power Resistor 15R 10%(K) 300W, alu.-housing, VHPR/UL 300H	110072	Widap AG	501616	X
-171R2 &EFS+/171.2	1	Power Resistor 15R 10%(K) 300W, alu.-housing, VHPR/UL 300H	110072	Widap AG	501616	X
-173F2 &EFS+/173.2	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 2-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7023-4	Siemens	500780	X
-173F2 &EFS+/173.2	2	Fuse link 1000V AC/DC, 10A, 10x38mm, gR, 30kA	5019906-10	Schukat	501540	X
-173F3 &EFS+/173.4	1	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 2-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7023-4	Siemens	500780	X
-173F3 &EFS+/173.4	2	Fuse link 1000V AC/DC, 1A, 10x38mm, gR, 30kA	5019906.1	Schukat	500774	X
-173K1 &EFS+/173.8	1	DC contactor PNC113, 30A, 1500V DC, 1-pole, 24Vdc, SPST-NC	GIG/PNC113CDA	GIGAVAC	501488	X
-173K2 &EFS+/173.9	1	DC contactor PNC113, 30A, 1500V DC, 1-pole, 24Vdc, SPST-NC	GIG/PNC113CDA	GIGAVAC	501488	X
-173R1 &EFS+/173.2	1	Power resistor 500R 10%(K) 150W, alu.-housing, VHPR/UL 200H	110073	Widap AG	501615	X
-173R2 &EFS+/173.2	1	Power resistor 500R 10%(K) 150W, alu.-housing, VHPR/UL 200H	110073	Widap AG	501615	X
-173R3 &EFS+/173.3	1	Power resistor 500R 10%(K) 150W, alu.-housing, VHPR/UL 200H	110073	Widap AG	501615	X
-173R4 &EFS+/173.3	1	Power resistor 500R 10%(K) 150W, alu.-housing, VHPR/UL 200H	110073	Widap AG	501615	X

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-189X1 &EFS+/189.4	9	Disconnect and test disconnect rail-mount terminal block	3035696	Phoenix Contact	54498	X
-189X1 &EFS+/189.4	9	Test adapter - PAIS-4-FIX GY	3032791	Phoenix Contact	501482	X
-189X1 &EFS+/189.4	1	End cover D-DTME 6	3034426	Phoenix Contact	505468	X
-189X1 &EFS+/189.4	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-306K1 &EFS+/306.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K1 &EFS+/306.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-306K2 &EFS+/306.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K2 &EFS+/306.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-306K3 &EFS+/306.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K3 &EFS+/306.4	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-306K4 &EFS+/306.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K4 &EFS+/306.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-306K5 &EFS+/306.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K5 &EFS+/306.7	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-306K6 &EFS+/306.8	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-306K6 &EFS+/306.8	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K1 &EFS+/307.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-307K1 &EFS+/307.1	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K2 &EFS+/307.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-307K2 &EFS+/307.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K3 &EFS+/307.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-307K3 &EFS+/307.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K4 &EFS+/307.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-307K4 &EFS+/307.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K5 &EFS+/307.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-307K5 &EFS+/307.7	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-307K6 &EFS+/307.8	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-307K6 &EFS+/307.8	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-308K1 &EFS+/308.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K1 &EFS+/308.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-308K2 &EFS+/308.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K2 &EFS+/308.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-308K3 &EFS+/308.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K3 &EFS+/308.4	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-308K4 &EFS+/308.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K4 &EFS+/308.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-308K5 &EFS+/308.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K5 &EFS+/308.7	2	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-308K6 &EFS+/308.8	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-308K6 &EFS+/308.8	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-350K1 &EFS+/350.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-350K1 &EFS+/350.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-350K2 &EFS+/350.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-350K2 &EFS+/350.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-350X1.21 &EFS+/350.1	1	End cover D-PTTB 1,5/S	3208579	Phoenix Contact	500504	
-350X1.21 &EFS+/350.1	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	
-350X1.21 &EFS+/350.2:&EFS+/350.4:&EFS+/350.1:&EFS+/350.3:&EFS+/351.4:&EFS+/351.6:&EFS+/351.2:&EFS+/351.5:&EFS+/352.4:&EFS+/352.6	8	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	
-350X1.22 &EFS+/352.1	0					
-350X1.22 &EFS+/352.3	1	Double-level terminal block Push-in PTTB 1,5/S	3208511	Phoenix Contact	500560	
-351K3 &EFS+/351.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-351K3 &EFS+/351.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-351K4 &EFS+/351.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-351K4 &EFS+/351.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-352K1 &EFS+/352.0	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-352K1 &EFS+/352.0	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-352K2 &EFS+/352.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-352K2 &EFS+/352.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	

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Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-353K1 &EFS+/353.0	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-353K1 &EFS+/353.0	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-353K2 &EFS+/353.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-353K2 &EFS+/353.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-353K3 &EFS+/353.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-353K3 &EFS+/353.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-353K4 &EFS+/353.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-353K4 &EFS+/353.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-XE2 &EFS+/173.1	0					
-XE2 &EFS+/173.2...&EFS+/173.5	11	Feed-through terminal block Push-in PT 6	3211813	Phoenix Contact	501388	X
-XV.20 &EFS+/350.7;&EFS+/351.7;&EFS+/351.8;&EFS+/352.7;&EFS+/353.7;&EFS+/353.8	12	Disconnect terminal block Push-in PT 2,5-TG	3210185	Phoenix Contact	500828	
-XV.20 &EFS+/350.7;&EFS+/351.7;&EFS+/351.8;&EFS+/352.7;&EFS+/353.7;&EFS+/353.8	12	Component connector P-CO	3036796	Phoenix Contact	500533	
-XV.20 &EFS+/350.7;&EFS+/351.7;&EFS+/351.8;&EFS+/352.7;&EFS+/353.7;&EFS+/353.8	12	Suppression diode CB-417, 600W, 47V, -65...+175°C	P6KE47CA	reichelt elektronik GmbH & Co. KG	501574	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-147B1 &EFS+/147.5	1	Temperature sensor PT100, cable 1.5m, PVC	1101-6030-1211-110	S+S Regeltechnik GmbH	501787	X
-190H1 &EFS+/190.5	1	LED system light, Without socket, Length: 337 mm, Input voltage: 100 V - 240 V, 1~, 50 Hz/60 Hz	2500110	Rittal	10007	X
-190H1 &EFS+/190.5	1	Infeed, 2-pole (with socket, without connector), Input voltage: 100 V - 240 V, 1~, 50 Hz/60 Hz	2500420	Rittal	10009	X
-190H1 &EFS+/190.5	1	Door-Operated Switch, Input voltage: 230 V AC, 24 V DC, - 240 V, 1~, 50 Hz/60 Hz,	2500460	Rittal	500736	X

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Editor	Freqcon_JD			Statron	FREQCON	PARTS LIST	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EPC Parts List	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 1
Date								+ CTRL_1.5 above	total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-20BG1 &EFS+/100.2	1	*** VX BG Steuerungseinheit IEC Standard-Batteriecontainer***	53550	Freqcon GmbH	53550	
-20BG1-X &EFS+/100.2	55	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-160U1 &EFS+/160.0	1	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390	
-161U1 &EFS+/161.0	1	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390	
-162U1 &EFS+/162.0	1	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390	
-163U1 &EFS+/163.0	1	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390	
-164U1 &EFS+/164.0	1	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390	
-240U1 &EFS+/440.1	1	PIII IGBT IRT Interface 2.6 V4 cabinet	504890	Freqcon GmbH	504890	
-240U1 &EFS+/440.1	1	Connector screw connection, 4 Pol., 4 mm² - 6 mm², SACC-M12FS-4CON-PG7	1681114	Phoenix Contact	500805	
-240U1 &EFS+/440.1	1	Plug connector IE FC M12 PLUG PRO 2X2 M12	6GK1901-0DB20-6AA0	Siemens	500804	
-241U1 &EFS+/441.1	1	PIII IGBT IRT Interface 2.6 V4 cabinet	504890	Freqcon GmbH	504890	
-241U1 &EFS+/441.1	1	Connector screw connection, 4 Pol., 4 mm² - 6 mm², SACC-M12FS-4CON-PG7	1681114	Phoenix Contact	500805	
-241U1 &EFS+/441.1	2	Plug connector IE FC M12 PLUG PRO 2X2 M12	6GK1901-0DB20-6AA0	Siemens	500804	
-242U1 &EFS+/442.1	1	PIII IGBT IRT Interface 2.6 V4 cabinet	504890	Freqcon GmbH	504890	
-242U1 &EFS+/442.1	1	Connector screw connection, 4 Pol., 4 mm² - 6 mm², SACC-M12FS-4CON-PG7	1681114	Phoenix Contact	500805	
-242U1 &EFS+/442.1	2	Plug connector IE FC M12 PLUG PRO 2X2 M12	6GK1901-0DB20-6AA0	Siemens	500804	
-243U1 &EFS+/443.1	1	PIII IGBT IRT Interface 2.6 V4 cabinet	504890	Freqcon GmbH	504890	
-243U1 &EFS+/443.1	1	Connector screw connection, 4 Pol., 4 mm² - 6 mm², SACC-M12FS-4CON-PG7	1681114	Phoenix Contact	500805	
-243U1 &EFS+/443.1	2	Plug connector IE FC M12 PLUG PRO 2X2 M12	6GK1901-0DB20-6AA0	Siemens	500804	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-173R5 &EFS+/173.5	1	Power Resistor 100W 1% 10K J	160141	Widap AG	501614	
-173R6 &EFS+/173.5	1	Power Resistor 100W 1% 10K J	160141	Widap AG	501614	
-173R7 &EFS+/173.5	1	Power Resistor 100W 1% 10K J	160141	Widap AG	501614	
-173R8 &EFS+/173.5	1	Power Resistor 100W 1% 10K J	160141	Widap AG	501614	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-52G1 &EFS++CT/181.0;&EFS++CT/181.7	0					
-52G1-148B1 &EFS++CT/148.1	1	Temperature sensor PT100, cable 3m, PVC	1101-6030-1231-110	S+S Regeltechnik GmbH	501575	X
-52G1-181M1 &EFS++CT/181.1	1	Pump CM10-2, 3x380V-415V, 50Hz, 1,27 kW, 2,85-2,9 A, 2.950 - 2.960 rpm / 440V-480V, 60Hz, 2,2 kW, 4,0-3,7A, 3.520-3.530 rpm	99080211	GRUNDFOS GmbH	501409	X
-52G1-181R1 &EFS++CT/181.3	1	Screw-in heater SEHK, 3kW, 400V	106066	Siekerkotte GmbH & Co. KG	500620	X
-52G1-181S1 &EFS++CT/181.7	0					
-52G1-181X1 &EFS++CT/181.0	0					
-52G1-181X1 &EFS++CT/181.1;&EFS++CT/181.3;&EFS++CT/181.4;&EFS++CT/182.1	9	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	X
-52G1-181X1 &EFS++CT/181.3	1	End cover D-PT 2,5-MT	3211003	Phoenix Contact	503382	X
-52G1-181X1 &EFS++CT/181.3	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-52G1-181X1 &EFS++CT/181.4	1	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	X
-52G1-181X1 &EFS++CT/181.1;&EFS++CT/181.4;&EFS++CT/182.1	3	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	X
-52G1-181X3 &EFS++CT/148.1;&EFS++CT/181.7	2	Double-level terminal block Push-in PTTB 2,5	3210567	Phoenix Contact	501386	X
-52G1-181X3 &EFS++CT/181.7	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	X
-52G1-181X3 &EFS++CT/181.7	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	X
-52G1-181X3 &EFS++CT/181.7	1	Terminal strip marker carrier KLM 3-L	0814788	Phoenix Contact	500652	X
-52G1-182M1 &EFS++CT/182.1	1	Heat exchanger 40kW cooling capacity, alluminium, 1,72kW, 3,86A, 400V	FR6555950001	Bondioli & Pavesi S.p.A.	500850	X

Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	Anschlussschiene;100x370mm;Zeichnung 501153B	501153	Freqcon GmbH	501153
1	TMC Transformer 3150kVA-6300V/620V-50Hz-AL-IP00		TMC Transformers	508555

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Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	*** BG connection rail 100x370 ***	50070	Freqcon GmbH	50070
9	*** BG connection rail 100x195 ***	50604	Freqcon GmbH	50604
1	DC Adapter 3.3535 (EN-AW 5754) Alu	51524	Freqcon GmbH	51524
3	*** VX BG PowerStack 3*250A***	52867	Freqcon GmbH	52867
3	*** VX BG PowerStack 1*1000A*** with SkiiP 2414 GB12E4-4DUW	52872	Freqcon GmbH	52872
3	*** VX BG DC switch and Fuse 3*250A 1000V***	52882	Freqcon GmbH	52882
1	*** VX BG AC Capacitor Bank 3 * 600µF ***	52918	Freqcon GmbH	52918
1	*** VX BG Circuit Breaker IEC 1000 A ***	52955	Freqcon GmbH	52955
3	*** VX Trible phase line Inductor, I= 3x 250A LN= 0,6mH ***	53046	Freqcon GmbH	53046
3	*** VX Single phase line Inductor, I= 1x 1000 A LN= 0,2mH ***	53053	Freqcon GmbH	53053
1	*** BG connection rail 100x370 ***	53190	Freqcon GmbH	53190
1	*** VX BG PE + N busbar 50x380 - 600 MTS ***	53290	Freqcon GmbH	53290
3	D SUB ADAPTER, PLUG-RECEPTACLE, 25-POL, L-COM DG9025MF1	506157	Freqcon GmbH	506157
3	SKiiP 3 I Adapter	FRQ-M00080-1	Freqcon GmbH	500426
3	EMI Suppresion CAP DC	FRQ-M00110	Freqcon GmbH	500449
1	Temperature sensor PT100, cable 3m Silicon	H2-012030-SDS	Fühler Direkt	500648
1	Temperature sensor PT100, cable 6m Silicon	H2-012060-SDS	Fühler Direkt	500649
3	Fuse link 690V AC, 100A, NH00, gL/gG, UL recognized, Bussmann	100NHG00B-690	Gemballa Electronics	501539

Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	SURGE ARRESTER [Typ 1 + Typ 2] PP BC TNC 50-400/690	374504	LEUTRON GmbH	10055
1	Auxiliary contacts S6000 SIZE 2	D5LAU01	Pronutec GmbH	503044
1	Direct handle S6000 SIZE 2	DS-LI21	Pronutec GmbH	503039
1	Switch-disconnector S6000, AC 600A at 690V AC (AC21B), size 2, 4-pole, to attach to the mounting plate	S6-08003NDO	Pronutec GmbH	10172
9	Lightning/surge arrester type 1/2 2P 1500VDC	2905640	Phoenix Contact	501130
3	SITOR cylindrical fuse link, 10 x 38 mm, 20 A, aR, Un AC: 600 V, Un DC: 700 V, DC according to UL	3NC1020	Siemens	501545
1	Fuse switch disconnector 3NP1, 3-pole, NH00, 160 A, for mounting plate, flat terminal, Fuse monitoring: electromechanical	3NP11331CA11	Siemens	500738
3	CYLINDRICAL FUSE-HOLDER 10X38 1000V 25A 1-POLE FOR PHOTOVOLTAIC-APPLICATION	3NW7013-4	Siemens	500779

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Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	*** VX BG Steuerungseinheit IEC Standard-Batteriecontainer***	53550	Freqcon GmbH	53550
4	PIII IGBT IRT Interface 2.6 V4 cabinet	504890	Freqcon GmbH	504890
5	HVIO Modul V5.0;ISO N-DC, N-AC	FRQ-M00029-1	Freqcon GmbH	500390
1	Panel PC 15,6" PPC-JWS156-J4125	PPC-JWS156-I/C-J4125/8GB/128GBSSD/W10		508475
1	Tree 8TX Metall - Unmanaged Switch - 8 Ports	58152	Murrelektronik	10287
4	Connector screw connection, 4 Pol., 4 mm² - 6 mm², SACC-M12FS-4CON-PG7	1681114	Phoenix Contact	500805
2	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464
2	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791
2	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214
38	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726
41	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803
2	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395
3	Link module spring-type Electrical and mechanical for 3RV2011 and 3RT201	3RA2911-2AA00	Siemens	500845
2	MOTOR PROTECTION S00, A-release 3.5...5 A, N-release 65 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1FA25	Siemens	500740
1	MOTOR PROTECTION S00, A-release 4.5...6.3 A, N-release 82 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1GA25	Siemens	500671
3	Cable connector size S00 Spring-type terminal	3RV2917-5AA00	Siemens	500797
1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070
1	SIMOTION P320-4 BOX WITH INTEL CORE I3 PROZESSOR; 2 X 1,6 GHZ	6AU1320-4DE65-3AF0	Siemens	500789

Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
2	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397
1	SIMATIC PN/PN Coupler	6ES7158-3AD10-0XA0	Siemens	10138
2	BA 2XRJ45	6ES7193-6AR00-0AA0	Siemens	505628
2	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787
7	Plug connector IE FC M12 PLUG PRO 2X2 M12	6GK1901-0DB20-6AA0	Siemens	500804
1	Router Ewon Cosy 131, 4G + VPN router, supply 24 VDC UMTS router	WEC6133G	Wachendorff Prozesstechnik GmbH & Co. KG	506838alt
4	Power Resistor 100W 1% 10K J	160141	Widap AG	501614

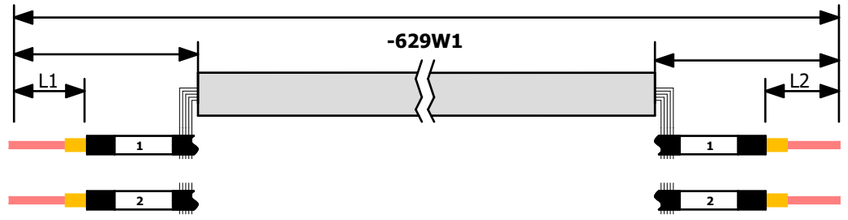
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Cable name =UNIT_01++TRA+-629W1
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	++CT+CTRL_1.3-X3:29	Fuse 230V AC for Container Air Conditioning		
Control cabinet 1	++CT+CTRL_1.3-X3:18	Earthing switch in On Transformer 620V side		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		Fuse 230V AC for Container Air Conditioning	++CONV-18Q1:13	
		Earthing switch in On Transformer 620V side	++CONV-18Q1:14	

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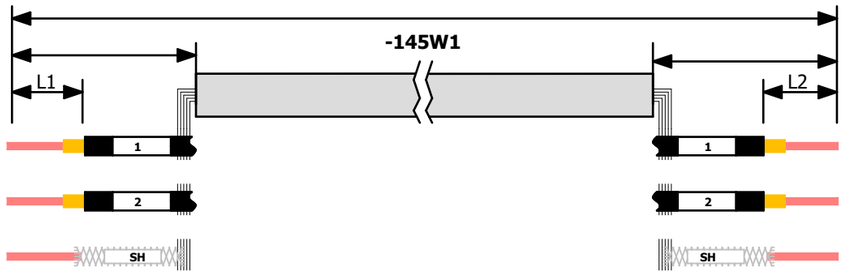
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Editor	Freqcon_JD			Statron		CABEL LIST	20240809_V0.7	= UNIT_01	Converter Container 1
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ TRA	medium voltage transformer
Date								+	

page: 1
total: 482

Cable name =UNIT_01++CONV+-145W1
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

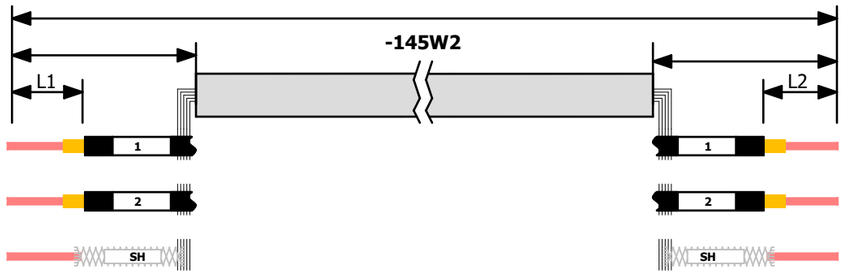


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-201L1:	INDUCTOR GRID PHASE L1 TEMPERATURE 1_1		
Inductor cabinet	+IND-201L1	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR GRID PHASE L1	++CT+CTRL_1.3-X5:1	*Control cabinet 1*
		=	++CT+CTRL_1.3-X5:2	*Control cabinet 1*
		=		

Cable name =UNIT_01++CONV+-145W2
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

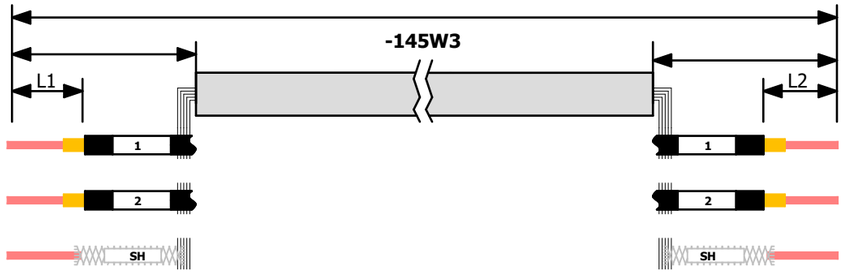


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-202L1:	INDUCTOR GRID PHASE L2 TEMPERATURE 1_2		
Inductor cabinet	+IND-202L1	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR GRID PHASE L2	++CT+CTRL_1.3-X5:3	*Control cabinet 1*
		=	++CT+CTRL_1.3-X5:4	*Control cabinet 1*
		=		

Cable name =UNIT_01++CONV+-145W3
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

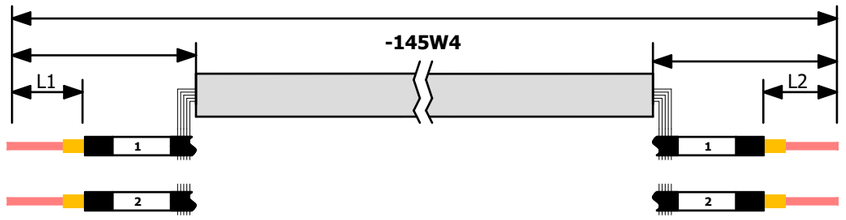


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-203L1:	INDUCTOR GRID PHASE L3 TEMPERATURE 1_3		
Inductor cabinet	+IND-203L1	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR GRID PHASE L3	++CT+CTRL_1.3-X5:5	*Control cabinet 1*
		=	++CT+CTRL_1.3-X5:6	*Control cabinet 1*
		=		

Cable name =UNIT_01++CONV+-145W4
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-211L1.1:	INDUCTOR DC SUB 2_1 TEMPERATURE 2_1		
Inductor cabinet	+IND-211L1.1	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 2_1	++CT+CTRL_1.3-X5:7	*Control cabinet 1*
		=	++CT+CTRL_1.3-X5:8	*Control cabinet 1*

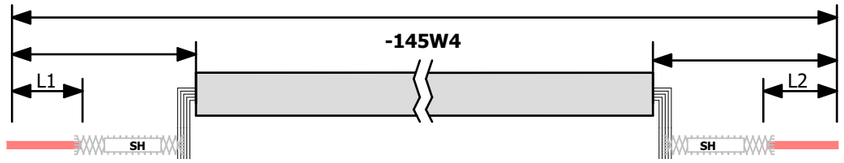
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Cable name =UNIT_01++CONV+-145W4
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-SH	INDUCTOR DC SUB 2_1 TEMPERATURE 2_1		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 2_1		

Cable name =UNIT_01++CONV+-146W1
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

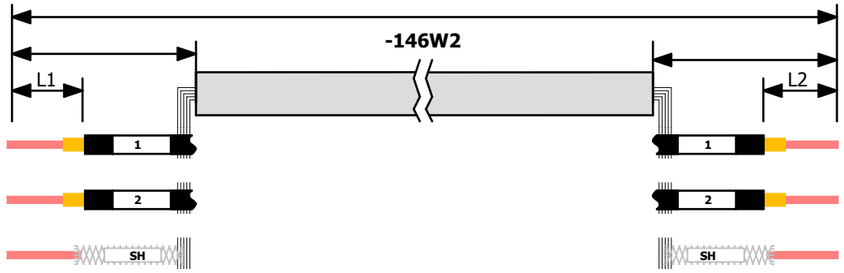


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-211L1.2	INDUCTOR DC SUB 2_2 TEMPERATURE 2_2		
Inductor cabinet	+IND-211L1.2	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 2_2	++CT+CTRL_1.3-X5:9	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:10	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-146W2
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

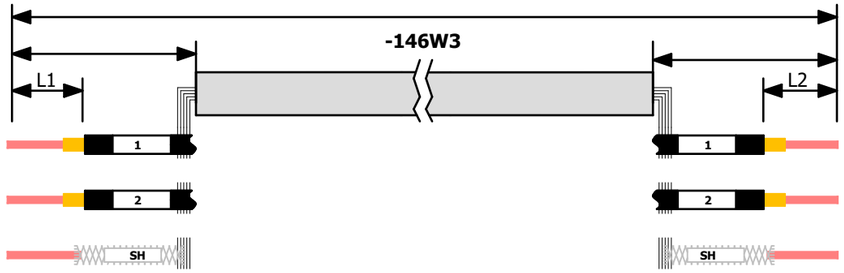


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-211L1.3	INDUCTOR DC SUB 2_3 TEMPERATURE 2_3		
Inductor cabinet	+IND-211L1.3	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 2_3	++CT+CTRL_1.3-X5:11	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:12	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-146W3
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-207L1.1	INDUCTOR DC SUB 3_1 TEMPERATURE 3_1		
Inductor cabinet	+IND-207L1.1	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 3_1	++CT+CTRL_1.3-X5:13	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:14	***Control cabinet 1***
		=		

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Cable name =UNIT_01++CONV+-146W4
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

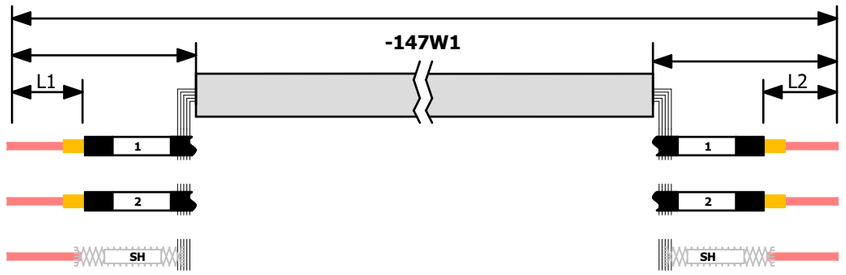


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-207L1.2	INDUCTOR DC SUB 3_2 TEMPERATURE 3_2		
Inductor cabinet	+IND-207L1.2	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 3_2	++CT+CTRL_1.3-X5:15	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:16	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-147W1
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

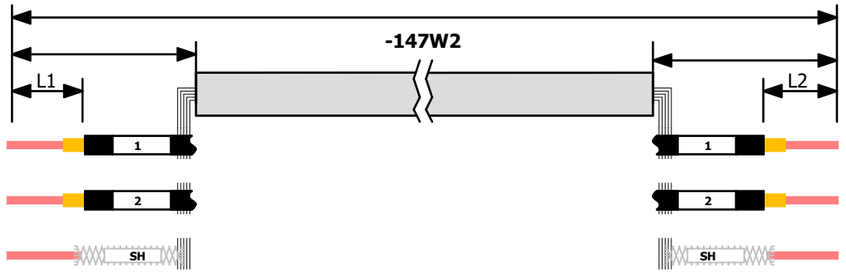


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-207L1.3:	INDUCTOR DC SUB 3_3 TEMPERATURE 3_3		
Inductor cabinet	+IND-207L1.3	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 3_3	++CT+CTRL_1.3-X5:17	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:18	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-147W2
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

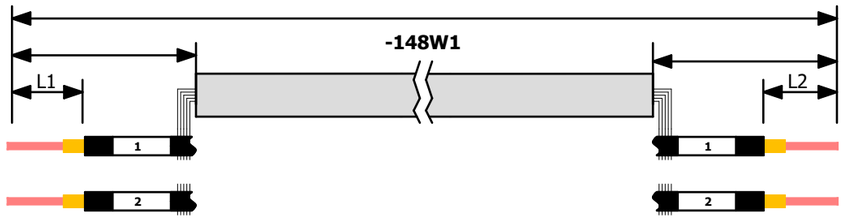


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-217L1.1:	INDUCTOR DC SUB 4_1 TEMPERATURE 4_1		
Inductor cabinet	+IND-217L1.1	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 4_1	++CT+CTRL_1.3-X5:19	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:20	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-148W1
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-217L1.2:	INDUCTOR DC SUB 4_2 TEMPERATURE 4_2		
Inductor cabinet	+IND-217L1.2	=		

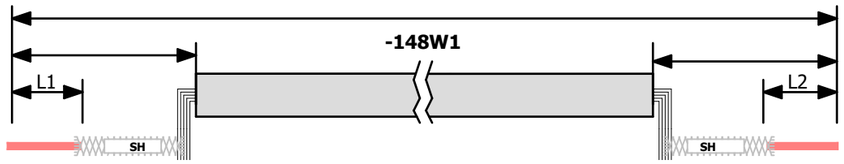
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 4_2	++CT+CTRL_1.3-X5:25	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:26	***Control cabinet 1***

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Cable name =UNIT_01++CONV+-148W1
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

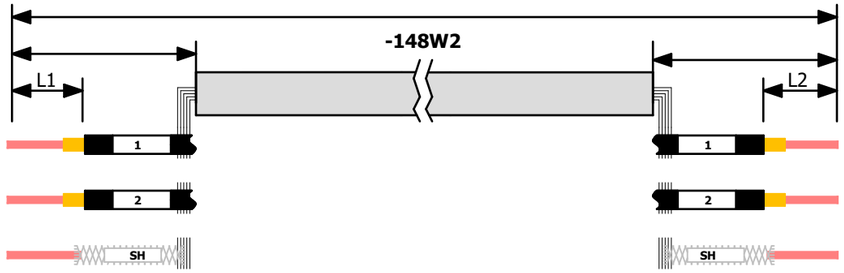


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-SH	INDUCTOR DC SUB 4_2 TEMPERATURE 4_2		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 4_2		

Cable name =UNIT_01++CONV+-148W2
Cable type F-CY-OZ (LiY-CY) 2x0,75 mm²
Free conductors

Cable parts HELU.16558
Order number 16558

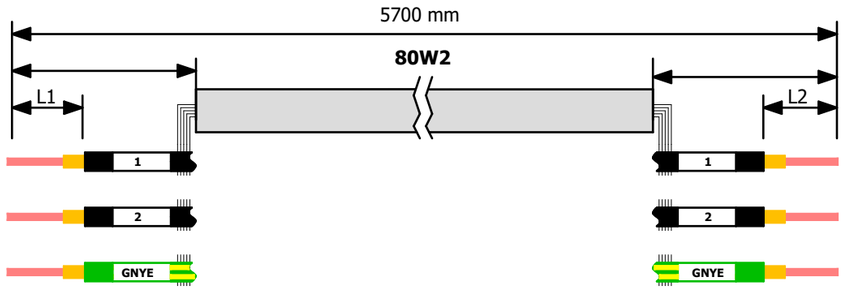


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Inductor cabinet	+IND-217L1.3:	INDUCTOR DC SUB 4_3 TEMPERATURE 4_3		
Inductor cabinet	+IND-217L1.3	=		
	-SH	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		INDUCTOR DC SUB 4_3	++CT+CTRL_1.3-X5:29	***Control cabinet 1***
		=	++CT+CTRL_1.3-X5:30	***Control cabinet 1***
		=		

Cable name =UNIT_01++CONV+-80W2
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

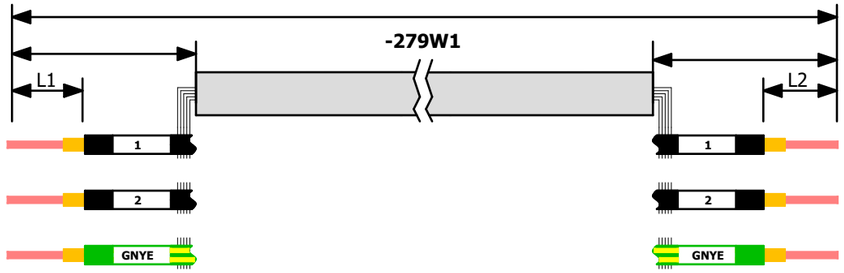


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	++CT+CTRL_1.3-XT:9	230V AC for Circuit Breaker 1	End splice	8 mm
Control cabinet 1	++CT+CTRL_1.3-XT:10	=	End splice	8 mm
Control cabinet 1	++CT+CTRL_1.3-XT:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	230V AC for Circuit Breaker 1	+CIR-80Q1:X5_2	***Circuit Breaker cabinet***
8 mm	stripped	=	+CIR-80Q1:X5_1	***Circuit Breaker cabinet***
		=		

Cable name =UNIT_01++CONV+-279W1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	++CT+CTRL_1.3-XT:1	CON Fans 1-5 in door	stripped	8 mm
Control cabinet 1	++CT+CTRL_1.3-XT:2	=	stripped	8 mm
Control cabinet 1	++CT+CTRL_1.3-XT:PE	=	stripped	8 mm

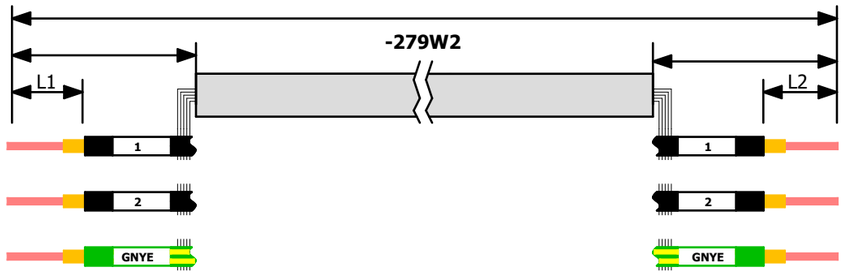
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	CON Fans 1-5	+CON-279M1:L	***Converter cabinet***
8 mm	stripped	=	+CON-279M1:N	***Converter cabinet***
8 mm	stripped	=	+CON-279M1:PE	***Converter cabinet***

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Cable name =UNIT_01++CONV+-279W2
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

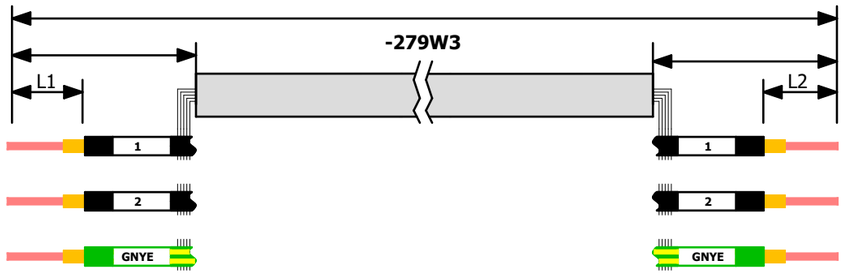


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	+CON-279M1:L	FAN 1 CONVERTER	stripped	8 mm
Converter cabinet	+CON-279M1:N	=	stripped	8 mm
Converter cabinet	+CON-279M1:PE	=	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	FAN 1 CONVERTER	+CON-279M2:1	Converter cabinet
8 mm	stripped	=	+CON-279M2:2	Converter cabinet
8 mm	stripped	=	+CON-279M2:PE	Converter cabinet

Cable name =UNIT_01++CONV+-279W3
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

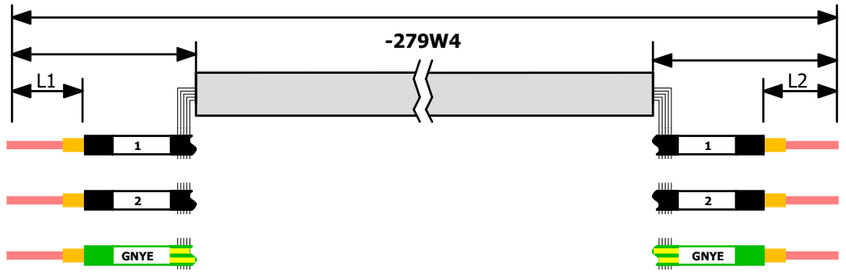


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	+CON-279M2:1	FAN 2 CONVERTER	stripped	8 mm
Converter cabinet	+CON-279M2:2	=	stripped	8 mm
Converter cabinet	+CON-279M2:PE	=	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	FAN 2 CONVERTER	+CON-279M3:1	Converter cabinet
8 mm	stripped	=	+CON-279M3:2	Converter cabinet
8 mm	stripped	=	+CON-279M3:PE	Converter cabinet

Cable name =UNIT_01++CONV+-279W4
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

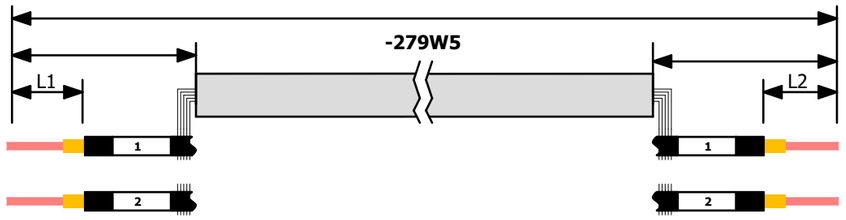


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	+CON-279M3:1	FAN 3 CONVERTER	stripped	8 mm
Converter cabinet	+CON-279M3:2	=	stripped	8 mm
Converter cabinet	+CON-279M3:PE	=	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	FAN 3 CONVERTER	+CON-279M4:1	Converter cabinet
8 mm	stripped	=	+CON-279M4:2	Converter cabinet
8 mm	stripped	=	+CON-279M4:PE	Converter cabinet

Cable name =UNIT_01++CONV+-279W5
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	+CON-279M4:1	FAN 4 CONVERTER	stripped	8 mm
Converter cabinet	+CON-279M4:2	=	stripped	8 mm

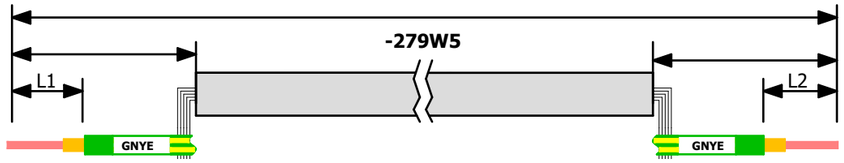
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped	FAN 4 CONVERTER	+CON-279M5:1	Converter cabinet
8 mm	stripped	=	+CON-279M5:2	Converter cabinet

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Cable name =UNIT_01++CONV+-279W5
Cable type JZ-500 3G1,5 mm²
Free conductors

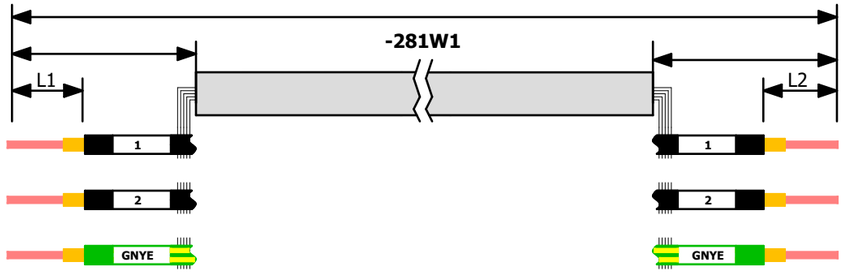
Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Converter cabinet	+CON-279M4:PE	FAN 4 CONVERTER	stripped	8 mm	8 mm	stripped	FAN 4 CONVERTER	+CON-279M5:PE	*Converter cabinet*

Cable name =UNIT_01++CONV+-281W1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	++CT+CTRL_1.3-XT:3	CON Fans 1-5 in door	stripped	8 mm	8 mm	stripped	CON Fans 1-5	+CIR-281M1:L	*Circuit Breaker cabinet*
Control cabinet 1	++CT+CTRL_1.3-XT:4	CIR Fans 1-3 in door	stripped	8 mm	8 mm	stripped	CIR Fans 1-3	+CIR-281M1:N	*Circuit Breaker cabinet*
Control cabinet 1	++CT+CTRL_1.3-XT:PE	=	stripped	8 mm	8 mm	stripped	=	+CIR-281M1:PE	*Circuit Breaker cabinet*

Cable name =UNIT_01++CONV+-281W2
Cable type JZ-500 3G1,5 mm²
Free conductors

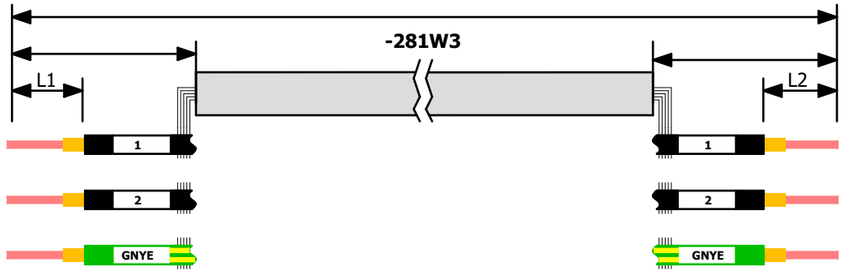
Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-281M1:L	FAN 1 CIRCUIT BREAKER CABINET	stripped	8 mm	8 mm	stripped	FAN 1 CIRCUIT BREAKER CABINET	+CIR-281M2:L	*Circuit Breaker cabinet*
Circuit Breaker cabinet	+CIR-281M1:N	=	stripped	8 mm	8 mm	stripped	=	+CIR-281M2:N	*Circuit Breaker cabinet*
Circuit Breaker cabinet	+CIR-281M1:PE	=	stripped	8 mm	8 mm	stripped	=	+CIR-281M2:PE	*Circuit Breaker cabinet*

Cable name =UNIT_01++CONV+-281W3
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091



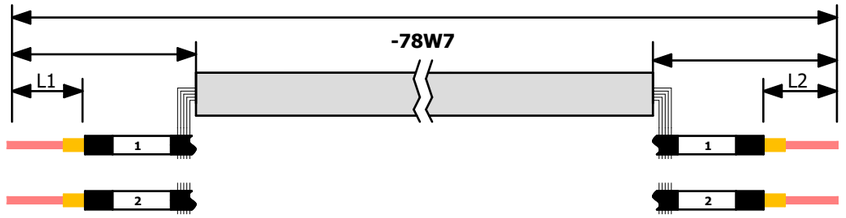
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-281M2:L	FAN 2 CIRCUIT BREAKER CABINET	stripped	8 mm	8 mm	stripped	FAN 2 CIRCUIT BREAKER CABINET	+CIR-281M3:1	*Circuit Breaker cabinet*
Circuit Breaker cabinet	+CIR-281M2:N	=	stripped	8 mm	8 mm	stripped	=	+CIR-281M3:2	*Circuit Breaker cabinet*
Circuit Breaker cabinet	+CIR-281M2:PE	=	stripped	8 mm	8 mm	stripped	=	+CIR-281M3:PE	*Circuit Breaker cabinet*

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Cable name =UNIT_01++CONV+-78W7
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030

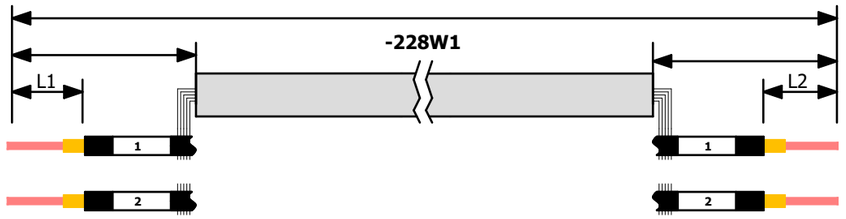


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:20			
AC and DC connection cabinet	+AC_DC-X3.43:19			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+AC_DC-78F1:13	AC and DC connection cabinet
			+AC_DC-78F1:14	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-228W1
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:7	SURGE ARRESTER DC SUBSYSTEM 3_1		
AC and DC connection cabinet	+AC_DC-X3.43:8	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 3_1	+AC_DC-228F1:11	AC and DC connection cabinet
		=	+AC_DC-228F1:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-228W2
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030

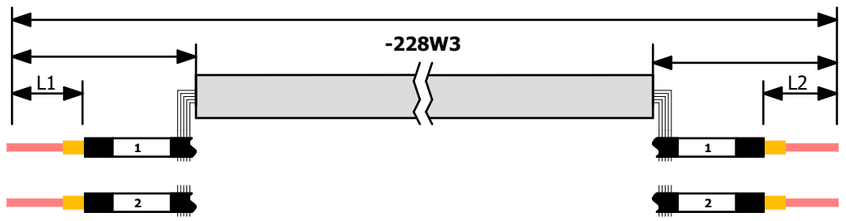


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:9	SURGE ARRESTER DC SUBSYSTEM 3_2		
AC and DC connection cabinet	+AC_DC-X3.43:10	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 3_2	+AC_DC-228F2:11	AC and DC connection cabinet
		=	+AC_DC-228F2:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-228W3
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:11	SURGE ARRESTER DC SUBSYSTEM 3_3		
AC and DC connection cabinet	+AC_DC-X3.43:12	=		

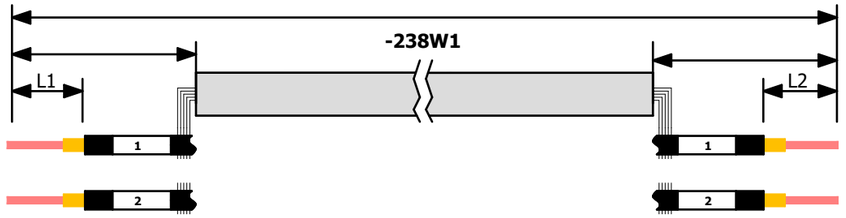
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 3_3	+AC_DC-228F3:11	AC and DC connection cabinet
		=	+AC_DC-228F3:12	AC and DC connection cabinet

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Cable name =UNIT_01++CONV+-238W1
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030

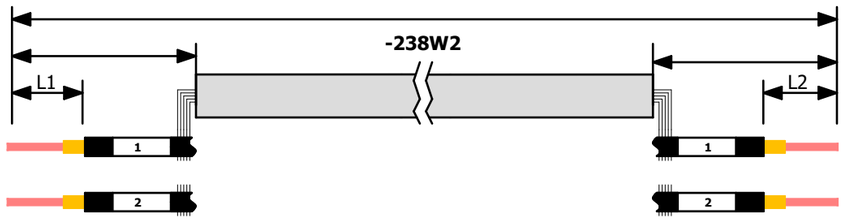


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:1	SURGE ARRESTER DC SUBSYSTEM 2_1		
AC and DC connection cabinet	+AC_DC-X3.43:2	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 2_1	+AC_DC-238F1:11	AC and DC connection cabinet
		=	+AC_DC-238F1:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-238W2
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030

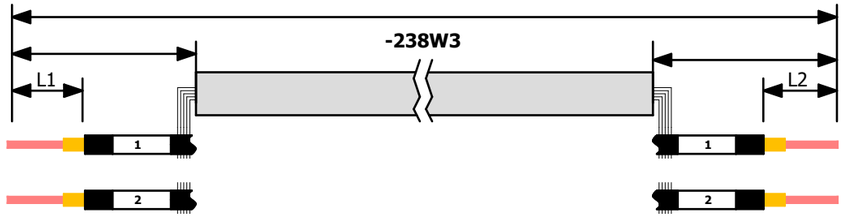


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:3	SURGE ARRESTER DC SUBSYSTEM 2_2		
AC and DC connection cabinet	+AC_DC-X3.43:4	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 2_2	+AC_DC-238F2:11	AC and DC connection cabinet
		=	+AC_DC-238F2:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-238W3
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030

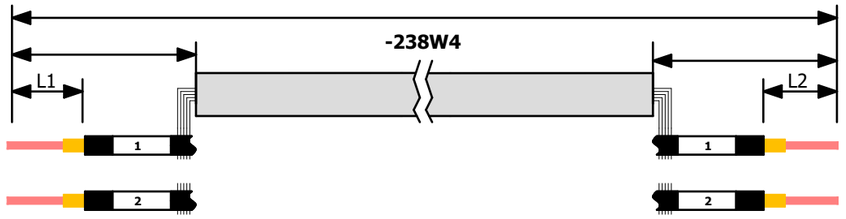


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:5	SURGE ARRESTER DC SUBSYSTEM 2_3		
AC and DC connection cabinet	+AC_DC-X3.43:6	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 2_3	+AC_DC-238F3:11	AC and DC connection cabinet
		=	+AC_DC-238F3:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-238W4
Cable type OZ-500 2x0,75 mm²
Free conductors

Cable parts HELU.10030
Order number 10030



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:13	SURGE ARRESTER DC SUBSYSTEM 4_1		
AC and DC connection cabinet	+AC_DC-X3.43:14	=		

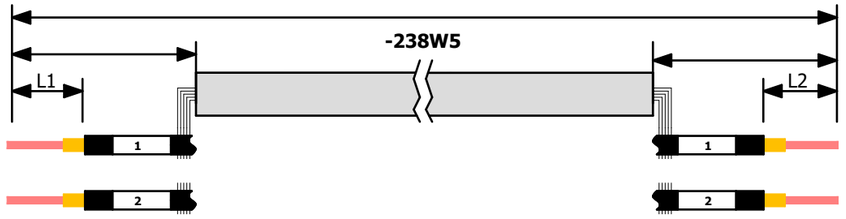
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 4_1	+AC_DC-238F4:11	AC and DC connection cabinet
		=	+AC_DC-238F4:12	AC and DC connection cabinet

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Cable name =UNIT_01++CONV+-238W5
Cable type OZ-500 2x0,75 mm²
Free conductors 0

Cable parts HELU.10030
Order number 10030

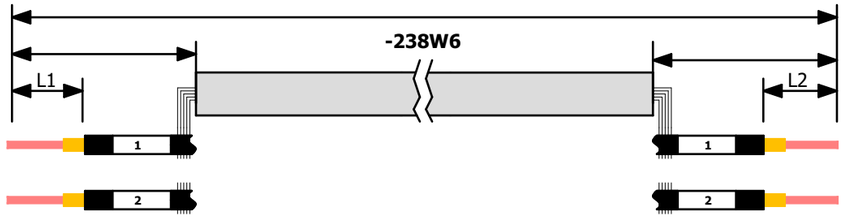


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:15	SURGE ARRESTER DC SUBSYSTEM 4_2		
AC and DC connection cabinet	+AC_DC-X3.43:16	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 4_2	+AC_DC-238F5:11	AC and DC connection cabinet
		=	+AC_DC-238F5:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-238W6
Cable type OZ-500 2x0,75 mm²
Free conductors 0

Cable parts HELU.10030
Order number 10030

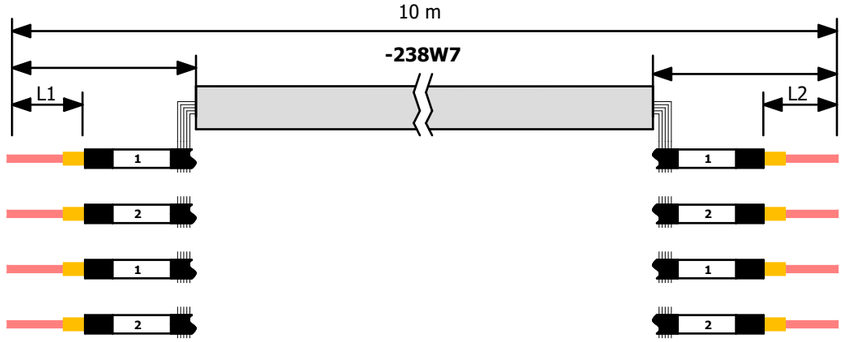


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:17	SURGE ARRESTER DC SUBSYSTEM 4_3		
AC and DC connection cabinet	+AC_DC-X3.43:18	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SURGE ARRESTER DC SUBSYSTEM 4_3	+AC_DC-238F6:11	AC and DC connection cabinet
		=	+AC_DC-238F6:12	AC and DC connection cabinet

Cable name =UNIT_01++CONV+-238W7
Cable type OZ-500 2x0,75 mm²
Free conductors 2

Cable parts HELU.10030
Order number 10030;10030

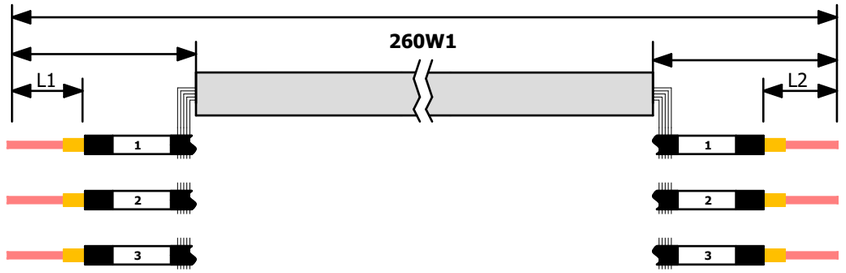


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-X3.43:1	SURGE ARRESTER DC SUBSYSTEM 2_1	stripped	7mm
AC and DC connection cabinet	+AC_DC-X3.43:20		stripped	7mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8mm	stripped	SURGE ARRESTER DC SUBSYSTEM 2_1	++CT+CTRL_1.3-X3:5	Control cabinet 1
8mm	stripped		++CT+CTRL_1.3-X3:6	Control cabinet 1

Cable name =UNIT_01++CONV+-260W1
Cable type OZ-500 4x0,75 mm²
Free conductors 0

Cable parts HELU.10034
Order number 10034



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	++CT+CTRL_1.3-X3:19	Smoke detector CON		
Control cabinet 1	++CT+CTRL_1.3-X3:20	=		
Control cabinet 1	++CT+CTRL_1.3-X3:21	=		

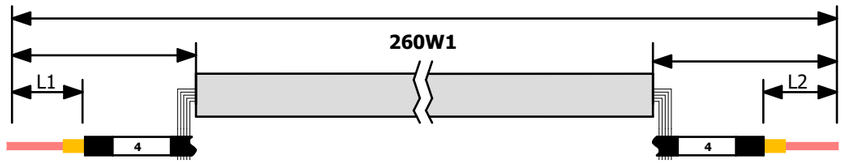
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		Smoke detector CON	+CON-260B1:4	Converter cabinet
		=	+CON-260B1:2	Converter cabinet
		=	+CON-260B1:5	Converter cabinet

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Cable name =UNIT_01++CONV+-260W1
Cable type OZ-500 4x0,75 mm²
Free conductors

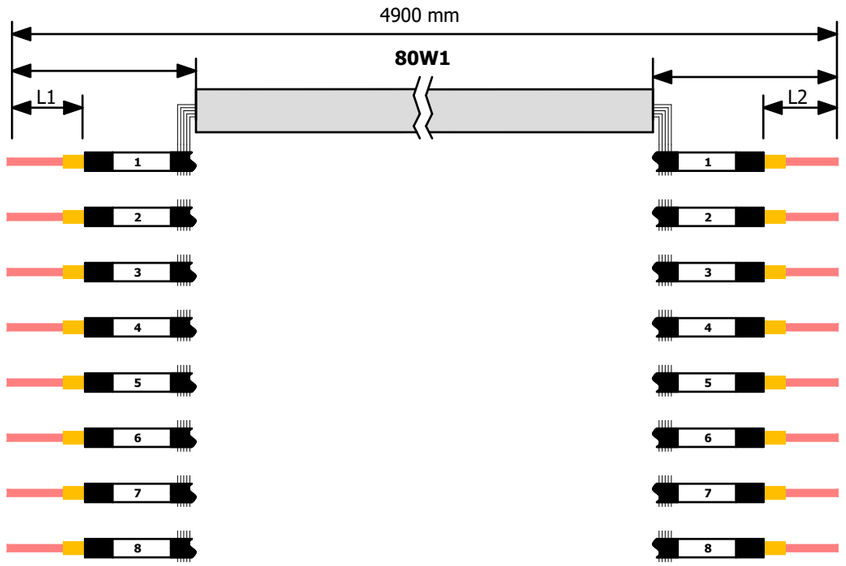
Cable parts HELU.10034
Order number 10034



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	++CT+CTRL_1.3-X3:22	Smoke detector CON					Smoke detector CON	+CON-260B1:6	Converter cabinet

Cable name =UNIT_01++CONV+-80W1
Cable type OZ-500 8x0,75 mm²
Free conductors

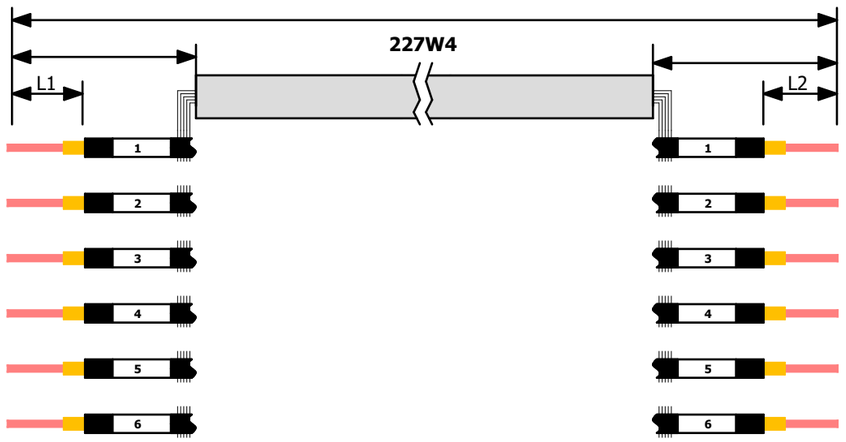
Cable parts HELU.10173
Order number 10173



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	++CT+CTRL_1.3-X3:1	CB 1 Tripped GRID	stripped	8 mm	8 mm	stripped	CB 1 Tripped GRID	+CIR-80Q1:X7_13	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:2	CB 1 OFF GRID	stripped	8 mm	8 mm	stripped	CB 1 OFF GRID	+CIR-80Q1:X6_9	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:3	CB 1 ON GRID	stripped	8 mm	8 mm	stripped	CB 1 ON GRID	+CIR-80Q1:X6_11	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:31	CB 1 GRID +24V	stripped	8 mm	8 mm	stripped	CB 1 GRID	+CIR-80Q1:X6_12	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:32	=	stripped	8 mm	8 mm	stripped	=	+CIR-80Q1:X5_11	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:35	CB 2 ISLAND GRID +24V OPTIONAL	stripped	8 mm	8 mm	stripped	CB 2 ISLAND GRID	+CIR-80Q1:X6_7	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:36	CB 1 GRID	stripped	8 mm	8 mm	stripped	CB 1 GRID	+CIR-80Q1:X6_14	Circuit Breaker cabinet
Control cabinet 1	++CT+CTRL_1.3-X3:37	=	stripped	8 mm	8 mm	stripped	=	+CIR-80Q1:X5_12	Circuit Breaker cabinet

Cable name =UNIT_01++CONV+-227W4
Cable type OZ-500 18x1 mm²
Free conductors

Cable parts HELU.10174
Order number 10174



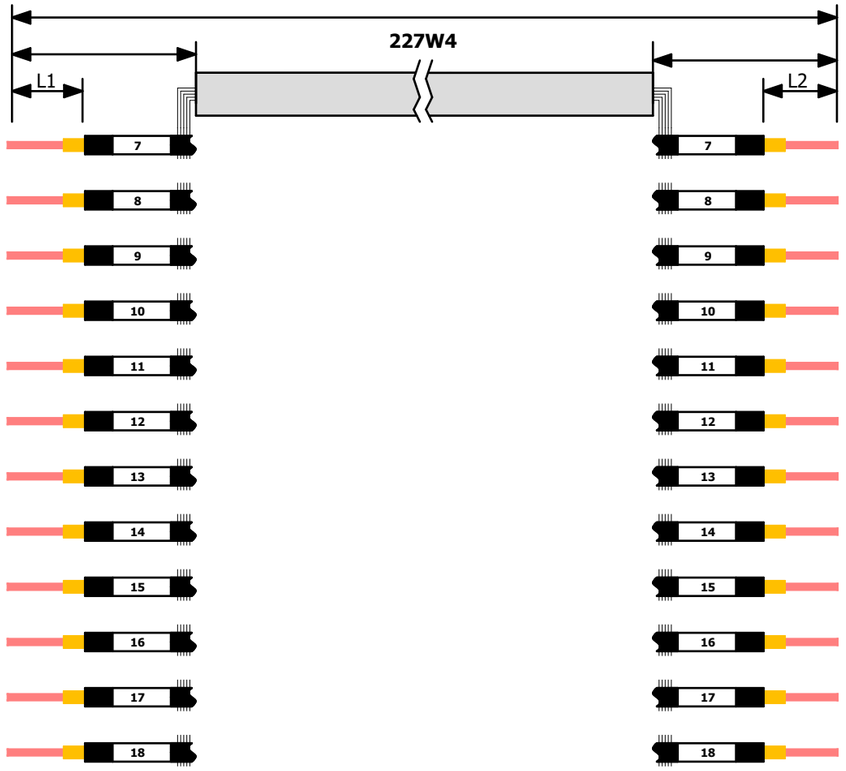
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-227U1-X3.1:1		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:2		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:4	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:3		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:7	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:4		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:3	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:5		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:6	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:6		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:9	Control cabinet 1

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Cable name =UNIT_01++CONV+-227W4
Cable type OZ-500 18x1 mm²
Free conductors

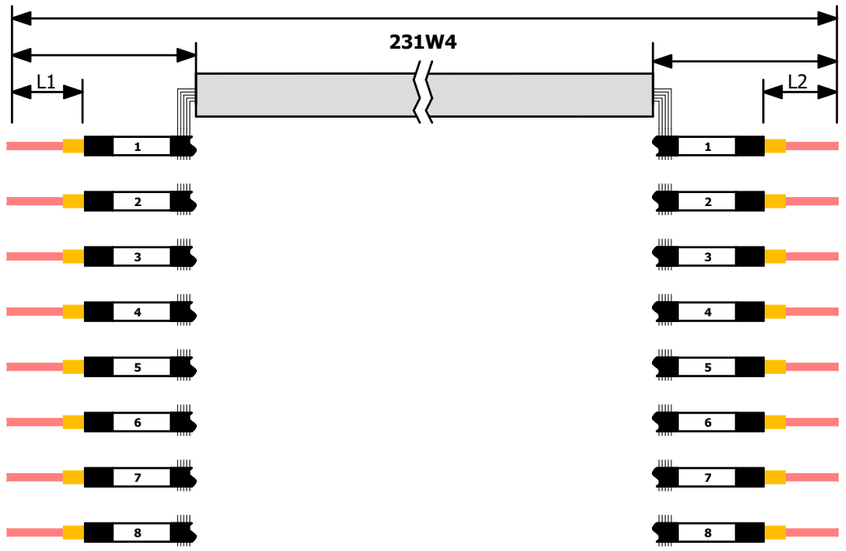
Cable parts HELU.10174
Order number 10174



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-227U1-X3.1:7		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K1:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:8		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K3:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:9		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K5:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:10		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K2:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:11		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K4:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:12		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-307K6:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:13		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.11:11	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:14		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.12:9	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:15		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.12:11	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:16		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.12:10	Control cabinet 1
Circuit Breaker cabinet	+CIR-227U1-X3.1:17		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:2	Control cabinet 1
			stripped	8 mm	8 mm	stripped			

Cable name =UNIT_01++CONV+-231W4
Cable type OZ-500 18x1 mm²
Free conductors

Cable parts HELU.10174
Order number 10174

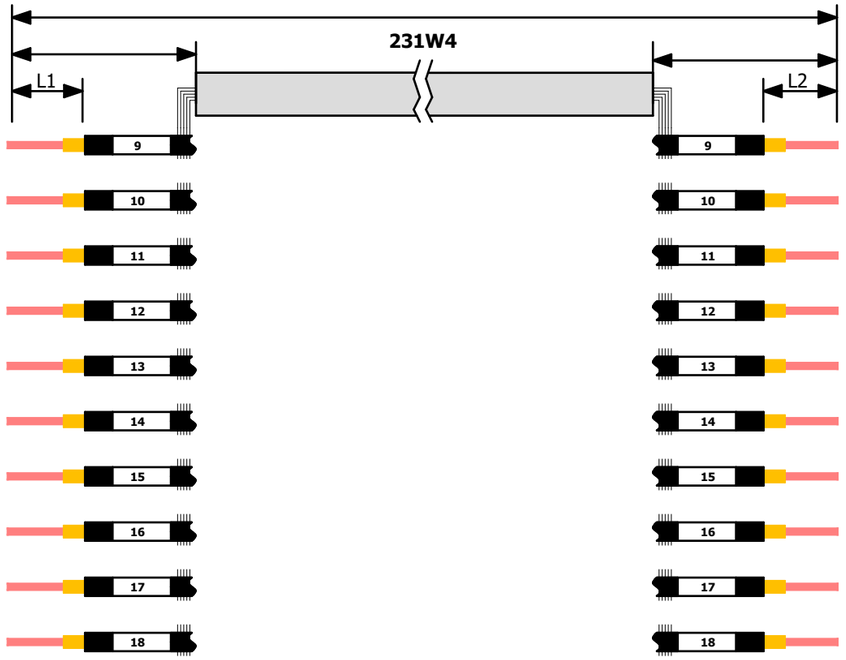


Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-231U1-X3.1:1		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:2		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:4	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:3		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:7	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:4		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:3	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:5		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:6	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:6		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:9	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:7		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K1:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:8		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K3:A1	Control cabinet 1

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Cable name =UNIT_01++CONV+-231W4
Cable type OZ-500 18x1 mm²
Free conductors

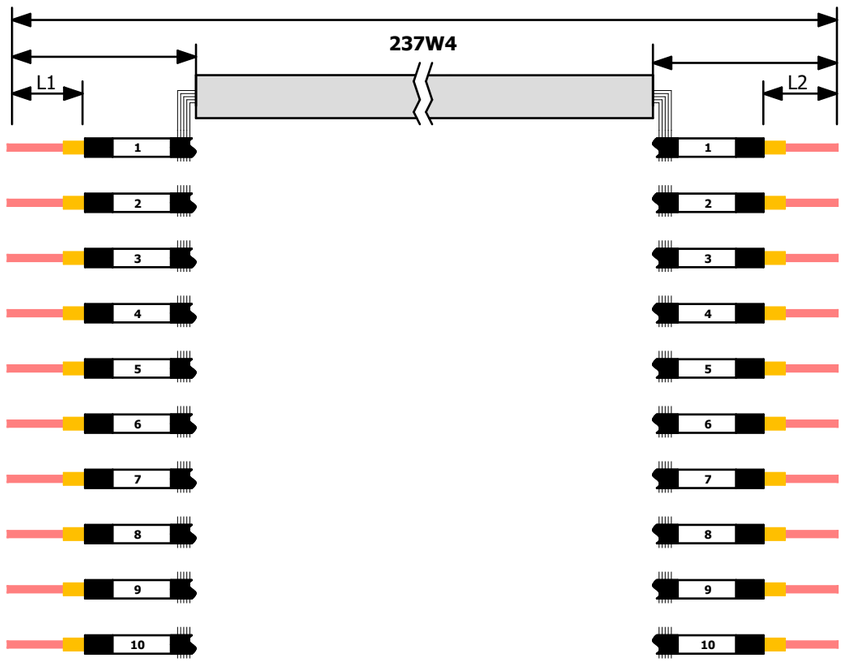
Cable parts HELU.10174
Order number 10174



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-231U1-X3.1:9		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K5:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:10		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K2:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:11		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K4:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:12		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-306K6:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:13		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.10:9	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:14		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.10:11	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:15		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.11:9	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:16		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-X3.10:10	Control cabinet 1
Circuit Breaker cabinet	+CIR-231U1-X3.1:17		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.3-150X1:2	Control cabinet 1
			stripped	8 mm	8 mm	stripped			

Cable name =UNIT_01++CONV+-237W4
Cable type OZ-500 18x1 mm²
Free conductors

Cable parts HELU.10174
Order number 10174



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	+CIR-237U1-X3.1:1		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.22:11	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:2		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:4	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:3		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:7	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:4		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.22:13	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:5		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:6	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:6		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-350X1.21:9	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:7		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-308K1:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:8		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-308K3:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:9		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-308K5:A1	Control cabinet 1
Circuit Breaker cabinet	+CIR-237U1-X3.1:10		stripped	8 mm	8 mm	stripped		++CT+CTRL_1.4-308K2:A1	Control cabinet 1

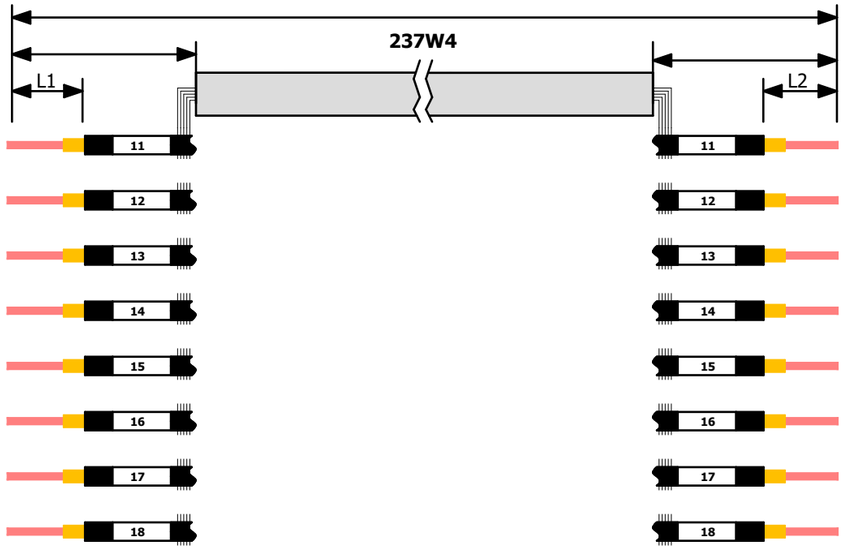
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Cable name =UNIT_01++CONV+-237W4
Cable type OZ-500 18x1 mm²
Free conductors

Cable parts HELU.10174
Order number 10174

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-237U1-X3.1:11		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:12		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:13		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:14		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:15		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:16		stripped	8 mm
Circuit Breaker cabinet	+CIR-237U1-X3.1:17		stripped	8 mm
			stripped	8 mm

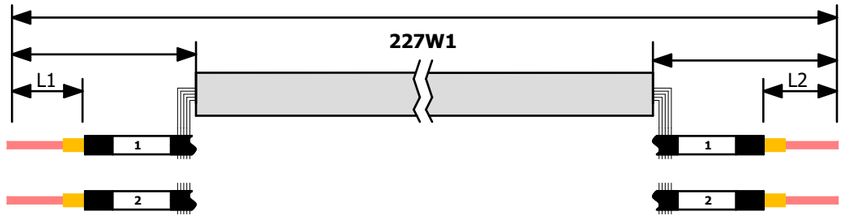


L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	stripped		++CT+CTRL_1.4-308K4:A1	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.4-308K6:A1	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.3-X3.13:8	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.3-X3.13:9	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.3-X3.13:11	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.3-X3.13:10	Control cabinet 1
8 mm	stripped		++CT+CTRL_1.4-350X1.22:12	Control cabinet 1
8 mm	stripped			

Cable name =UNIT_01++CONV+-227W1
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-227U1-F3:1			
Circuit Breaker cabinet	+CIR-227U1-F4:1			

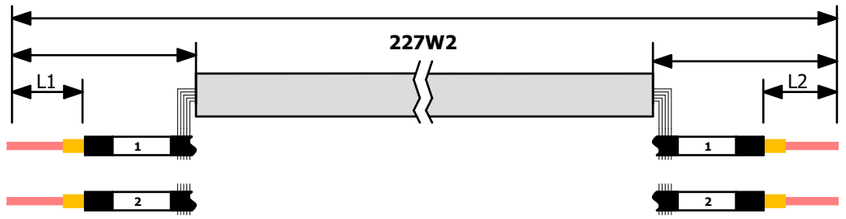


L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:32	Control cabinet 2
			++CT+CTRL_2.1-162U1:32	Control cabinet 2

Cable name =UNIT_01++CONV+-227W2
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-227U1-F7:1			
Circuit Breaker cabinet	+CIR-227U1-F8:1			



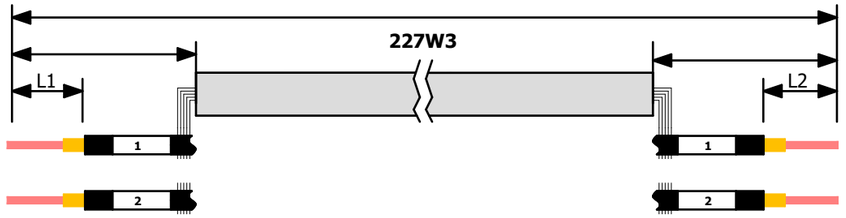
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:36	Control cabinet 2
			++CT+CTRL_2.1-162U1:36	Control cabinet 2

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Cable name =UNIT_01++CONV+-227W3
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

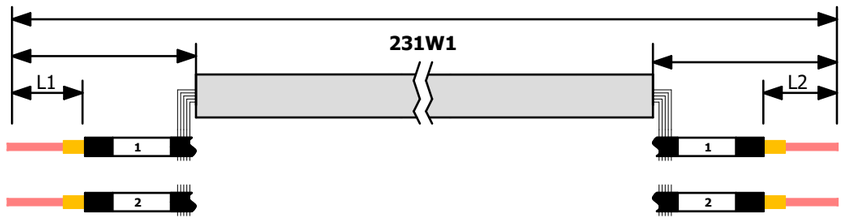


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-227U1-F11:1			
Circuit Breaker cabinet	+CIR-227U1-F12:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:40	Control cabinet 2
			++CT+CTRL_2.1-162U1:40	Control cabinet 2

Cable name =UNIT_01++CONV+-231W1
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

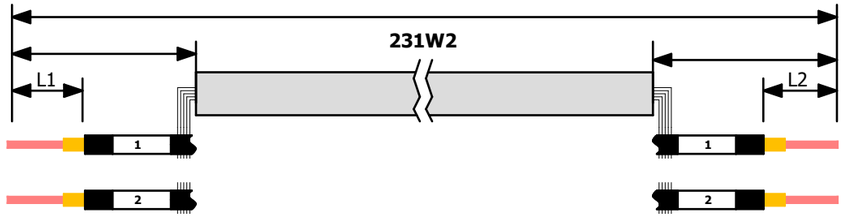


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-231U1-F3:1			
Circuit Breaker cabinet	+CIR-231U1-F4:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:19	Control cabinet 2
			++CT+CTRL_2.1-162U1:19	Control cabinet 2

Cable name =UNIT_01++CONV+-231W2
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

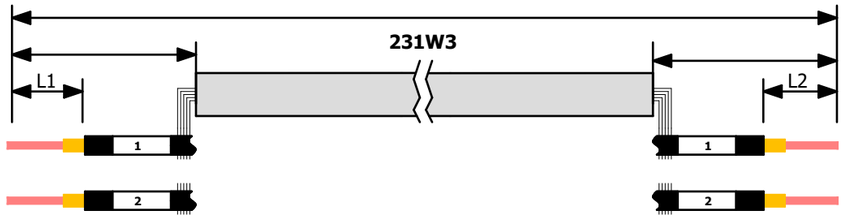


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-231U1-F7:1			
Circuit Breaker cabinet	+CIR-231U1-F8:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:23	Control cabinet 2
			++CT+CTRL_2.1-162U1:23	Control cabinet 2

Cable name =UNIT_01++CONV+-231W3
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-231U1-F11:1			
Circuit Breaker cabinet	+CIR-231U1-F12:1			

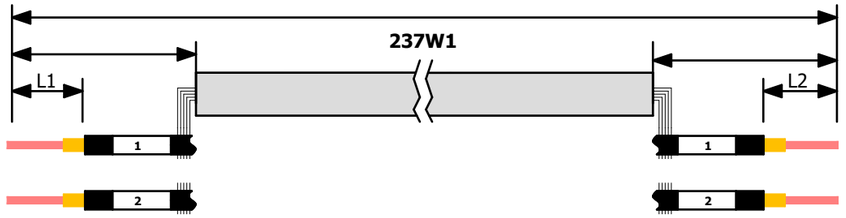
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-163U1:27	Control cabinet 2
			++CT+CTRL_2.1-162U1:27	Control cabinet 2

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CONV+-237W1
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

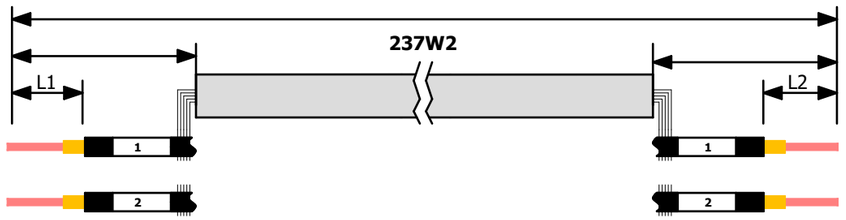


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-237U1-F3:1			
Circuit Breaker cabinet	+CIR-237U1-F4:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-164U1:19	Control cabinet 2
			++CT+CTRL_2.1-164U1:23	Control cabinet 2

Cable name =UNIT_01++CONV+-237W2
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

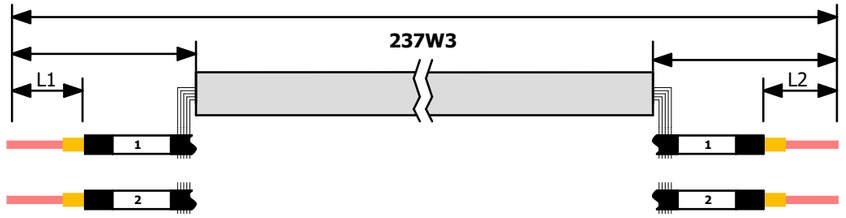


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-237U1-F7:1			
Circuit Breaker cabinet	+CIR-237U1-F8:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-164U1:27	Control cabinet 2
			++CT+CTRL_2.1-164U1:32	Control cabinet 2

Cable name =UNIT_01++CONV+-237W3
Cable type OZ-600 2x0,75 mm²
Free conductors

Cable parts
Order number

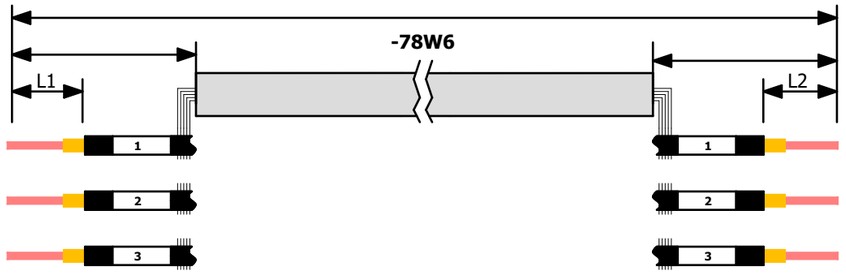


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	+CIR-237U1-F11:1			
Circuit Breaker cabinet	+CIR-237U1-F12:1			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_2.1-164U1:36	Control cabinet 2
			++CT+CTRL_2.1-164U1:40	Control cabinet 2

Cable name =UNIT_01++CONV+-78W6
Cable type OZ-600 3x2,5 mm²
Free conductors

Cable parts HELU.10691
Order number 10691

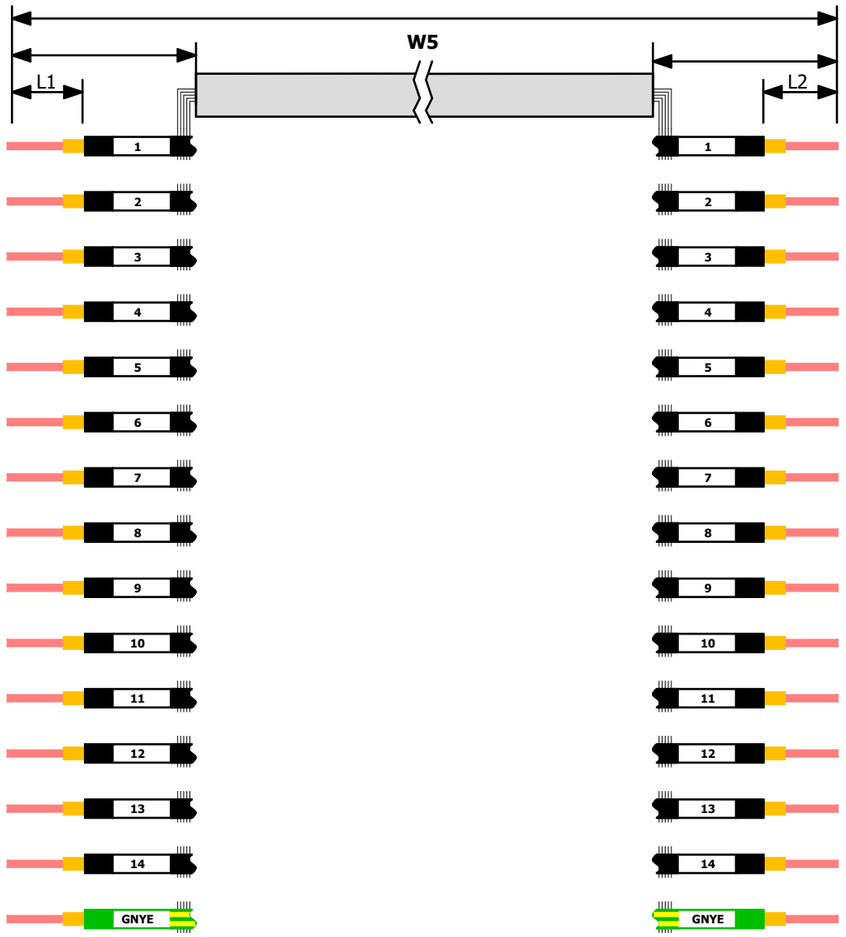


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
AC and DC connection cabinet	+AC_DC-78F3:2			
AC and DC connection cabinet	+AC_DC-78F3:4			
AC and DC connection cabinet	+AC_DC-78F3:6			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++CT+CTRL_1.4-85U1:L1	Control cabinet 1
			++CT+CTRL_1.4-85U1:L2	Control cabinet 1
			++CT+CTRL_1.4-85U1:L3	Control cabinet 1

Cable name =UNIT_01++CONV+CIR-227U1-W5
Cable type JZ-500 15G0,75 mm²
Free conductors

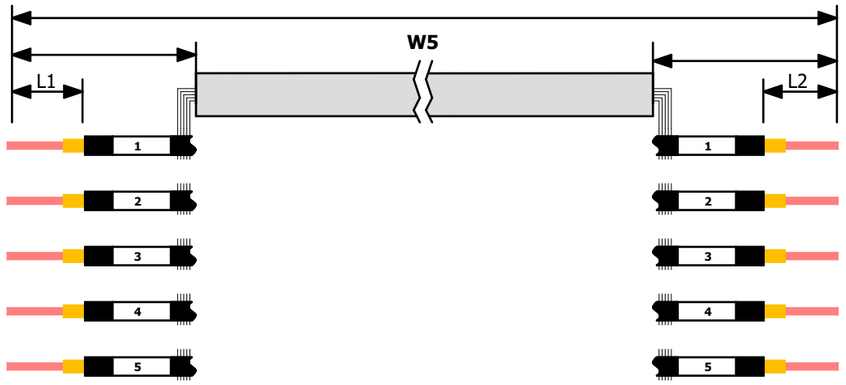
Cable parts HELU.10046
Order number 10046



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	-227U1-X3.1:1							-227U1-X3.2:1	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:2							-227U1-X3.2:3	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:3							-227U1-X3.2:5	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:4							-227U1-X3.2:7	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:5							-227U1-X3.2:9	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:6							-227U1-X3.2:11	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:7							-227U1-X3.2:13	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:8							-227U1-X3.2:15	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:9							-227U1-X3.2:17	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:10							-227U1-X3.2:19	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:11							-227U1-X3.2:21	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:12							-227U1-X3.2:23	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:16							-227U1-X3.2:24	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:17							-227U1-X3.2:12	Circuit Breaker cabinet
Circuit Breaker cabinet	-227U1-X3.1:PE							-227U1-X3.2:PE	Circuit Breaker cabinet

Cable name =UNIT_01++CONV+CIR-231U1-W5
Cable type JZ-500 15G0,75 mm²
Free conductors

Cable parts HELU.10046
Order number 10046



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Circuit Breaker cabinet	-231U1-X3.1:1							-231U1-X3.2:1	Circuit Breaker cabinet
Circuit Breaker cabinet	-231U1-X3.1:2							-231U1-X3.2:3	Circuit Breaker cabinet
Circuit Breaker cabinet	-231U1-X3.1:3							-231U1-X3.2:5	Circuit Breaker cabinet
Circuit Breaker cabinet	-231U1-X3.1:4							-231U1-X3.2:7	Circuit Breaker cabinet
Circuit Breaker cabinet	-231U1-X3.1:5							-231U1-X3.2:9	Circuit Breaker cabinet

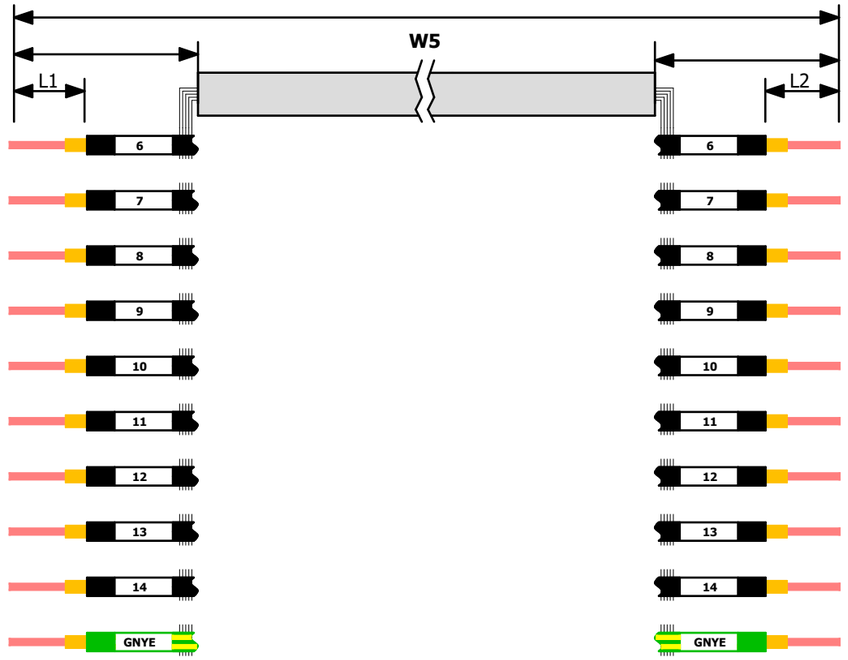
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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CONV+CIR-231U1-W5
Cable type JZ-500 15G0,75 mm²
Free conductors

Cable parts HELU.10046
Order number 10046

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	-231U1-X3.1:6			
Circuit Breaker cabinet	-231U1-X3.1:7			
Circuit Breaker cabinet	-231U1-X3.1:8			
Circuit Breaker cabinet	-231U1-X3.1:9			
Circuit Breaker cabinet	-231U1-X3.1:10			
Circuit Breaker cabinet	-231U1-X3.1:11			
Circuit Breaker cabinet	-231U1-X3.1:12			
Circuit Breaker cabinet	-231U1-X3.1:16			
Circuit Breaker cabinet	-231U1-X3.1:17			
Circuit Breaker cabinet	-231U1-X3.1:PE			

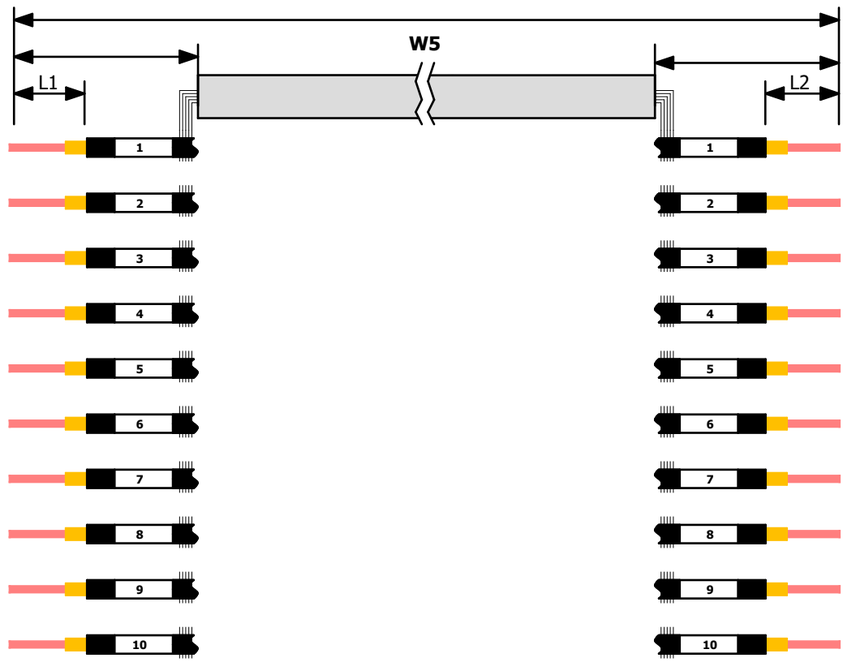


L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-231U1-X3.2:11	Circuit Breaker cabinet
			-231U1-X3.2:13	Circuit Breaker cabinet
			-231U1-X3.2:15	Circuit Breaker cabinet
			-231U1-X3.2:17	Circuit Breaker cabinet
			-231U1-X3.2:19	Circuit Breaker cabinet
			-231U1-X3.2:21	Circuit Breaker cabinet
			-231U1-X3.2:23	Circuit Breaker cabinet
			-231U1-X3.2:24	Circuit Breaker cabinet
			-231U1-X3.2:12	Circuit Breaker cabinet
			-231U1-X3.2:PE	Circuit Breaker cabinet

Cable name =UNIT_01++CONV+CIR-237U1-W5
Cable type JZ-500 15G0,75 mm²
Free conductors

Cable parts HELU.10046
Order number 10046

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	-237U1-X3.1:1			
Circuit Breaker cabinet	-237U1-X3.1:2			
Circuit Breaker cabinet	-237U1-X3.1:3			
Circuit Breaker cabinet	-237U1-X3.1:4			
Circuit Breaker cabinet	-237U1-X3.1:5			
Circuit Breaker cabinet	-237U1-X3.1:6			
Circuit Breaker cabinet	-237U1-X3.1:7			
Circuit Breaker cabinet	-237U1-X3.1:8			
Circuit Breaker cabinet	-237U1-X3.1:9			
Circuit Breaker cabinet	-237U1-X3.1:10			



L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-237U1-X3.2:1	Circuit Breaker cabinet
			-237U1-X3.2:3	Circuit Breaker cabinet
			-237U1-X3.2:5	Circuit Breaker cabinet
			-237U1-X3.2:7	Circuit Breaker cabinet
			-237U1-X3.2:9	Circuit Breaker cabinet
			-237U1-X3.2:11	Circuit Breaker cabinet
			-237U1-X3.2:13	Circuit Breaker cabinet
			-237U1-X3.2:15	Circuit Breaker cabinet
			-237U1-X3.2:17	Circuit Breaker cabinet
			-237U1-X3.2:19	Circuit Breaker cabinet

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0	1	2	3	4	5	6	7	8	9

Cable name =UNIT_01++CONV+CIR-237U1-W5
Cable type JZ-500 15G0,75 mm²
Free conductors

Cable parts HELU.10046
Order number 10046



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Circuit Breaker cabinet	-237U1-X3.1:11			
Circuit Breaker cabinet	-237U1-X3.1:12			
Circuit Breaker cabinet	-237U1-X3.1:16			
Circuit Breaker cabinet	-237U1-X3.1:17			
Circuit Breaker cabinet	-237U1-X3.1:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-237U1-X3.2:21	Circuit Breaker cabinet
			-237U1-X3.2:23	Circuit Breaker cabinet
			-237U1-X3.2:24	Circuit Breaker cabinet
			-237U1-X3.2:12	Circuit Breaker cabinet
			-237U1-X3.2:PE	Circuit Breaker cabinet

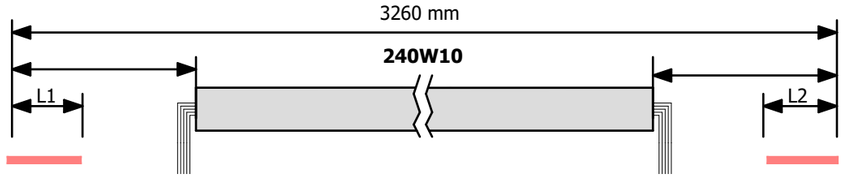
FRQ_Kabelplan_04_gro8_de_en

previous page: 2

next page: ++CT+/1

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EMB Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter	page: 3
Date								+ CIR Circuit Breaker cabinet	total: 482

Cable name =UNIT_01++CT+-240W10
Cable type 2YY (ST) CY 2x2x0,64 mm²
Free conductors 2

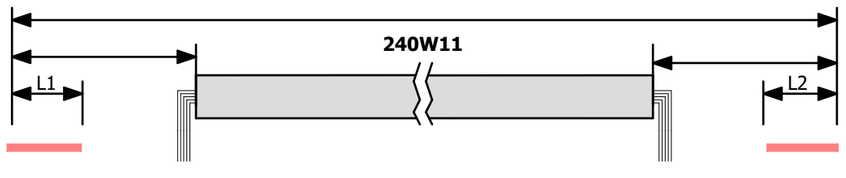


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.2-110U1:P1		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-240U1:P1	*Control cabinet 2*

Cable name =UNIT_01++CT+-240W11
Cable type 2YY (ST) CY 2x2x0,64 mm²
Free conductors 2

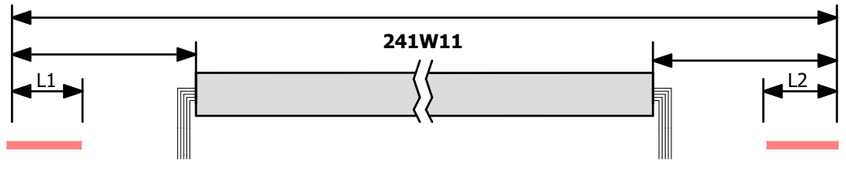


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-240U1:P2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-241U1:P1	*Control cabinet 2*

Cable name =UNIT_01++CT+-241W11
Cable type 2YY (ST) CY 2x2x0,64 mm²
Free conductors 2

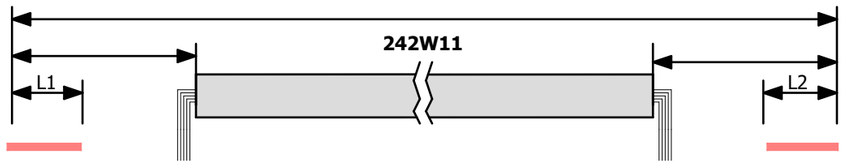


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-241U1:P2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-242U1:P1	*Control cabinet 2*

Cable name =UNIT_01++CT+-242W11
Cable type 2YY (ST) CY 2x2x0,64 mm²
Free conductors 2

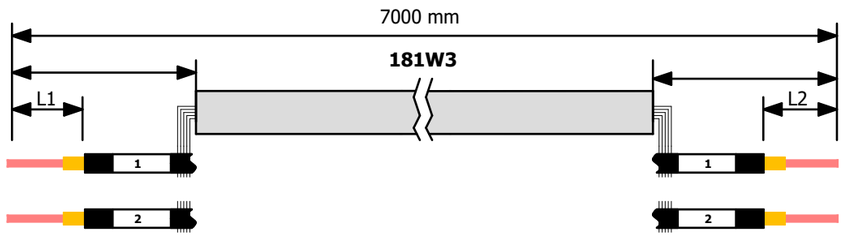


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-242U1:P2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-243U1:P1	*Control cabinet 2*

Cable name =UNIT_01++CT+-181W3
Cable type F-CY-OZ (LiY-CY) 7x0,75 mm²
Free conductors 2



Cable parts HELU.16563
Order number 16563

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-X3:23	PRESSURE SWITCH	stripped	8 mm
Control cabinet 1	+CTRL_1.3-X3:24	=	stripped	8 mm

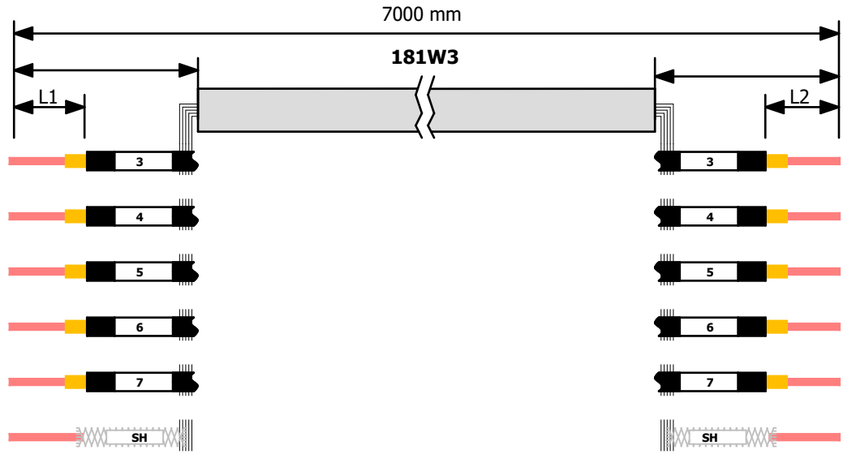
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Flat connector	PRESSURE SWITCH	++FAN-52G1-181X3:1	
	Flat connector	=	++FAN-52G1-181X3:3	

previous page: ++CONV+CIR/3
next page: 2

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Cable name =UNIT_01++CT+-181W3
Cable type F-CY-OZ (LiY-CY) 7x0,75 mm²
Free conductors 2

Cable parts HELU.16563
Order number 16563

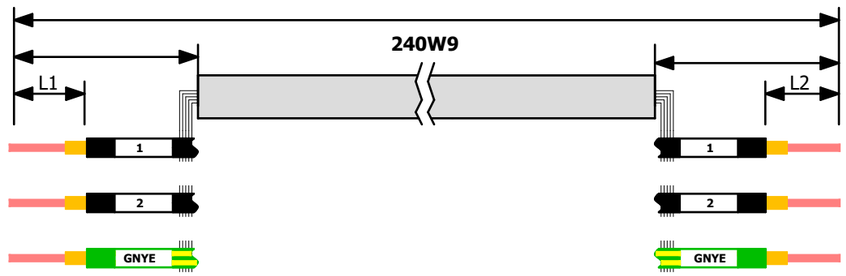


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-X3:25	PRESSURE SWITCH	stripped	8 mm
Control cabinet 1	+CTRL_1.3-X5:23	COOLING WATER TEMPERATURE	End splice	8 mm
Control cabinet 1	+CTRL_1.3-X5:24	=	End splice	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Flat connector	PRESSURE SWITCH	++FAN-52G1-181X3:2	
8 mm	stripped	COOLING WATER TEMPERATURE	++FAN-52G1-181X3:4	
8 mm	stripped	=	++FAN-52G1-181X3:5	

Cable name =UNIT_01++CT+-240W9
Cable type JZ-500 3G0,75 mm²
Free conductors 3

Cable parts HELU.10031
Order number 10031

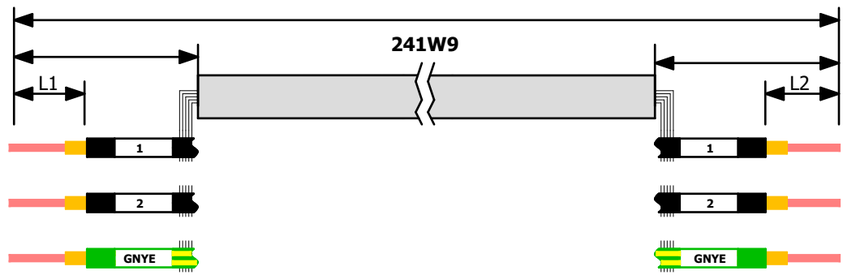


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-XDC1:1	FUSE 24V DC CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC1:4	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC1:PE	=	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector	FUSE 24V DC CONTROL VOLTAGE	+CTRL_2.1-240U1:1	*Control cabinet 2*
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-240U1:3	*Control cabinet 2*
	Connector	=	+CTRL_2.1-240U1:2	*Control cabinet 2*

Cable name =UNIT_01++CT+-241W9
Cable type JZ-500 3G0,75 mm²
Free conductors 3

Cable parts HELU.10031
Order number 10031



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-XDC2:2	BSU, SPARE CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC2:4	=	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC1:PE	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm

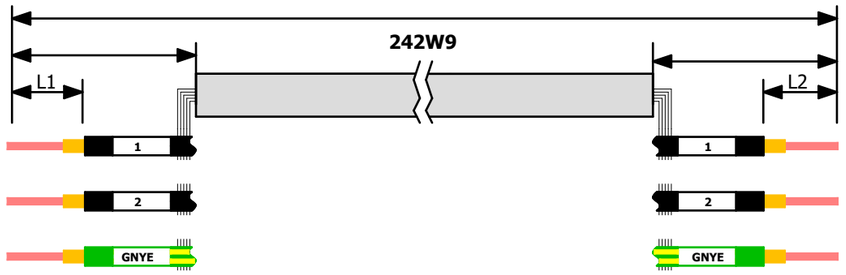
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector	BSU, SPARE CONTROL VOLTAGE	+CTRL_2.1-241U1:1	*Control cabinet 2*
	Connector	=	+CTRL_2.1-241U1:3	*Control cabinet 2*
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-241U1:2	*Control cabinet 2*

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Cable name =UNIT_01++CT+-242W9
Cable type JZ-500 3G0,75 mm²
Free conductors 0

Cable parts HELU.10031
Order number 10031

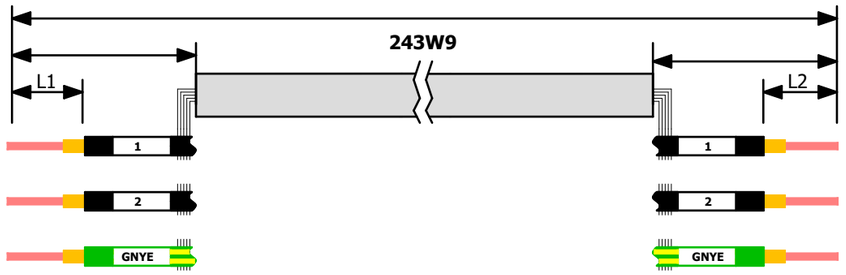


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-XDC2:1	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC2:3	BSU, SPARE CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC1:PE	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-242U1:1	*Control cabinet 2*
	Connector	BSU, SPARE CONTROL VOLTAGE	+CTRL_2.1-242U1:3	*Control cabinet 2*
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-242U1:2	*Control cabinet 2*

Cable name =UNIT_01++CT+-243W9
Cable type JZ-500 3G0,75 mm²
Free conductors 0

Cable parts HELU.10031
Order number 10031

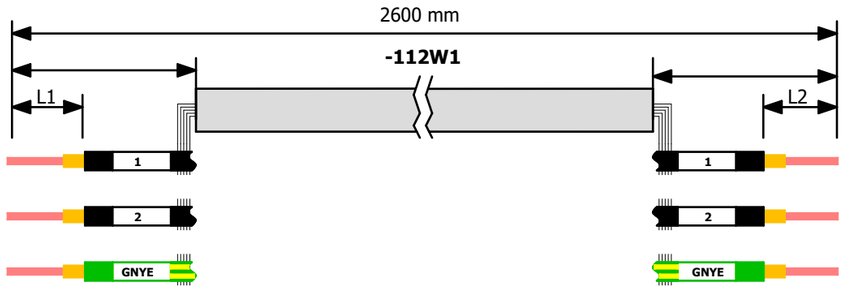


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-XDC2:1	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC2:3	BSU, SPARE CONTROL VOLTAGE	stripped	8 mm
Control cabinet 1	+CTRL_1.3-XDC1:PE	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	stripped	8 mm

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-243U1:1	*Control cabinet 2*
	Connector	BSU, SPARE CONTROL VOLTAGE	+CTRL_2.1-243U1:3	*Control cabinet 2*
	Connector	Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_2.1-243U1:2	*Control cabinet 2*

Cable name =UNIT_01++CT+-112W1
Cable type JZ-500 3G0,75 mm²
Free conductors 0

Cable parts HELU.10031
Order number 10031

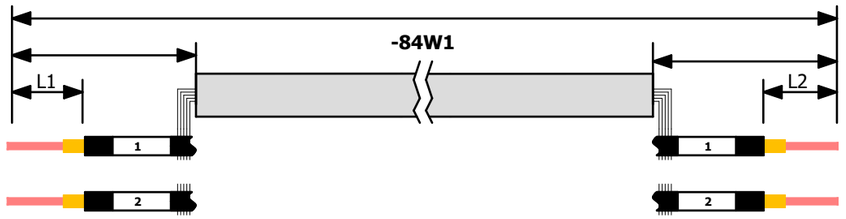


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-XDC2:2	BSU, SPARE CONTROL VOLTAGE		
Control cabinet 1	+CTRL_1.3-XDC2:4	=		
Control cabinet 1	+CTRL_1.3-XDC1:PE	Main PLC, SPS, 24V contacts CONTROL VOLTAGE		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		BSU, SPARE CONTROL VOLTAGE	+CTRL_1.1-112A1:L+	*Control cabinet 1*
		=	+CTRL_1.1-112A1:M	*Control cabinet 1*
		Main PLC, SPS, 24V contacts CONTROL VOLTAGE	+CTRL_1.1-112A1:PE	*Control cabinet 1*

Cable name =UNIT_01++CT+-84W1
Cable type JZ-500 7G6 mm²
Free conductors 1

Cable parts HELU.10150
Order number 10150



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.1-84Q1:2		stripped	8 mm
Control cabinet 1	+CTRL_1.1-84Q1:4		stripped	8 mm

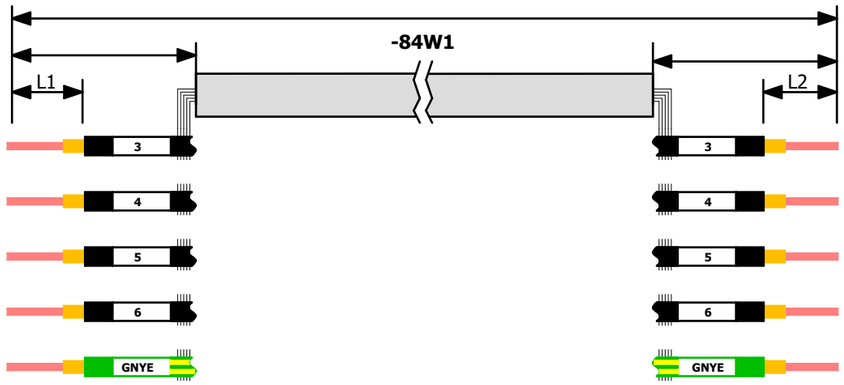
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
8 mm	End splice		+CTRL_1.3-84F1:L1'	*Control cabinet 1*
8 mm	End splice		+CTRL_1.3-84F1:L2'	*Control cabinet 1*

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CT+-84W1
Cable type JZ-500 7G6 mm²
Free conductors

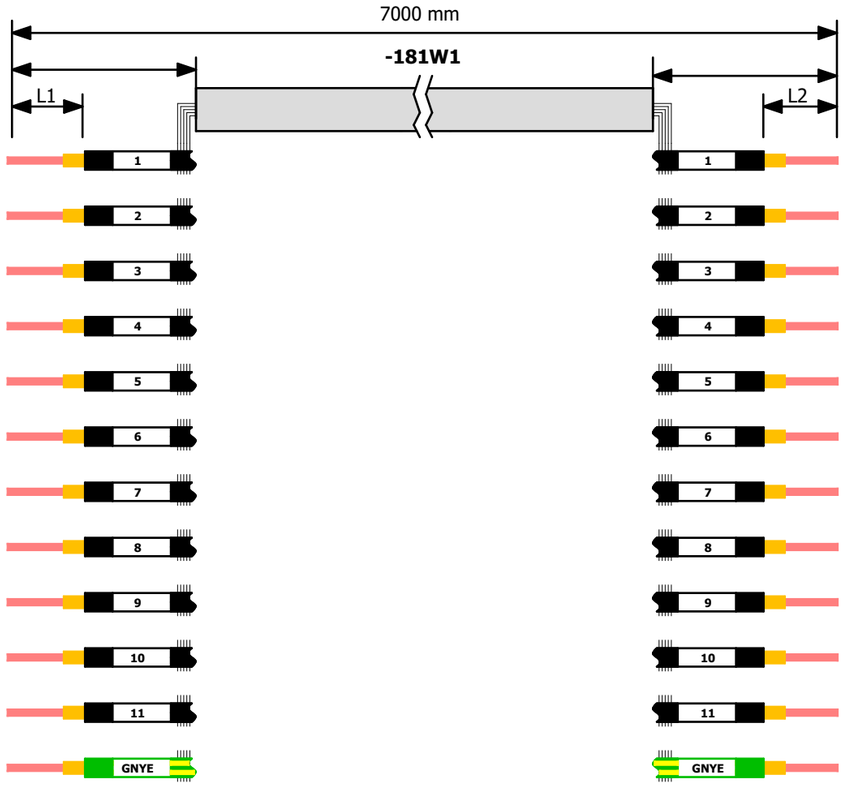
Cable parts HELU.10150
Order number 10150



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.1-84Q1:6		stripped	8 mm	8 mm	End splice		+CTRL_1.3-84F1:L3'	Control cabinet 1
Control cabinet 1	+CTRL_1.1-84Q1:1		stripped	8 mm	8 mm	End splice		+CTRL_1.3-183F1:1	Control cabinet 1
Control cabinet 1	+CTRL_1.1-84Q1:3		stripped	8 mm	8 mm	End splice		+CTRL_1.3-183F2:1	Control cabinet 1
Control cabinet 1	+CTRL_1.1-84Q1:5		stripped	8 mm	8 mm	End splice		+CTRL_1.3-185F1:1	Control cabinet 1

Cable name =UNIT_01++CT+-181W1
Cable type JZ-600 12G1,5 mm²
Free conductors

Cable parts HELU.10670
Order number 10670



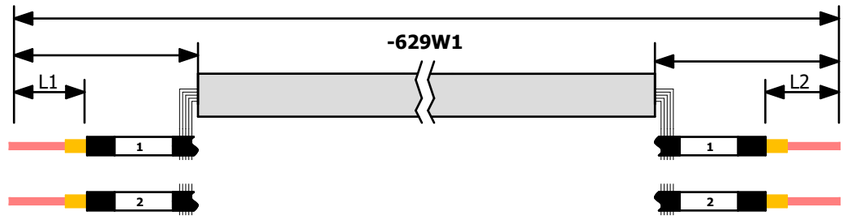
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.3-X1:1	PUMP	stripped	8 mm	8 mm	stripped	PUMP	++FAN-52G1-181X1:1:1	
Control cabinet 1	+CTRL_1.3-X1:2	=	stripped	8 mm	8 mm	stripped	=	++FAN-52G1-181X1:2:1	
Control cabinet 1	+CTRL_1.3-X1:3	=	stripped	8 mm	8 mm	stripped	=	++FAN-52G1-181X1:3:1	
Control cabinet 1	+CTRL_1.3-X1:4	FUSE FOR PUMP	stripped	8 mm	8 mm	stripped	FUSE FOR PUMP	++FAN-52G1-181X1:4:1	
Control cabinet 1	+CTRL_1.3-X1:5	HEATER	stripped	8 mm	8 mm	stripped	HEATER	++FAN-52G1-181X1:5:1	
Control cabinet 1	+CTRL_1.3-X1:6	=	stripped	8 mm	8 mm	stripped	=	++FAN-52G1-181X1:6:1	
Control cabinet 1	+CTRL_1.3-X1:7	=	stripped	8 mm	8 mm	stripped	=	++FAN-52G1-181X1:7:1	
Control cabinet 1	+CTRL_1.3-X1:8	FAN 1 HEAT EXCHANGER	stripped	8 mm	8 mm	End splice	FAN 1 HEAT EXCHANGER	++FAN-52G1-181X1:8:1	
Control cabinet 1	+CTRL_1.3-X1:9	=	stripped	8 mm	8 mm	End splice	=	++FAN-52G1-181X1:9:1	
Control cabinet 1	+CTRL_1.3-X1:10	=	stripped	8 mm	8 mm	End splice	=	++FAN-52G1-181X1:10:1	
Control cabinet 1	+CTRL_1.3-X1:PE	PUMP	stripped	8 mm	8 mm	stripped	PUMP	++FAN-52G1-181X1:PE:1	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EMB Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets	page: 4
Date								+	total: 482

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Cable name =UNIT_01++CT+-629W1
Cable type OZ-500 2x0,75 mm²
Free conductors 2

Cable parts HELU.10030
Order number 10030

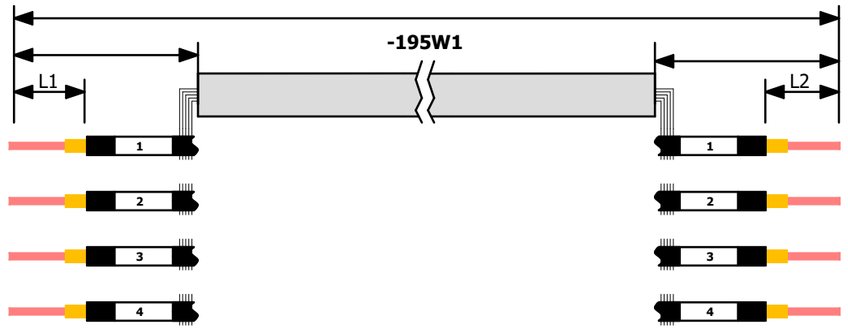


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_01++CT+-195W1
Cable type OZ-500 4x0,75 mm²
Free conductors 4

Cable parts HELU.10034
Order number 10034

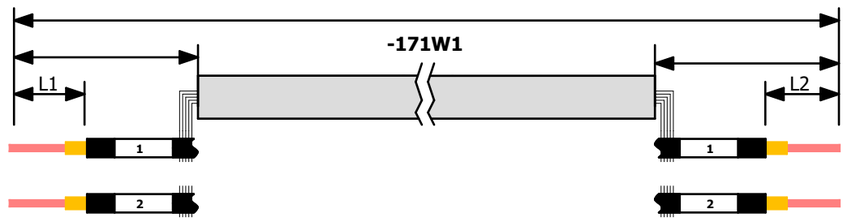


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.1-84Q1:13	SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS		
Control cabinet 1	+CTRL_1.1-84Q1:23			
Control cabinet 1	+CTRL_1.1-84Q1:14	SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS		
Control cabinet 1	+CTRL_1.1-84Q1:24			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS	+CTRL_1.3-195K3:T1	***Control cabinet 1***
			+CTRL_1.3-195K3:T2	***Control cabinet 1***
		SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS	+CTRL_1.3-X3:41	***Control cabinet 1***
			+CTRL_1.3-X3:43	***Control cabinet 1***

Cable name =UNIT_01++CT+-171W1
Cable type OZ-600 2x1,5 mm²
Free conductors 2

Cable parts HELU.10656
Order number 10656

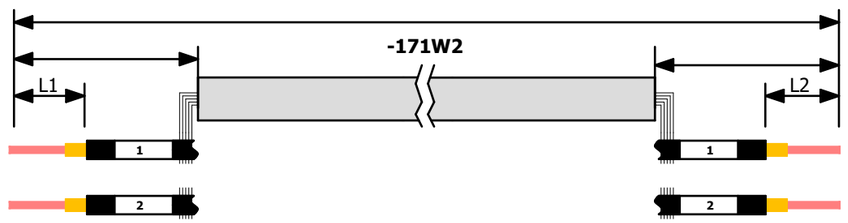


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.4-171F1:1			
Control cabinet 1	+CTRL_1.4-171F1:3			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.4-85U1:DC+	***Control cabinet 1***
			+CTRL_1.4-85U1:DC-	***Control cabinet 1***

Cable name =UNIT_01++CT+-171W2
Cable type OZ-600 2x1,5 mm²
Free conductors 2

Cable parts HELU.10656
Order number 10656



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.4-171F1:2			
Control cabinet 1	+CTRL_1.4-171F1:4			

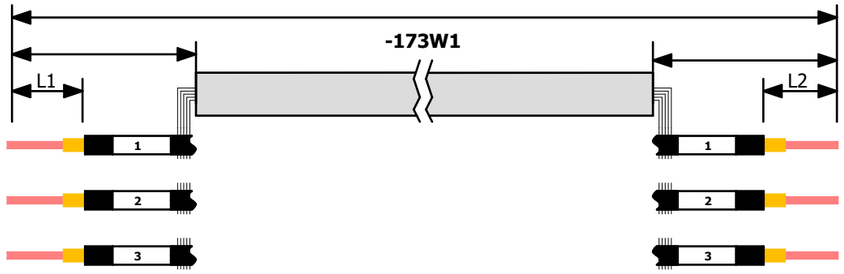
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.4-171K1:A1	***Control cabinet 1***
			+CTRL_1.4-171K2:A1	***Control cabinet 1***

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Cable name =UNIT_01++CT+-173W1
Cable type OZ-600 3x2,5 mm²
Free conductors 3

Cable parts HELU.10691
Order number 10691

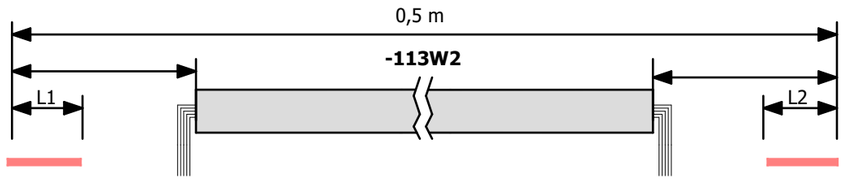


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-UDC+			
Converter cabinet	++CONV+CON-UDC-			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.4-173F2:2	*Control cabinet 1*
			+CTRL_1.4-173F2:4	*Control cabinet 1*

Cable name =UNIT_01++CT+-113W2
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors 2

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN

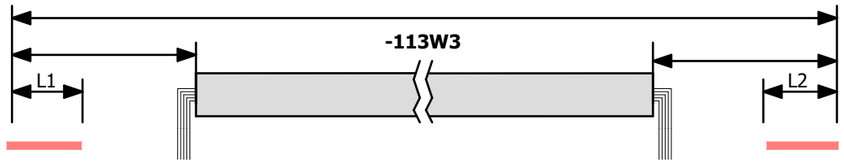


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-113T1:7			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.3-113U1:OUT	*Control cabinet 1*

Cable name =UNIT_01++CT+-113W3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors 2

Cable parts
Order number

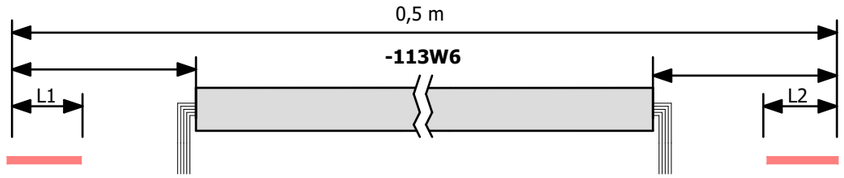


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-113U1:IN			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.3-113U2:8	*Control cabinet 1*

Cable name =UNIT_01++CT+-113W6
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors 2

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN



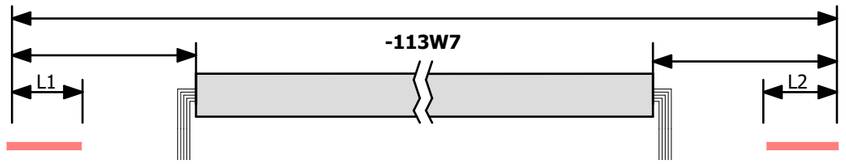
Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.3-113T2:7			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			+CTRL_1.3-113U3:OUT	*Control cabinet 1*

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FRQ_Kabelplan_04_groß_de_en

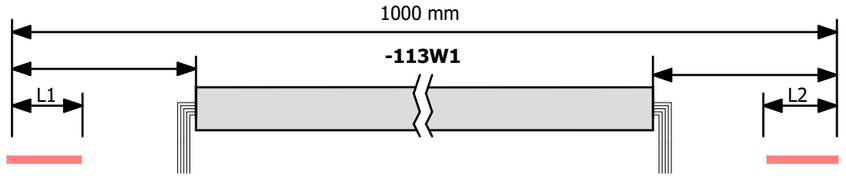
Cable name =UNIT_01++CT+-113W7
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors



Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.3-113U3:IN							+CTRL_1.3-113U4:8	*Control cabinet 1*

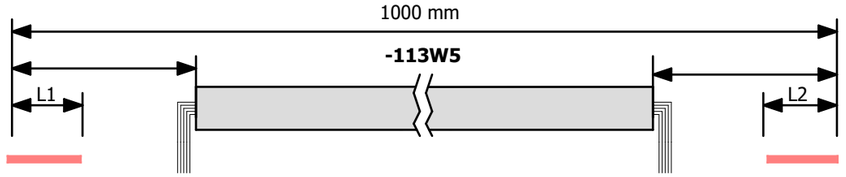
Cable name =UNIT_01++CT+-113W1
Cable type RJ45 / CAT 6 4x2x0,25 mm²
Free conductors



Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.3-111A1:X4:1-8		RJ45 connector			RJ45 connector		+CTRL_1.3-113T1:15	*Control cabinet 1*

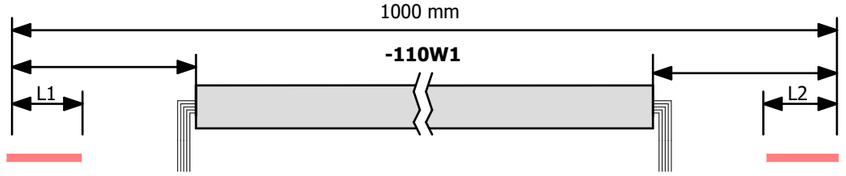
Cable name =UNIT_01++CT+-113W5
Cable type RJ45 / CAT 6 4x2x0,25 mm²
Free conductors



Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.3-111A1:X5:1-8		RJ45 connector			RJ45 connector		+CTRL_1.3-113T2:15	*Control cabinet 1*

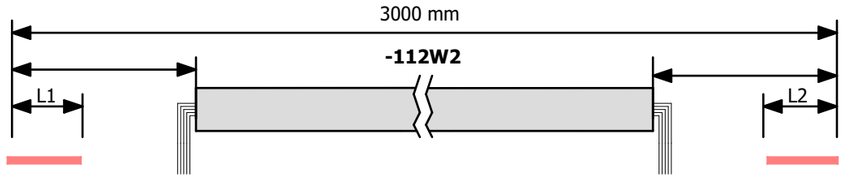
Cable name =UNIT_01++CT+-110W1
Cable type RJ45 / CAT6 4x2x0,25 mm²
Free conductors



Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.2-110U1:P1		RJ45 connector			RJ45 connector		+CTRL_1.3-111A1:X1:1-8	*Control cabinet 1*

Cable name =UNIT_01++CT+-112W2
Cable type RJ45 / CAT6 4x2x0,25 mm²
Free conductors



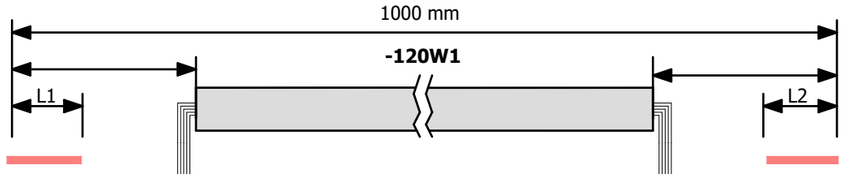
Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	+CTRL_1.1-112A1		RJ45 connector			RJ45 connector		+CTRL_1.3-111A1:X2:1-8	*Control cabinet 1*

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CT+-120W1
Cable type RJ45 / CAT6 4x2x0,25 mm²
Free conductors

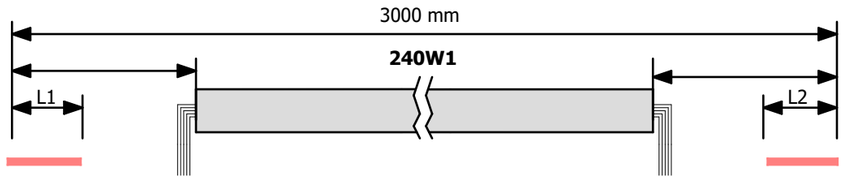


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.2-110U1:P3		RJ45 connector	

Cable parts
Order number

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	RJ45 connector		+CTRL_1.3-120A1:-X1:P1	*Control cabinet 1*

Cable name =UNIT_01++CT+-240W1
Cable type pre-assembled D-Sub cable 1:1
Free conductors

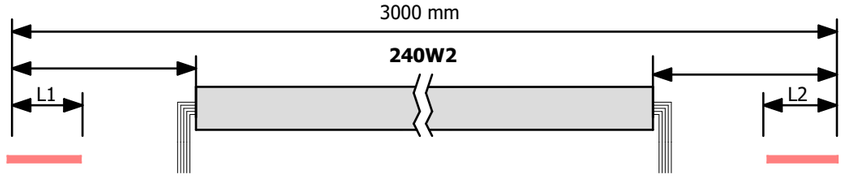


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-201Q1:CTRL		Connector	

Cable parts
Order number

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-240U1:X1	*Control cabinet 2*

Cable name =UNIT_01++CT+-240W2
Cable type pre-assembled D-Sub cable 1:1
Free conductors

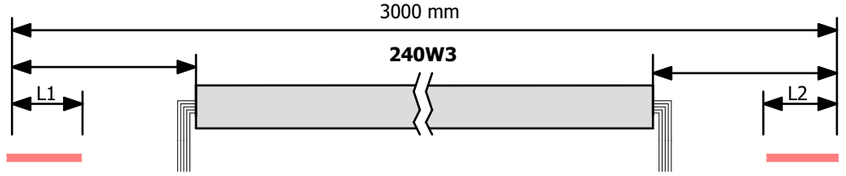


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-202Q1:CTRL		Connector	

Cable parts
Order number

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-240U1:X2	*Control cabinet 2*

Cable name =UNIT_01++CT+-240W3
Cable type pre-assembled D-Sub cable 1:1
Free conductors

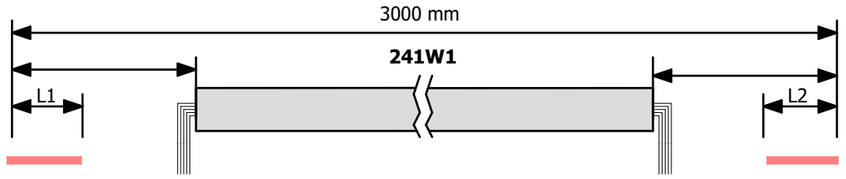


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-203Q1:CTRL		Connector	

Cable parts
Order number

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-240U1:X3	*Control cabinet 2*

Cable name =UNIT_01++CT+-241W1
Cable type pre-assembled D-Sub cable 1:1
Free conductors



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-211Q1-U1:X1		Connector	

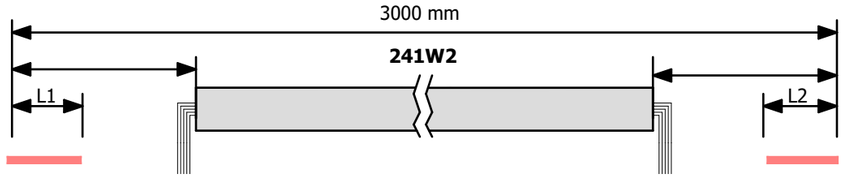
Cable parts
Order number

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-241U1:X1	*Control cabinet 2*

previous page: 7
next page: 9

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CT+-241W2
Cable type pre-assembled D-Sub cable 1:1
Free conductors

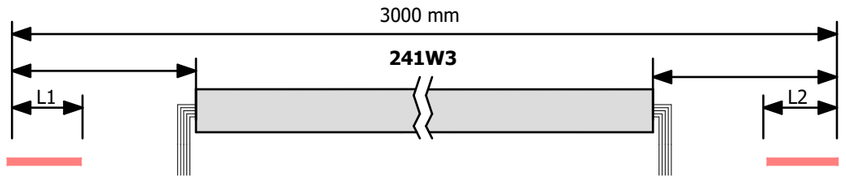


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-211Q1-U1:X2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-241U1:X2	*Control cabinet 2*

Cable name =UNIT_01++CT+-241W3
Cable type pre-assembled D-Sub cable 1:1
Free conductors

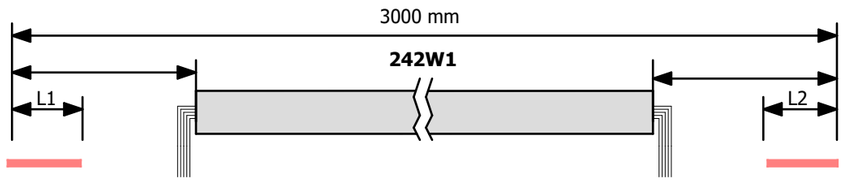


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-211Q1-U1:X3		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-241U1:X3	*Control cabinet 2*

Cable name =UNIT_01++CT+-242W1
Cable type pre-assembled D-Sub cable 1:1
Free conductors

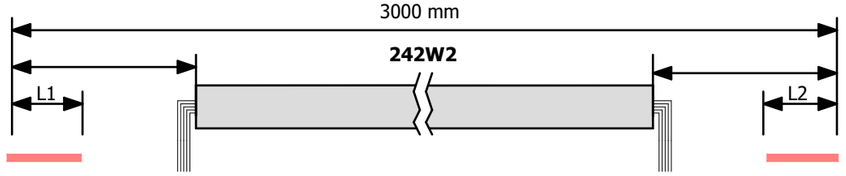


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-207Q1-U1:X1		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-242U1:X1	*Control cabinet 2*

Cable name =UNIT_01++CT+-242W2
Cable type pre-assembled D-Sub cable 1:1
Free conductors

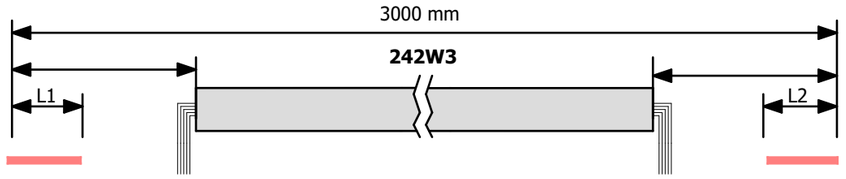


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-207Q1-U1:X2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-242U1:X2	*Control cabinet 2*

Cable name =UNIT_01++CT+-242W3
Cable type pre-assembled D-Sub cable 1:1
Free conductors



Cable parts
Order number

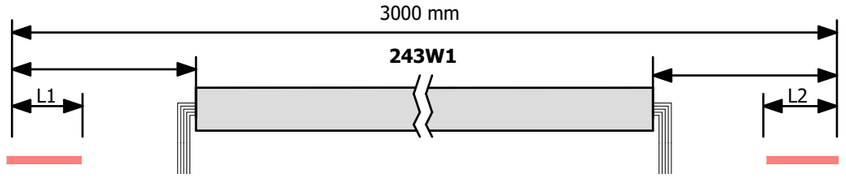
Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-207Q1-U1:X3		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-242U1:X3	*Control cabinet 2*

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMB	Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore				++ CT	Control cabinets	page: 9
Date							10354_23A2007	+		total: 482

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CT+-243W1
Cable type pre-assembled D-Sub cable 1:1
Free conductors

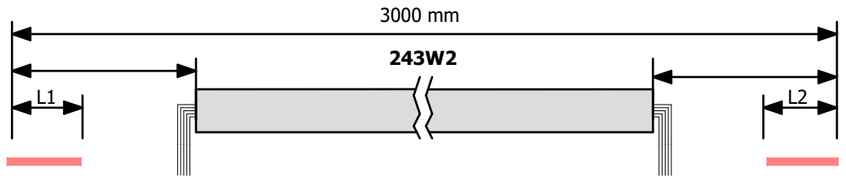


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-217Q1-U1:X1		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-243U1:X1	*Control cabinet 2*

Cable name =UNIT_01++CT+-243W2
Cable type pre-assembled D-Sub cable 1:1
Free conductors

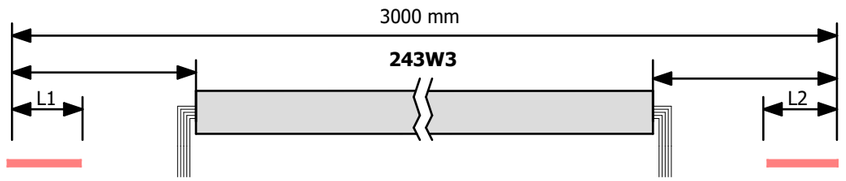


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-217Q1-U1:X2		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-243U1:X2	*Control cabinet 2*

Cable name =UNIT_01++CT+-243W3
Cable type pre-assembled D-Sub cable 1:1
Free conductors

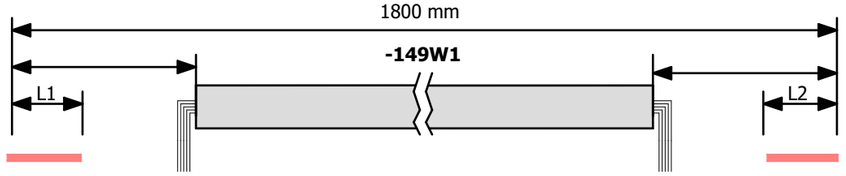


Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Converter cabinet	++CONV+CON-217Q1-U1:X3		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-243U1:X3	*Control cabinet 2*

Cable name =UNIT_01++CT+-149W1
Cable type pre-assembled D-Sub cable 1:1
Free conductors

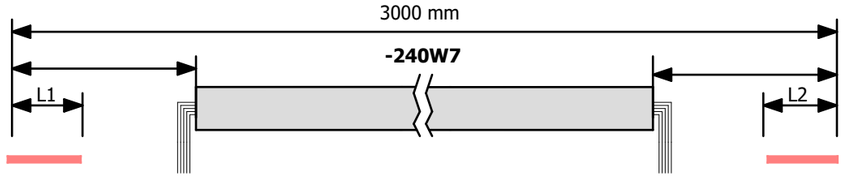


Cable parts DIS.671476
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	+CTRL_1.4-149U1:11X3		Connecor	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Female connector		+CTRL_2.1-162U1:11X3	*Control cabinet 2*

Cable name =UNIT_01++CT+-240W7
Cable type pre-assembled D-Sub cable 1:1
Free conductors



Cable parts DIS.125-30-097
Order number 125-30-097

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-160U1:11X3		Connector	

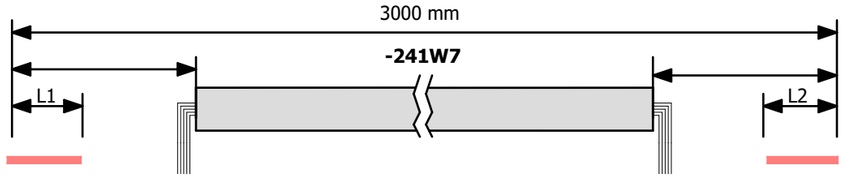
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-240U1:X7	*Control cabinet 2*

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++CT+-241W7
Cable type pre-assembled D-Sub cable 1:1
Free conductors

Cable parts DIS.125-30-097
Order number 125-30-097

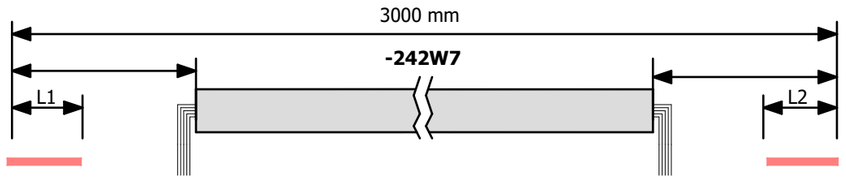


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-161U1:11X3		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-241U1:X7	*Control cabinet 2*

Cable name =UNIT_01++CT+-242W7
Cable type pre-assembled D-Sub cable 1:1
Free conductors

Cable parts DIS.125-30-097
Order number 125-30-097

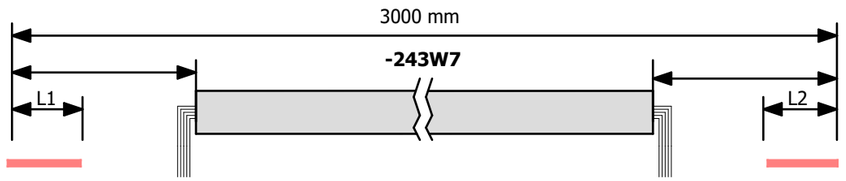


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-163U1:11X3		Connector	

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-242U1:X7	*Control cabinet 2*

Cable name =UNIT_01++CT+-243W7
Cable type pre-assembled D-Sub cable 1:1
Free conductors

Cable parts DIS.125-30-097
Order number 125-30-097



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 2	+CTRL_2.1-164U1:11X3		Connector	

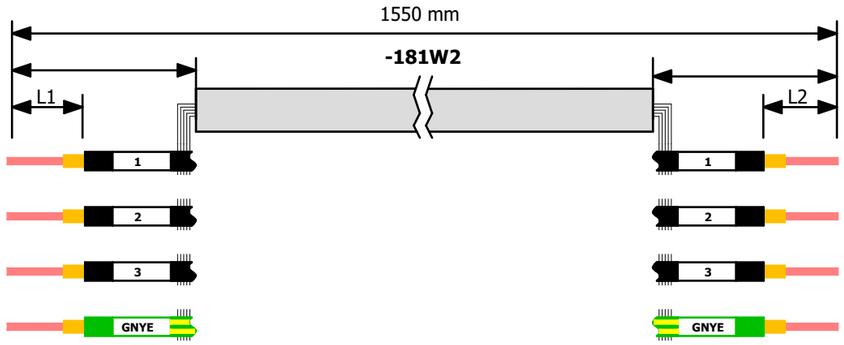
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	Connector		+CTRL_2.1-243U1:X7	*Control cabinet 2*

FRQ_Kabelplan_04_gro8_de_en

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next page: ++FAN/1

Cable name =UNIT_01++FAN+-52G1-181W2
Cable type JZ-600 4G1,5 mm²
Free conductors

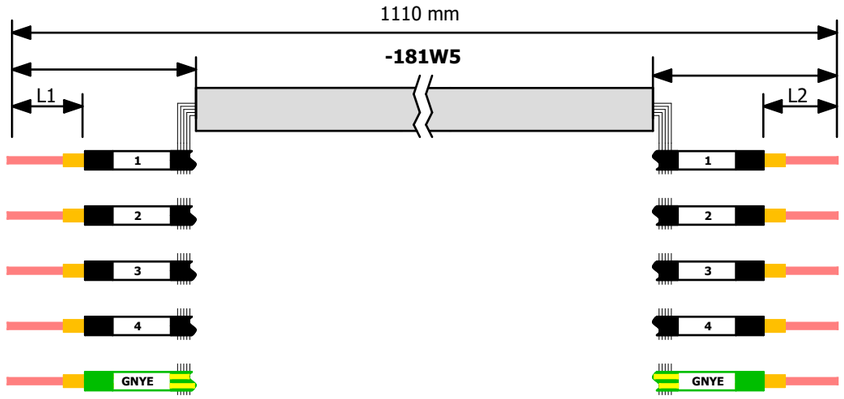
Cable parts HELU.10659
Order number 10659



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	-52G1-181X1:1:2	PUMP	stripped	8 mm	5 mm	Ring cable lug M4	PUMP	-52G1-181M1:U1	
	-52G1-181X1:2:2	=	stripped	8 mm	5 mm	Ring cable lug M4	=	-52G1-181M1:V1	
	-52G1-181X1:3:2	=	stripped	8 mm	5 mm	Ring cable lug M4	=	-52G1-181M1:W1	
	-52G1-181X1:PE:2	=	stripped	8 mm	5 mm	Ring cable lug M4	=	-52G1-181M1:PE	

Cable name =UNIT_01++FAN+-52G1-181W5
Cable type JZ-600 5G1,5 mm²
Free conductors

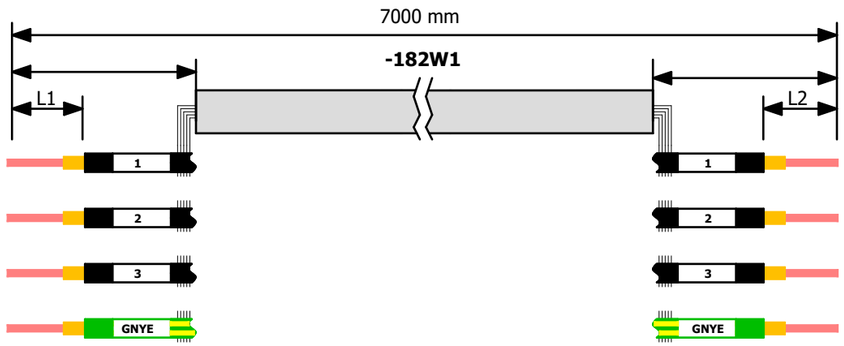
Cable parts HELU.10661
Order number 10661



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	-52G1-181X1:4:2	FUSE FOR PUMP	stripped	8 mm	5 mm	Ring cable lug M4	FUSE FOR PUMP	-52G1-181R1:x1	
	-52G1-181X1:5:2	HEATER	stripped	8 mm	5 mm	Ring cable lug M4	HEATER	-52G1-181R1:x3	
	-52G1-181X1:6:2	=	stripped	8 mm	5 mm	Ring cable lug M4	=	-52G1-181R1:x5	
	-52G1-181X1:7:2	=	stripped	8 mm	5 mm	Ring cable lug M4	=	-52G1-181R1:x6	
	-52G1-181X1:PE:2	=					=	-52G1-181R1:PE	

Cable name =UNIT_01++FAN+-52G1-182W1
Cable type JZ-600 5G1,5 mm²
Free conductors

Cable parts HELU.10659
Order number 10659



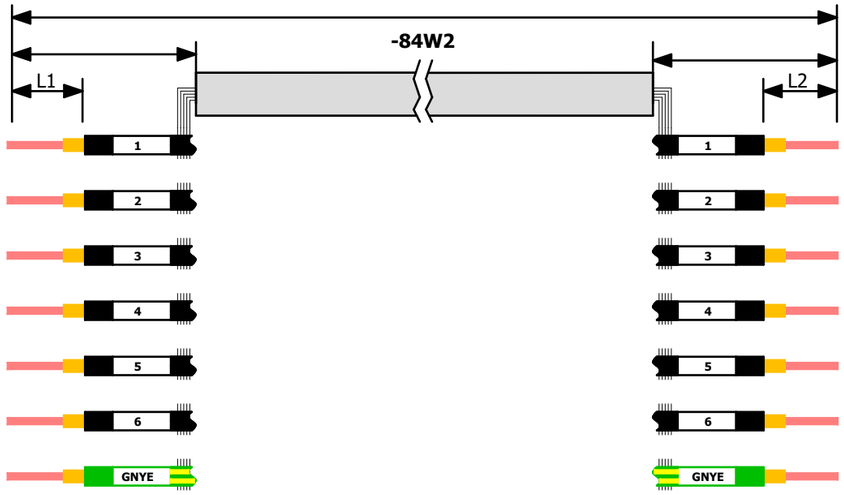
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	-52G1-181X1:8:2	FAN 1 HEAT EXCHANGER	stripped	8 mm	8 mm	End splice	FAN 1 HEAT EXCHANGER	-52G1-182M1:U1	
	-52G1-181X1:9:2	=	stripped	8 mm	8 mm	End splice	=	-52G1-182M1:V1	
	-52G1-181X1:10:2	=	stripped	8 mm	8 mm	End splice	=	-52G1-182M1:W1	
	-52G1-181X1:PE:2	=	stripped	8 mm	8 mm	End splice	=	-52G1-182M1:PE	

previous page: ++CT/11
next page: ++EXTERN/1

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_01++EXTERN+-84W2
Cable type JZ-600 5G16 mm²
Free conductors 7

Cable parts HELU.10150
Order number 10150



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

previous page:
++FAN/1

next page:
&EMZ++CONV+IND/1000

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024							& EMB Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ EXTERN	page: 1
Date								+	total: 482

FRQ_Kabelplan_04_groß_de_en

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-207L1.1				0	0	2	=UNIT_01&EMZ++CONV+IND/2000
-207L1.2				0	0	2	=UNIT_01&EMZ++CONV+IND/2001
-207L1.3				0	0	2	=UNIT_01&EMZ++CONV+IND/2002
-211L1.1				0	0	2	=UNIT_01&EMZ++CONV+IND/2003
-211L1.2				0	0	2	=UNIT_01&EMZ++CONV+IND/2004
-211L1.3				0	0	2	=UNIT_01&EMZ++CONV+IND/2005
-217L1.1				0	0	2	=UNIT_01&EMZ++CONV+IND/2006
-217L1.2				0	0	2	=UNIT_01&EMZ++CONV+IND/2007
-217L1.3				0	0	2	=UNIT_01&EMZ++CONV+IND/2008

previous page:
&EMB++EXTERN+/1

next page:
2000

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+IND-207L1.1

Cable name: -146W3

Cable type: F-CY-OZ (LiY-CY)

Function text		Cable	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable	Page / column
INDUCTOR DC SUB 3_1 TEMPERATURE 3_1		1	++CT+CTRL_1.3-X5	13		▮	-207L1.1	x2		&EFS++CT+/146.5
=		2	++CT+CTRL_1.3-X5	14		▮	-207L1.1	x1		&EFS++CT+/146.5

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+IND-207L1.2

Cable name: -146W4
Cable type: F-CY-OZ (LiY-CY)

Function text		Cable	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable	Page / column
INDUCTOR DC SUB 3_2 TEMPERATURE 3_2		1	++CT+CTRL_1.3-X5	15		•	-207L1.2	x2		&EFS++CT+/146.7
=		2	++CT+CTRL_1.3-X5	16		•	-207L1.2	x1		&EFS++CT+/146.7

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_01++CONV+IND-207L1.2	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024				& EMZ Terminals	
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore		10354_23A2007	++ CONV Converter	page: 2001
Date					+ IND Inductor cabinet	total: 482

FREQCON

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_01++CONV+IND-207L1.3

Cable name: -147W1
Cable type: F-CY-OZ (LiY-CY)

Function text			-147W1 / F-CY-OZ (LiY-CY)	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
INDUCTOR DC SUB 3_3 TEMPERATURE 3_3			1		++CT+CTRL_1.3-X5	17		•	-207L1.3	x2		&EFS++CT+/147.1
=			2		++CT+CTRL_1.3-X5	18		•	-207L1.3	x1		&EFS++CT+/147.1

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_01++CONV+IND-207L1.3
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by		FREQCON	10354_23A2007
Date			

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CONV	Converter	page: 2002
+	IND	Inductor cabinet	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text			-145W4	Cable name	Strip =UNIT_01++CONV+IND-211L1.1						Cable name												Page / column
			F-CY-0Z (LIY-CY)	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
INDUCTOR DC SUB 2_1 TEMPERATURE 2_1			1		++CT+CTRL_1.3-X5	7		,	-211L1.1	x2													&EFS++CT+/145.7
=			2		++CT+CTRL_1.3-X5	8		,	-211L1.1	x1													&EFS++CT+/145.7

previous page: 2002

next page: 2004

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+IND-211L1.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter page: 2003
Date								+ IND Inductor cabinet total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+IND-211L1.2

Cable name: -146W1

Cable type: F-CY-OZ (LiY-CY)

Function text			-146W1 / F-CY-OZ (LiY-CY)	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
INDUCTOR DC SUB 2_2 TEMPERATURE 2_2			1		++CT+CTRL_1.3-X5	9			-211L1.2	x2		&EFS++CT+/146.1
=			2		++CT+CTRL_1.3-X5	10			-211L1.2	x1		&EFS++CT+/146.1

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

Klemmenplan =UNIT_01++CONV+IND-211L1.2

20240809_V0.7

10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CONV	Converter	page: 2004
+	IND	Inductor cabinet	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text			-146W2 / F-CY-OZ (LiY-CY)	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
					Strip =UNIT_01++CONV+IND-211L1.3							
INDUCTOR DC SUB 2_3 TEMPERATURE 2_3			1		++CT+CTRL_1.3-X5	11		•	-211L1.3	x2		&EFS++CT+/146.3
=			2		++CT+CTRL_1.3-X5	12		•	-211L1.3	x1		&EFS++CT+/146.3

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

FREQCON

Klemmenplan =UNIT_01++CONV+IND-211L1.3

20240809_V0.7

10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CONV	Converter	page: 2005
+	IND	Inductor cabinet	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text			-147W2	Cable name	Strip =UNIT_01++CONV+IND-217L1.1						Cable name												Page / column
			F-CY-0Z (LIY-CY)	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
INDUCTOR DC SUB 4_1 TEMPERATURE 4_1			1		++CT+CTRL_1.3-X5	19		,	-217L1.1	x2													&EFS++CT+/147.3
=			2		++CT+CTRL_1.3-X5	20		,	-217L1.1	x1													&EFS++CT+/147.3

previous page: 2005

next page: 2007

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+IND-217L1.2

Cable name: -148W1

Cable type: F-CY-OZ (LiY-CY)

Function text			-148W1 / F-CY-OZ (LiY-CY)	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
INDUCTOR DC SUB 4_2 TEMPERATURE 4_2			1		++CT+CTRL_1.3-X5	25		•	-217L1.2	x2		&EFS++CT+/148.3
=			2		++CT+CTRL_1.3-X5	26		•	-217L1.2	x1		&EFS++CT+/148.3

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

FREQCON

Klemmenplan =UNIT_01++CONV+IND-217L1.2

20240809_V0.7

10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CONV	Converter	page: 2007
+	IND	Inductor cabinet	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text			-148W2	Cable name	Strip =UNIT_01++CONV+IND-217L1.3						Cable name												Page / column
			F-CY-OZ (LIY-CY)	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
INDUCTOR DC SUB 4_3 TEMPERATURE 4_3			1		++CT+CTRL_1.3-X5	29		,	-217L1.3	x2													&EFS++CT+/148.7
=			2		++CT+CTRL_1.3-X5	30		,	-217L1.3	x1													&EFS++CT+/148.7

previous page: 2007

next page: +CIR/1000

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+IND-217L1.3	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2008
Date								+ IND Inductor cabinet — total: 482

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-227U1-X3.1	DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen	1	PE	1	0	18	=UNIT_01&EMZ++CONV+CIR/2000
-227U1-X3.2	=	1	PE	2	0	28	=UNIT_01&EMZ++CONV+CIR/2001
-231U1-X3.1	=	1	PE	1	0	18	=UNIT_01&EMZ++CONV+CIR/2002
-231U1-X3.2	=	1	PE	2	0	28	=UNIT_01&EMZ++CONV+CIR/2003
-237U1-X3.1	=	1	PE	1	0	18	=UNIT_01&EMZ++CONV+CIR/2004
-237U1-X3.2	=	1	PE	2	0	28	=UNIT_01&EMZ++CONV+CIR/2005

previous page: +IND/2008

next page: 2000

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-227U1-X3.1

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text			-227W4	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-227U1-W5	Page / column
			0Z-500	Cable type							Cable type	1Z-500	
			1		++CT+CTRL_1.4-350X1.21	1	1	,	-227U1-X3.2	1		1	&EFS+/227.a.1
			2		++CT+CTRL_1.4-350X1.21	4	2	,	-227U1-X3.2	3		2	&EFS+/227.a.2
			3		++CT+CTRL_1.4-350X1.21	7	3	,	-227U1-X3.2	5		3	&EFS+/227.a.2
			4		++CT+CTRL_1.4-350X1.21	3	4	,	-227U1-X3.2	7		4	&EFS+/227.a.3
			5		++CT+CTRL_1.4-350X1.21	6	5	,	-227U1-X3.2	9		5	&EFS+/227.a.4
			6		++CT+CTRL_1.4-350X1.21	9	6	,	-227U1-X3.2	11		6	&EFS+/227.a.5
			7		++CT+CTRL_1.4-307K1	A1	7	,	-227U1-X3.2	13		7	&EFS+/227.a.5
			8		++CT+CTRL_1.4-307K3	A1	8	,	-227U1-X3.2	15		8	&EFS+/227.a.6
			9		++CT+CTRL_1.4-307K5	A1	9	,	-227U1-X3.2	17		9	&EFS+/227.a.6
			10		++CT+CTRL_1.4-307K2	A1	10	,	-227U1-X3.2	19		10	&EFS+/227.a.6
			11		++CT+CTRL_1.4-307K4	A1	11	,	-227U1-X3.2	21		11	&EFS+/227.a.7
			12		++CT+CTRL_1.4-307K6	A1	12	,	-227U1-X3.2	23		12	&EFS+/227.a.7
			13		++CT+CTRL_1.3-X3.11	11	13	,	-227U1-F1	2			&EFS+/227.a.7
			14		++CT+CTRL_1.3-X3.12	9	14	,	-227U1-F5	2			&EFS+/227.a.8
			15		++CT+CTRL_1.3-X3.12	11	15	,	-227U1-F9	2			&EFS+/227.a.8
			16		++CT+CTRL_1.3-X3.12	10	16	,	-227U1-F2	1			&EFS+/227.a.9
									-227U1-X3.2	24		13	
			17		++CT+CTRL_1.4-350X1.21	2	17	,	-227U1-X3.2	12		14	&EFS+/227.a.9
							PE	,	-227U1-X3.2	PE		GNYE	&EFS+/227.a.9

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next page: 2001

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-227U1-X3.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2000
Date								+ CIR Circuit Breaker cabinet — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-227U1-X3.2

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text				Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-227U1-W5										Page / column
				Cable type							Cable type	JZ-500										
							1		-227U1-X3.1	1		1										&EFS+/227.a.1
							2															&EFS+/227.a.1
							3		-227U1-X3.1	2		2										&EFS+/227.a.2
							4															&EFS+/227.a.2
							5		-227U1-X3.1	3		3										&EFS+/227.a.2
							6															&EFS+/227.a.2
							7		-227U1-X3.1	4		4										&EFS+/227.a.3
							8															&EFS+/227.a.3
							9		-227U1-X3.1	5		5										&EFS+/227.a.4
							10															&EFS+/227.a.4
							11		-227U1-X3.1	6		6										&EFS+/227.a.5
							12		-227U1-X3.1	17		14										&EFS+/227.a.5
							13		-227U1-X3.1	7		7										&EFS+/227.a.5
							14															&EFS+/227.a.5
							15		-227U1-X3.1	8		8										&EFS+/227.a.6
							16															&EFS+/227.a.6
							17		-227U1-X3.1	9		9										&EFS+/227.a.6
							18															&EFS+/227.a.6
							19		-227U1-X3.1	10		10										&EFS+/227.a.6
							20															&EFS+/227.a.6
							21		-227U1-X3.1	11		11										&EFS+/227.a.7
							22															&EFS+/227.a.7
							23		-227U1-X3.1	12		12										&EFS+/227.a.7
							24		-227U1-X3.1	16		13										&EFS+/227.a.7
							PE															&EFS+/227.a.5
							PE		-227U1-X3.1	PE		GNYE										&EFS+/227.a.5

previous page:
2000

next page:
2002

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-227U1-X3.2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2001
Date								+ CIR Circuit Breaker cabinet — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-231U1-X3.1

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text			-231W4	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-231U1-W5	Page / column
			0Z-500	Cable type							Cable type	JZ-500	
			1		++CT+CTRL_1.3-150X1	1	1	,	-231U1-X3.2	1		1	&EFS+/231.a.1
			2		++CT+CTRL_1.3-150X1	4	2	,	-231U1-X3.2	3		2	&EFS+/231.a.2
			3		++CT+CTRL_1.3-150X1	7	3	,	-231U1-X3.2	5		3	&EFS+/231.a.2
			4		++CT+CTRL_1.3-150X1	3	4	,	-231U1-X3.2	7		4	&EFS+/231.a.3
			5		++CT+CTRL_1.3-150X1	6	5	,	-231U1-X3.2	9		5	&EFS+/231.a.4
			6		++CT+CTRL_1.3-150X1	9	6	,	-231U1-X3.2	11		6	&EFS+/231.a.5
			7		++CT+CTRL_1.4-306K1	A1	7	,	-231U1-X3.2	13		7	&EFS+/231.a.5
			8		++CT+CTRL_1.4-306K3	A1	8	,	-231U1-X3.2	15		8	&EFS+/231.a.6
			9		++CT+CTRL_1.4-306K5	A1	9	,	-231U1-X3.2	17		9	&EFS+/231.a.6
			10		++CT+CTRL_1.4-306K2	A1	10	,	-231U1-X3.2	19		10	&EFS+/231.a.6
			11		++CT+CTRL_1.4-306K4	A1	11	,	-231U1-X3.2	21		11	&EFS+/231.a.7
			12		++CT+CTRL_1.4-306K6	A1	12	,	-231U1-X3.2	23		12	&EFS+/231.a.7
			13		++CT+CTRL_1.3-X3.10	9	13	,	-231U1-F1	2			&EFS+/231.a.7
			14		++CT+CTRL_1.3-X3.10	11	14	,	-231U1-F5	2			&EFS+/231.a.8
			15		++CT+CTRL_1.3-X3.11	9	15	,	-231U1-F9	2			&EFS+/231.a.8
			16		++CT+CTRL_1.3-X3.10	10	16	,	-231U1-F2	1			&EFS+/231.a.9
									-231U1-X3.2	24		13	
			17		++CT+CTRL_1.3-150X1	2	17	,	-231U1-X3.2	12		14	&EFS+/231.a.9
							PE	,	-231U1-X3.2	PE		GNYE	&EFS+/231.a.9

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-231U1-X3.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter page: 2002
Date								+ CIR Circuit Breaker cabinet total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-231U1-X3.2

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text				Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-231U1-W5										Page / column
				Cable type							Cable type	JZ-500										
							1		-231U1-X3.1	1		1										&EFS+/231.a.1
							2															&EFS+/231.a.1
							3		-231U1-X3.1	2		2										&EFS+/231.a.2
							4															&EFS+/231.a.2
							5		-231U1-X3.1	3		3										&EFS+/231.a.2
							6															&EFS+/231.a.2
							7		-231U1-X3.1	4		4										&EFS+/231.a.3
							8															&EFS+/231.a.3
							9		-231U1-X3.1	5		5										&EFS+/231.a.4
							10															&EFS+/231.a.4
							11		-231U1-X3.1	6		6										&EFS+/231.a.5
							12		-231U1-X3.1	17		14										&EFS+/231.a.5
							13		-231U1-X3.1	7		7										&EFS+/231.a.5
							14															&EFS+/231.a.5
							15		-231U1-X3.1	8		8										&EFS+/231.a.6
							16															&EFS+/231.a.6
							17		-231U1-X3.1	9		9										&EFS+/231.a.6
							18															&EFS+/231.a.6
							19		-231U1-X3.1	10		10										&EFS+/231.a.6
							20															&EFS+/231.a.6
							21		-231U1-X3.1	11		11										&EFS+/231.a.7
							22															&EFS+/231.a.7
							23		-231U1-X3.1	12		12										&EFS+/231.a.7
							24		-231U1-X3.1	16		13										&EFS+/231.a.7
							PE															&EFS+/231.a.5
							PE		-231U1-X3.1	PE		GNYE										&EFS+/231.a.5

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-231U1-X3.2	20240809_V0.7
Date	02.07.2024				
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date					

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CONV	Converter	page: 2003
+	CIR	Circuit Breaker cabinet	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-237U1-X3.1

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text			-237W4	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-237U1-W5	Page / column
			0Z-500	Cable type							Cable type	JZ-500	
			1		++CT+CTRL_1.4-350X1.22	11	1	,	-237U1-X3.2	1		1	&EFS+/237.a.1
			2		++CT+CTRL_1.4-350X1.21	4	2	,	-237U1-X3.2	3		2	&EFS+/237.a.2
			3		++CT+CTRL_1.4-350X1.21	7	3	,	-237U1-X3.2	5		3	&EFS+/237.a.2
			4		++CT+CTRL_1.4-350X1.22	13	4	,	-237U1-X3.2	7		4	&EFS+/237.a.3
			5		++CT+CTRL_1.4-350X1.21	6	5	,	-237U1-X3.2	9		5	&EFS+/237.a.4
			6		++CT+CTRL_1.4-350X1.21	9	6	,	-237U1-X3.2	11		6	&EFS+/237.a.5
			7		++CT+CTRL_1.4-308K1	A1	7	,	-237U1-X3.2	13		7	&EFS+/237.a.5
			8		++CT+CTRL_1.4-308K3	A1	8	,	-237U1-X3.2	15		8	&EFS+/237.a.6
			9		++CT+CTRL_1.4-308K5	A1	9	,	-237U1-X3.2	17		9	&EFS+/237.a.6
			10		++CT+CTRL_1.4-308K2	A1	10	,	-237U1-X3.2	19		10	&EFS+/237.a.6
			11		++CT+CTRL_1.4-308K4	A1	11	,	-237U1-X3.2	21		11	&EFS+/237.a.7
			12		++CT+CTRL_1.4-308K6	A1	12	,	-237U1-X3.2	23		12	&EFS+/237.a.7
			13		++CT+CTRL_1.3-X3.13	8	13	,	-237U1-F1	2			&EFS+/237.a.7
			14		++CT+CTRL_1.3-X3.13	9	14	,	-237U1-F5	2			&EFS+/237.a.8
			15		++CT+CTRL_1.3-X3.13	11	15	,	-237U1-F9	2			&EFS+/237.a.8
			16		++CT+CTRL_1.3-X3.13	10	16	,	-237U1-F2	1			&EFS+/237.a.9
									-237U1-X3.2	24		13	
			17		++CT+CTRL_1.4-350X1.22	12	17	,	-237U1-X3.2	12		14	&EFS+/237.a.9
							PE	,	-237U1-X3.2	PE		GNYE	&EFS+/237.a.9

previous page: 2003

next page: 2005

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-237U1-X3.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2004
Date								+ CIR Circuit Breaker cabinet — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CONV+CIR-237U1-X3.2

DC Schalter + Sicherungen-Ansteuerungen und Rückmeldungen

Function text				Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-237U1-W5										Page / column
				Cable type							Cable type	JZ-500										
							1		-237U1-X3.1	1		1										&EFS+/237.a.1
							2															&EFS+/237.a.1
							3		-237U1-X3.1	2		2										&EFS+/237.a.2
							4															&EFS+/237.a.2
							5		-237U1-X3.1	3		3										&EFS+/237.a.2
							6															&EFS+/237.a.2
							7		-237U1-X3.1	4		4										&EFS+/237.a.3
							8															&EFS+/237.a.3
							9		-237U1-X3.1	5		5										&EFS+/237.a.4
							10															&EFS+/237.a.4
							11		-237U1-X3.1	6		6										&EFS+/237.a.5
							12		-237U1-X3.1	17		14										&EFS+/237.a.5
							13		-237U1-X3.1	7		7										&EFS+/237.a.5
							14															&EFS+/237.a.5
							15		-237U1-X3.1	8		8										&EFS+/237.a.6
							16															&EFS+/237.a.6
							17		-237U1-X3.1	9		9										&EFS+/237.a.6
							18															&EFS+/237.a.6
							19		-237U1-X3.1	10		10										&EFS+/237.a.6
							20															&EFS+/237.a.6
							21		-237U1-X3.1	11		11										&EFS+/237.a.7
							22															&EFS+/237.a.7
							23		-237U1-X3.1	12		12										&EFS+/237.a.7
							24		-237U1-X3.1	16		13										&EFS+/237.a.7
							PE															&EFS+/237.a.5
							PE		-237U1-X3.1	PE		GNYE										&EFS+/237.a.5

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2004

next page:
+AC_DC/1000

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+CIR-237U1-X3.2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2005
Date								+ CIR Circuit Breaker cabinet — total: 482

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-X3.43		1	20	0	0	40	=UNIT_01&EMZ++CONV+AC_DC/2000

previous page:
+CIR/2005

next page:
2000

Terminal diagram

Freqcon_F13_001_02

Function text	-238W3 OZ-500	-238W2 OZ-500	-238W1 OZ-500	Cable name / Cable type	Strip =UNIT_01++CONV+AC_DC-X3.43 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	-238W7 OZ-500	Page / column
SURGE ARRESTER DC SUBSYSTEM 2_1			1		-238F1	11	1	,	++CT+CTRL_1.3-X3	5		1	&EFS+/238a.2
								,					
SURGE ARRESTER DC SUBSYSTEM 2_1			2		-238F1	12	2	,	-X3.43	3			&EFS+/238a.2
								,					
SURGE ARRESTER DC SUBSYSTEM 2_2		1			-238F2	11	3	,	-X3.43	2			&EFS+/238a.5
								,					
SURGE ARRESTER DC SUBSYSTEM 2_2		2			-238F2	12	4	,	-X3.43	5			&EFS+/238a.5
								,					
SURGE ARRESTER DC SUBSYSTEM 2_3	1				-238F3	11	5	,	-X3.43	4			&EFS+/238a.9
								,					
SURGE ARRESTER DC SUBSYSTEM 2_3	2				-238F3	12	6	,	-X3.43	7			&EFS+/238a.9
SURGE ARRESTER DC SUBSYSTEM 2_3	2				-238F3	12	6	,	-X3.43	7			&EFS+/238a.9
								,					

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next page: 2001

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CONV Converter — page: 2000
Date								+ AC_DC AC and DC connection cabinet — total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	-228W3 OZ-500	-228W2 OZ-500	-228W1 OZ-500	Cable name / Cable type	Strip =UNIT_01++CONV+AC_DC-X3.43 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
SURGE ARRESTER DC SUBSYSTEM 3_1			1		-228F1	11	7	,	-X3.43	6		&EFS+/228.2
								,				
SURGE ARRESTER DC SUBSYSTEM 3_1			2		-228F1	12	8	,	-X3.43	9		&EFS+/228.2
								,				
SURGE ARRESTER DC SUBSYSTEM 3_2		1			-228F2	11	9	,	-X3.43	8		&EFS+/228.5
								,				
SURGE ARRESTER DC SUBSYSTEM 3_2		2			-228F2	12	10	,	-X3.43	11		&EFS+/228.5
								,				
SURGE ARRESTER DC SUBSYSTEM 3_3	1				-228F3	11	11	,	-X3.43	10		&EFS+/228.9
								,				
SURGE ARRESTER DC SUBSYSTEM 3_3	2				-228F3	12	12	,	-X3.43	13		&EFS+/228.9
								,				

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Terminal diagram

Freqcon_F13_001_02

Function text	-238W6 OZ-500	-238W5 OZ-500	-238W4 OZ-500	Cable name / Cable type	Strip =UNIT_01++CONV+AC_DC-X3.43 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
SURGE ARRESTER DC SUBSYSTEM 4_1			1		-238F4	11	13	,	-X3.43	12		&EFS+/238b.2
								,				
SURGE ARRESTER DC SUBSYSTEM 4_1			2		-238F4	12	14	,	-X3.43	15		&EFS+/238b.2
								,				
SURGE ARRESTER DC SUBSYSTEM 4_2		1			-238F5	11	15	,	-X3.43	14		&EFS+/238b.5
								,				
SURGE ARRESTER DC SUBSYSTEM 4_2		2			-238F5	12	16	,	-X3.43	17		&EFS+/238b.5
								,				
SURGE ARRESTER DC SUBSYSTEM 4_3	1				-238F6	11	17	,	-X3.43	16		&EFS+/238b.9
								,				
SURGE ARRESTER DC SUBSYSTEM 4_3	2				-238F6	12	18	,	-X3.43	19		&EFS+/238b.9
								,				

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next page: 2003

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_01++CONV+AC_DC-X3.43

Function text			Cable name: -78W7 / Cable type: OZ-500		Target designation	Connection point	Terminal	Jumper	Target designation	Connection point		Cable name: -238W7 / Cable type: OZ-500	Page / column
			2		-78F1	14	19	.	-X3.43	18			&EFS+/78.8
								.					
			1		-78F1	13	20	.	++CT+CTRL_1.3-X3	6		2	&EFS+/78.8
								.					

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_01++CONV+AC_DC-X3.43	20240809_V0.7	= UNIT_01 Converter Container 1	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore			& EMZ Terminals	
Proved by				10354_23A2007	++ CONV Converter	page: 2003
Date					+ AC_DC AC and DC connection cabinet	total: 482

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-XT1		1	14	0	0	20	

previous page:
++CONV+AC_DC/2003

next page:
+CTRL_1.3/1000

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-X1	Hauptsteuerstromkreis 400V/230V AC	1	PE	4	1	17	=UNIT_01&EMZ++CT+CTRL_1.3/2000
-X3	CONTROL VOLTAGE 24V DC	1	46	0	0	45	=UNIT_01&EMZ++CT+CTRL_1.3/2001
-X3.10	Rückmeldung DC Schütze Subsystem 1_4	1	12	0	0	15	=UNIT_01&EMZ++CT+CTRL_1.3/2003
-X3.11	=	1	12	0	0	15	=UNIT_01&EMZ++CT+CTRL_1.3/2004
-X3.12	=	1	12	0	0	12	=UNIT_01&EMZ++CT+CTRL_1.3/2005
-X3.13	Rückmeldung DC Schütze Subsystem 1_6	1	12	0	0	12	=UNIT_01&EMZ++CT+CTRL_1.3/2006
-X5	Kleinspannungssignale	1	30	0	0	30	=UNIT_01&EMZ++CT+CTRL_1.3/2007
-X5.1	DC Subsystem Spannungsmessung	1	2	0	0	4	=UNIT_01&EMZ++CT+CTRL_1.3/2009
-150X1	Subsysteme DC Schütz EIN	1	10	0	0	10	=UNIT_01&EMZ++CT+CTRL_1.3/2010
-XDC1	Steuerspannung 24VDC (USV) DC1	1	PE	2	0	16	=UNIT_01&EMZ++CT+CTRL_1.3/2011
-XDC2	Steuerspannung 24VDC (USV) DC2	1	4	0	0	8	=UNIT_01&EMZ++CT+CTRL_1.3/2013
-XDC3	Steuerspannung 24VDC (USV) DC3	1	4	0	0	8	=UNIT_01&EMZ++CT+CTRL_1.3/2016
-XDC4	Steuerspannung 24VDC (USV) DC4	1	4	0	0	8	=UNIT_01&EMZ++CT+CTRL_1.3/2017
-XDC5.1	Steuerspannung 24VDC (USV) DC5.1	1	1	0	0	2	=UNIT_01&EMZ++CT+CTRL_1.3/2018
-XDC5.2	Steuerspannung 24VDC (USV) DC5.2	1	1	0	0	2	=UNIT_01&EMZ++CT+CTRL_1.3/2019
-XE	Hauptstromversorgung 400V AC	1	6	3	3	13	=UNIT_01&EMZ++CT+CTRL_1.3/2020
-XT	Transfer Klemmenblock 24VDC/230VAC	1	16	6	0	22	=UNIT_01&EMZ++CT+CTRL_1.3/2021
-190XT1	230VAC Beleuchtung/Klimaanlage Container/Schrank	1	PE	4	4	12	=UNIT_01&EMZ++CT+CTRL_1.3/2023
-191XT1		1	PE	2	2	10	=UNIT_01&EMZ++CT+CTRL_1.3/2024
-XV	Suppression TVS Diode	1	4	0	0	9	=UNIT_01&EMZ++CT+CTRL_1.3/2025

previous page: +/1000

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenleistenübersicht : =UNIT_01++CT+CTRL_1.3-X1 - =UNIT_01++CT+CTRL_1.3-XV	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 1000
Date								+ CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X1

Hauptsteuerstromkreis 400V/230V AC

Function text			-181W1	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Page / column
			1Z-600	Cable type							Cable type	
PUMP			1		++FAN-52G1-181X1	1:1	1	,	-139K2	2		&EFS+/181.1
=			2		++FAN-52G1-181X1	2:1	2	,	-139K2	4		&EFS+/181.1
=			3		++FAN-52G1-181X1	3:1	3	,	-139K2	6		&EFS+/181.1
=			GNYE		++FAN-52G1-181X1	PE:1	PE	,	+.2-110U1-PE			&EFS+/181.1
FUSE FOR PUMP			4		++FAN-52G1-181X1	4:1	4	,	-139K1	2		&EFS+/181.3
HEATER			5		++FAN-52G1-181X1	5:1	5	,	-139K1	4		&EFS+/181.4
=			6		++FAN-52G1-181X1	6:1	6	,	-139K1	6		&EFS+/181.4
=			7		++FAN-52G1-181X1	7:1	7	,	-XE	N:1		&EFS+/181.4
=							PE	,				&EFS+/181.4
FAN 1 HEAT EXCHANGER			8		++FAN-52G1-181X1	8:1	8	,	-139K3	2		&EFS+/182.1
=			9		++FAN-52G1-181X1	9:1	9	,	-139K3	4		&EFS+/182.1
=			10		++FAN-52G1-181X1	10:1	10	,	-139K3	6		&EFS+/182.1
=							PE	,				&EFS+/182.1
FAN 2 HEAT EXCHANGER OPTIONAL							11	,				&EFS+/182.3
=							12	,				&EFS+/182.4
=							13	,				&EFS+/182.4
=							PE	,				&EFS+/182.4

previous page: 1000

next page: 2001

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 2000
Date								+ CTRL_1.3 Main mounting plate total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++CONV-80W1 OZ-500	-181W3 F-CY-OZ (LIY-CY)	++CONV-260W1 OZ-500	Cable name / Cable type	Strip =UNIT_01++CT+CTRL_1.3-X3 CONTROL VOLTAGE 24V DC — Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++CONV-80W1 OZ-500	++CONV-238W7 OZ-500	++TRA-629W1 OZ-500	++CONV-260W1 OZ-500	-181W3 F-CY-OZ (LIY-CY)							Page / column
CB 1 Tripped GRID					-DI_02	5	1		++CONV+CIR-80Q1	X7_13		1											&EFS+/127.1
CB 1 OFF GRID					-DI_02	4	2		++CONV+CIR-80Q1	X6_9		2											&EFS+/127.3
CB 1 ON GRID					-DI_02	3	3		++CONV+CIR-80Q1	X6_11		3											&EFS+/127.2
FUSE AND LIGHTNING PROTECTION							4		+.4-189X1	5													&EFS+/127.4
=					-XDC4	2	5		++CONV+AC_DC-X3.43	1			1										&EFS+/127.5
=					-DI_02	6	6		++CONV+AC_DC-X3.43	20			2										&EFS+/127.4
=					-X3	13	7		-134K1	11													&EFS+/127.5
CB 2 Tripped ISLAND GRID					-DI_04	12	8																&EFS+/128.1
CB 2 OFF ISLAND GRID					-DI_04	14	9																&EFS+/128.3
CB 2 ON ISLAND GRID					-DI_04	13	10																&EFS+/128.2
FUSE AND LIGHTNING PROTECTION 2							11																&EFS+/128.4
=					-DI_04	15	12																&EFS+/128.4
=					-X3	7	13																&EFS+/128.5
SPARE					-DI_04	1	14		+.2-18B1	4													&EFS+/133.1
SPARE					-DI_04	2	15		+.2-18B1	1													&EFS+/133.2
SPARE					-DI_04	3	16		+.2-18B1	4													&EFS+/133.3
Fuse 230V AC for Container Air Conditioning					-DI_04	11	17		-190F3	14													&EFS+/133.6
Earthing switch in On Transformer 620V side					-DI_04	5	18		++CONV-18Q1	14				2									&EFS+/133.9
Smoke detector CON					-DI_02	7	19		++CONV+CON-260B1	4					1								&EFS+/134.0
=			2		++CONV+CON-260B1	2	20		-XV	9													&EFS+/134.0
=			3		++CONV+CON-260B1	5	21		-XDC4	4													&EFS+/134.1
=			4		++CONV+CON-260B1	6	22		-134K1	11													&EFS+/134.1
PRESSURE SWITCH					-182Q1	13	23		++FAN-52G1-181X3	1						1							&EFS+/181.7
=		2			++FAN-52G1-181X3	3	24		-AI_04	3													&EFS+/181.7
=		3			++FAN-52G1-181X3	2	25		-XDC1	7													&EFS+/181.7
Fuse 230V AC for Container Air Conditioning					-XDC2	1	29		++CONV-18Q1	13				1									&EFS+/133.8
TRIP					-DI_04	4	30		+.2-18B1	7													&EFS+/133.4
CB 1 GRID +24V	4				++CONV+CIR-80Q1	X6_12	31		-XDC3	2													&EFS+/188.1
=	5				++CONV+CIR-80Q1	X5_11	32		-XDC3	3													&EFS+/188.1
CB 2 ISLAND GRID +24V OPTIONAL							33		-137K1	11													&EFS+/188.2
=							34																&EFS+/188.2
=	6				++CONV+CIR-80Q1	X6_7	35		-137K1	14													&EFS+/188.4
CB 1 GRID	7				++CONV+CIR-80Q1	X6_14	36		-137K2	12													&EFS+/188.5

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2001
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X3

CONTROL VOLTAGE 24V DC

Function text			++CONV-80W1	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-195W1										Page / column
			0Z-500	Cable type							Cable type	0Z-500										
CB 1 GRID			8		++CONV+CIR-80Q1	X5_12	37	,	-189K1	22												&EFS+/188.6
=							38	,	-137K3	14												&EFS+/188.6
CB 2 ISLAND GRID OPTIONAL							39	,	-137K4	12												&EFS+/188.8
=							40	,	-189K1	21												&EFS+/188.8
SHUTDOWN CIRCUIT BREAKERS / DC CONTACTORS					-X3	42	41	,	+.1-84Q1	14		3										&EFS+/195.2
=					-195K3	IN1	42	,	-X3	41												&EFS+/195.2
=					-X3	44	43	,	+.1-84Q1	24		4										&EFS+/195.3
=					-195K3	IN2	44	,	-X3	43												&EFS+/195.3
=					-195K1	61	45	,	+.4-306K1	21												&EFS+/195.3
FAULT SIGNAL SAFETY RELAY					-195K3	IN	46	,	+.4-308K6	21												&EFS+/195.4
FAULT SIGNAL SAFETY RELAY					-195K3	IN	46	,	+.4-308K6	21												&EFS+/195.4

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 2002
Date								+ CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X3.10

Rückmeldung DC Schütze Subsystem 1_4

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Cable type	++CONV-231W4	OZ-500	Page / column
SUBSYSTEM 2_1_DC + Contactor K1 is on			-DI_02	8	1		+.4-306K1	14					&EFS+/129.0
SUBSYSTEM 2_2_DC + Contactor K2 is on			+.4-306K3	14	2		-DI_02	10					&EFS+/129.2
SUBSYSTEM 2_1_DC -Contactor K7 is on			+.4-306K2	14	3		-DI_02	9					&EFS+/129.1
SUBSYSTEM 2_2_DC -Contactor K8 is on			+.4-306K4	14	4		-DI_02	11					&EFS+/129.3
SUBSYSTEM 2_3_DC + Contactor K3 is on			-DI_02	12	5		+.4-306K5	14					&EFS+/129.4
SUBSYSTEM 2_3_DC + SPARE			-DI_02	14	6								&EFS+/129.6
SUBSYSTEM 2_3_DC -Contactor K9 is on			-DI_02	13	7		+.4-306K6	14					&EFS+/129.5
SUBSYSTEM 2_DC -SPARE			-DI_02	15	8								&EFS+/129.7
SUBSYSTEM 2_1_DC FUSE OK			-DI_02	16	9		++CONV+CIR-231U1-X3.1	13			13		&EFS+/129.8
SUBSYSTEM 2_2_DC FUSE OK					10		++CONV+CIR-231U1-X3.1	16			16		&EFS+/129.9
=			-DI_03	1	11		++CONV+CIR-231U1-X3.1	14			14		&EFS+/129.9
=			-XDC4	1	12								&EFS+/129.9

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.10	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2003
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X3.11

Rückmeldung DC Schütze Subsystem 1_4

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++CONV-231W4 / OZ-500	++CONV-227W4 / OZ-500	Page / column
SUBSYSTEM 3_1_DC + Contactor K1 is on		-DI_03	2	1		+.4-307K1	14				&EFS+/130.0
SUBSYSTEM 3_2_DC + Contactor K2 is on		+.4-307K3	14	2		-DI_03	4				&EFS+/130.2
SUBSYSTEM 3_1_DC -Contactor K7 is on		+.4-307K2	14	3		-DI_03	3				&EFS+/130.1
SUBSYSTEM 3_2_DC -Contactor K8 is on		+.4-307K4	14	4		-DI_03	5				&EFS+/130.3
SUBSYSTEM 3_3_DC + Contactor K3 is on		-DI_03	6	5		+.4-307K5	14				&EFS+/130.4
SUBSYSTEM 3_DC + SPARE		-DI_03	8	6							&EFS+/130.6
SUBSYSTEM 3_3_DC -Contactor K9 is on		-DI_03	7	7		+.4-307K6	14				&EFS+/130.5
SUBSYSTEM 3_DC -SPARE		-DI_03	9	8							&EFS+/130.7
SUBSYSTEM 2_DC FUSE OK		-DI_03	10	9		++CONV+CIR-231U1-X3.1	15		15		&EFS+/130.8
SUBSYSTEM 3_1_DC FUSE OK				10							&EFS+/130.9
=		-DI_03	11	11		++CONV+CIR-227U1-X3.1	13			13	&EFS+/130.9
=		-XDC4	2	12							&EFS+/130.9

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X3.12

Rückmeldung DC Schütze Subsystem 1_4

Function text				Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	++CONV-227W4										Page / column
				Cable type							Cable type	OZ-500										
SUBSYSTEM 4_1_DC + Contactor K1 is on					-DI_03	12	1		+.4-308K1	14												&EFS+/131.0
SUBSYSTEM 4_1_DC -Contactor K7 is on					+.4-308K2	14	2		-DI_03	13												&EFS+/131.1
SUBSYSTEM 4_2_DC + Contactor K2 is on					+.4-308K3	14	3		-DI_03	14												&EFS+/131.2
SUBSYSTEM 4_2_DC -Contactor K8 is on					+.4-308K4	14	4		-DI_03	15												&EFS+/131.3
SUBSYSTEM 4_3_DC + Contactor K3 is on					-DI_03	16	5		+.4-308K5	14												&EFS+/131.4
SUBSYSTEM 4_3_DC -Contactor K9 is on					-DI_05	1	6		+.4-308K6	14												&EFS+/131.5
SUBSYSTEM 4_DC + SPARE					-DI_05	2	7															&EFS+/131.6
SUBSYSTEM 4_DC -SPARE					-DI_05	3	8															&EFS+/131.7
SUBSYSTEM 3_2_DC FUSE OK					-DI_05	4	9		++CONV+CIR-227U1-X3.1	14		14										&EFS+/131.8
SUBSYSTEM 3_3_DC FUSE OK							10		++CONV+CIR-227U1-X3.1	16		16										&EFS+/131.9
=					-DI_05	5	11		++CONV+CIR-227U1-X3.1	15		15										&EFS+/131.9
=					-XDC4	2	12															&EFS+/131.9

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.12	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 2005
Date								+ CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X3.13

Rückmeldung DC Schütze Subsystem 1_6

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
										++CONV-237W4	
										OZ-500	
			-DI_05	6	1						&EFS+/132.0
					2		-DI_05	7			&EFS+/132.1
					3		-DI_05	8			&EFS+/132.2
					4		-DI_05	9			&EFS+/132.3
			-DI_05	10	5						&EFS+/132.4
			-DI_05	11	6						&EFS+/132.5
			-DI_05	12	7						&EFS+/132.6
SUBSYSTEM 4_1_DC FUSE OK			-DI_05	13	8		++CONV+CIR-237U1-X3.1	13		13	&EFS+/132.7
SUBSYSTEM 4_2_DC FUSE OK			-DI_05	14	9		++CONV+CIR-237U1-X3.1	14		14	&EFS+/132.8
SUBSYSTEM 4_3_DC FUSE OK					10		++CONV+CIR-237U1-X3.1	16		16	&EFS+/132.9
=			-DI_05	15	11		++CONV+CIR-237U1-X3.1	15		15	&EFS+/132.9
=			-XDC4	2	12						&EFS+/132.9

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next page: 2007

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X3.13	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 2006
Date								+ CTRL_1.3 Main mounting plate total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X5

Kleinspannungssignale

Function text				Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	++CONV-145W1	++CONV-145W2	++CONV-145W3	++CONV-145W4	++CONV-146W1	++CONV-146W2	++CONV-146W3	++CONV-146W4	++CONV-147W1	++CONV-147W2	-181W3	Page / column
				Cable type							Cable type	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	F-CY-OZ (LIY-CY)	
INDUCTOR GRID PHASE L1 TEMPERATURE 1_1					-AI_01	1	1	,	++CONV+IND-201L1			1											&EFS+/145.1
=					-AI_01	9	2	,	++CONV+IND-201L1			2											&EFS+/145.1
INDUCTOR GRID PHASE L2 TEMPERATURE 1_2					-AI_01	2	3	,	++CONV+IND-202L1				1										&EFS+/145.3
=					-AI_01	10	4	,	++CONV+IND-202L1				2										&EFS+/145.3
INDUCTOR GRID PHASE L3 TEMPERATURE 1_3					-AI_01	3	5	,	++CONV+IND-203L1					1									&EFS+/145.5
=					-AI_01	11	6	,	++CONV+IND-203L1					2									&EFS+/145.5
INDUCTOR DC SUB 2_1 TEMPERATURE 2_1					-AI_01	4	7	,	++CONV+IND-211L1.1						1								&EFS+/145.7
=					-AI_01	12	8	,	++CONV+IND-211L1.1						2								&EFS+/145.7
INDUCTOR DC SUB 2_2 TEMPERATURE 2_2					-AI_01	5	9	,	++CONV+IND-211L1.2							1							&EFS+/146.1
=					-AI_01	13	10	,	++CONV+IND-211L1.2							2							&EFS+/146.1
INDUCTOR DC SUB 2_3 TEMPERATURE 2_3					-AI_01	6	11	,	++CONV+IND-211L1.3								1						&EFS+/146.3
=					-AI_01	14	12	,	++CONV+IND-211L1.3								2						&EFS+/146.3
INDUCTOR DC SUB 3_1 TEMPERATURE 3_1					-AI_01	7	13	,	++CONV+IND-207L1.1									1					&EFS+/146.5
=					-AI_01	15	14	,	++CONV+IND-207L1.1									2					&EFS+/146.5
INDUCTOR DC SUB 3_2 TEMPERATURE 3_2					-AI_01	8	15	,	++CONV+IND-207L1.2										1				&EFS+/146.7
=					-AI_01	16	16	,	++CONV+IND-207L1.2										2				&EFS+/146.7
INDUCTOR DC SUB 3_3 TEMPERATURE 3_3					-AI_02	1	17	,	++CONV+IND-207L1.3											1			&EFS+/147.1
=					-AI_02	9	18	,	++CONV+IND-207L1.3											2			&EFS+/147.1
INDUCTOR DC SUB 4_1 TEMPERATURE 4_1					-AI_02	2	19	,	++CONV+IND-217L1.1												1		&EFS+/147.3
=					-AI_02	10	20	,	++CONV+IND-217L1.1												2		&EFS+/147.3
CONVERTER CABINET TEMPERATURE					-AI_02	4	21	,	++CONV+CON-147B2	+													&EFS+/147.7
=					-AI_02	12	22	,	++CONV+CON-147B2	-													&EFS+/147.7
COOLING WATER TEMPERATURE					-AI_02	5	23	,	++FAN-52G1-181X3	4												4	&EFS+/148.1
=					-AI_02	13	24	,	++FAN-52G1-181X3	5												5	&EFS+/148.1

previous page: 2006

next page: 2008

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_01++CT+CTRL_1.3-X5
Kleinspannungssignale

Function text				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-OZ (LiY-CY) ++CONV-148W1	F-CY-OZ (LiY-CY) ++CONV-148W2	Page / column
INDUCTOR DC SUB 4_2 TEMPERATURE 4_2					-AI_02	6	25	.	++CONV+IND-217L1.2			1		&EFS+/148.3
=					-AI_02	14	26	.	++CONV+IND-217L1.2			2		&EFS+/148.3
CIR CABINET TEMPERATURE					-AI_02	7	27	.	++CONV+CIR-148B3	+				&EFS+/148.5
=					-AI_02	15	28	.	++CONV+CIR-148B3	-				&EFS+/148.5
INDUCTOR DC SUB 4_3 TEMPERATURE 4_3					-AI_02	8	29	.	++CONV+IND-217L1.3				1	&EFS+/148.7
=					-AI_02	16	30	.	++CONV+IND-217L1.3				2	&EFS+/148.7

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_01++CT+CTRL_1.3-X5
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by			10354_23A2007
Date			

= UNIT_01 Converter Container 1
& EMZ Terminals
++ CT Control cabinets
+ CTRL_1.3 Main mounting plate

page: 2008
total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-X5.1

DC Subsystem Spannungsmessung

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
DC_SUBSYSTEM 2_1.1 voltage			-AI_03	5	1		-AI_04	6			&EFS+/149.0
			-XDC1	6							
			-AI_03	6							
DC_SUBSYSTEM 2_3.1 voltage			-AI_03	7	2		+.4-149U1	14			&EFS+/149.2
			-AI_04	5							
			-AI_03	8							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-X5.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2009
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-150X1

Subsysteme DC Schütz EIN

Function text			++CONV-231W4	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	++CONV-231W4	Page / column
			OZ-500	Cable type							Cable type	OZ-500	
SUBSYSTEM 2_1 CONTACTOR DC+ ON			1		++CONV+CIR-231U1-X3.1	1	1	,	-150K1	14			&EFS+/150.2
=					-195K2	23	2	,	++CONV+CIR-231U1-X3.1	17		17	&EFS+/150.2
SUBSYSTEM 2_1 CONTACTOR DC-ON			4		++CONV+CIR-231U1-X3.1	4	3	,	-150K2	14			&EFS+/150.4
SUBSYSTEM 2_2 CONTACTOR DC+ ON			2		++CONV+CIR-231U1-X3.1	2	4	,	-151K1	14			&EFS+/151.1
=					-151K1	A2	5	,					&EFS+/151.1
SUBSYSTEM 2_3 CONTACTOR DC+ ON			5		++CONV+CIR-231U1-X3.1	5	6	,	-151K2	14			&EFS+/151.3
=			3		++CONV+CIR-231U1-X3.1	3	7	,	-151K3	14			&EFS+/151.4
=					-151K2	A2	8	,					&EFS+/151.4
SUBSYSTEM 2_3 CONTACTOR DC-ON			6		++CONV+CIR-231U1-X3.1	6	9	,	-151K4	14			&EFS+/151.6
=							10	,					&EFS+/151.6

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-150X1	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 2010
Date								+ CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC1

Steuerspannung 24VDC (USV) DC1

Function text	-112W1 / JZ-500	-242W9 / JZ-500	-240W9 / JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	-243W9 / JZ-500	Page / column
FUSE 24V DC CONTROL VOLTAGE			1		+CTRL_2.1-240U1	1	1		-103F1	2			&EFS+/103.2
					+CTRL_2.1-160U1	+							
					+.2-18B1	40							
FUSE 24V DC CONTROL VOLTAGE					-DO_01	L+	2		-101Q1	13			&EFS+/103.2
					-AI_01	L+							
					+.1-126S1	13							
FUSE 24V DC CONTROL VOLTAGE					-136K7	11	3		-103F1	13			&EFS+/103.2
					-84F2	13							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE			2		+CTRL_2.1-240U1	3	4		-102G1	OUTPUT DC 24 V:-			&EFS+/103.3
					-120A1	-X80:2							
					-DI_01	M							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE					-DO_01	M	5		+CTRL_2.1-160U1	-			&EFS+/103.3
					-AI_01	M							
					+.2-18B1	42							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE					-84K1	A2	6		-X5.1	1			&EFS+/103.3
					+.1-140H1	X2							
					+.2-110U1	M							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE					-AI_04	7	7						&EFS+/103.3
					-XDC2	3							
					-X3	25							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE			GNYE		+CTRL_2.1-240U1	2	PE		-101T1	PE			&EFS+/103.4
					-XE	PE:1							
					-101T1	-"							
Main PLC, SPS, 24V contacts CONTROL VOLTAGE					+.2-18B1	41	PE		+CTRL_2.1-243U1	2		GNYE	&EFS+/103.4
		GNYE			+CTRL_2.1-242U1	2							
	GNYE				+.1-112A1	PE							

previous page: 2010

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Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC1

Steuerspannung 24VDC (USV) DC1

Function text			-241W9	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Page / column
			1Z-500	Cable type							Cable type	
			GNYE		+CTRL_2.1-241U1	2						

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024					& EMZ Terminals
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2012
Date						+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC2

Steuerspannung 24VDC (USV) DC2

Function text	-241W9 / JZ-500	-242W9 / JZ-500	-243W9 / JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Main PLC, SPS, 24V contacts CONTROL VOLTAGE			1		+CTRL_2.1-243U1	1	1		-103F2	2		&EFS+/103.4
		1			+CTRL_2.1-242U1	1						
					-X3	29						
BSU, SPARE CONTROL VOLTAGE	1				+CTRL_2.1-241U1	1	2					&EFS+/103.5

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next page: 2014

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2013
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC2

Steuerspannung 24VDC (USV) DC2

Function text	-243W9 / JZ-500	-242W9 / JZ-500	-112W1 / JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
			1		+.1-112A1	L+						
BSU, SPARE CONTROL VOLTAGE					-186K1	A2	3		-XDC1	7		&EFS+/103.5
		2			+CTRL_2.1-242U1	3						
	2				+CTRL_2.1-243U1	3						

previous page: 2013

next page: 2015

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2014
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC2

Steuerspannung 24VDC (USV) DC2

Function text		-112W1	-241W9	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Page / column
		1Z-500	1Z-500	Cable type							Cable type	
BSU, SPARE CONTROL VOLTAGE			2		+CTRL_2.1-241U1	3	4	⌟	-XDC3	3		&EFS+/103.5
					-138K1	A2						
		2			+.1-112A1	M						
								'				

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC2	20240809_V0.7	= UNIT_01	Converter Container 1
Date	02.07.2024					& EMZ	Terminals
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets
Date						+ CTRL_1.3	Main mounting plate

page: 2015

total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_01++CT+CTRL_1.3-XDC3
Steuerspannung 24VDC (USV) DC3

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
BSU, SPARE CONTROL VOLTAGE		-111A1	3	1		-103F3	2		&EFS+/103.6
		-173K3	21						
		+.2-114A1	-X80:1						
BSU, SPARE CONTROL VOLTAGE		-X3	31	2		+.4-306K1	11		&EFS+/103.6
		-195K1	83						
		-115A1	V+						
PRECHARGE CONTROL VOLTAGE		-X3	32	3		-XDC2	4		&EFS+/103.7
		-111A1	4						
		+.2-114A1	-X80:2						
PRECHARGE CONTROL VOLTAGE		-195K1	43	4		-XDC4	3		&EFS+/103.7
		+.4-171K1	x2						
		-115A1	V-						

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

FREQCON

Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC3

20240809_V0.7

10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CT	Control cabinets	page: 2016
+	CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC4

Steuerspannung 24VDC (USV) DC4

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Cable type	Page / column
PRECHARGE CONTROL VOLTAGE			-195K1	33	1		-103F4	2			&EFS+/103.8
			-195K3	A1							
			-X3.10	12							
PRECHARGE CONTROL VOLTAGE			-X3.11	12	2		-X3.13	12			&EFS+/103.8
			-X3	5							
			-X3.12	12							
DC CONTACTORS, RELAYS, CONTROL VOLTAGE			-139K2	A2	3		-XDC3	4			&EFS+/103.9
			-195K3	A2							
			-195K1	23							
DC CONTACTORS, RELAYS, CONTROL VOLTAGE			-X3	21	4						&EFS+/103.9
			+.4-306K1	A2							
			+.4-306K1	A2							

previous page: 2016

next page: 2018

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XDC5.1

Steuerspannung 24VDC (USV) DC5.1

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
DC CONTACTORS, RELAYS, CONTROL VOLTAGE			-186K1	1	1	,	-103F5	2			&EFS+/103.9
			-186K1	3							
						,					

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2017

next page:
2019

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XDC5.1	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2018
Date								+ CTRL_1.3 Main mounting plate — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_01++CT+CTRL_1.3-XDC5.2
Steuerspannung 24VDC (USV) DC5.2

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
DC CONTACTORS, RELAYS, CONTROL VOLTAGE		+.2-110U1	+24V	1	•	-186K1	2		&EFS+/103.9
		-120A1	-X80:1						
		-DI_01	L+						
					•				

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

Klemmenplan
=UNIT_01++CT+CTRL_1.3-XDC5.2

20240809_V0.7
10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CT	Control cabinets	page: 2019
+	CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_01++CT+CTRL_1.3-XE
Hauptstromversorgung 400V AC

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
				1		-84F2	2		&EFS+/84.0
1-6				1					&EFA+++/2a.4
Supply Control Cabinet 3-phase 400V AC				N		-X1	7		&EFS+/84.1
=		-191XT1	4	N		-XT	2		&EFS+/84.2
=		-190XT1	2	N		-191XT1	8		&EFS+/84.2
=				PE					&EFS+/84.2
=		-84F1	PE	PE		-XDC1	PE		&EFS+/84.2
=			PE	PE					&EFS+/84.3
		-101Q1	1	2		-190F2	1		&EFS+/84.0
				3		-84F2	4		&EFS+/84.0
Supply Control Cabinet 3-phase 400V AC		-101Q1	3	4		-190F3	1		&EFS+/84.1
=				5		-84F2	6		&EFS+/84.1
=		-101Q1	5	6		-190F1	1		&EFS+/84.1

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

FREQCON

Klemmenplan =UNIT_01++CT+CTRL_1.3-XE

20240809_V0.7

10354_23A2007

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CT	Control cabinets	page: 2020
+	CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XT

Transfer Klemmenblock 24VDC/230VAC

Function text	-278W1	++CONV-281W1	++CONV-279W1	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	++CONV-279W1	++CONV-281W1	-278W1	Page / column
	1Z-500	1Z-500	1Z-500	Cable type							Cable type	1Z-500	1Z-500	1Z-500	
CON Fans 1-5 in door			1		++CONV+CON-279M1	L	1		-135K1	14					&EFS+/183.1
=			2		++CONV+CON-279M1	N	2		-XE	N:1					&EFS+/183.1
=							PE		++CONV+CON-279M1	PE		GNYE			&EFS+/183.1
=		1			++CONV+CIR-281M1	L	3		-135K3	14					&EFS+/183.3
CIR Fans 1-3 in door		2			++CONV+CIR-281M1	N	4								&EFS+/183.4
=							PE		++CONV+CIR-281M1	PE			GNYE		&EFS+/183.4
FAN 1 CONTROL CABINET	1				+.1-278M1	L	5		-135K2	14					&EFS+/185.1
=	2				+.1-278M1	N	6								&EFS+/185.1
=							PE		+.1-278M1	PE				GNYE	&EFS+/185.1

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2020

next page:
2022

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XT	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets page: 2021
Date								+ CTRL_1.3 Main mounting plate total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XT

Transfer Klemmenblock 24VDC/230VAC

Function text		++CONV-80W2	-185W1	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	-185W1	++CONV-80W2	Page / column
		1Z-500	1Z-500	Cable type							Cable type	1Z-500	1Z-500	
HEATING CONTROL CABINET			1		+.2-185R1	1	7		-185B1	2				&EFS+/185.7
=			2		+.2-185R1	2	8							&EFS+/185.7
=							PE		+.2-185R1	PE		GNYE		&EFS+/185.7
230V AC for Circuit Breaker 1		1			++CONV+CIR-80Q1	X5_2	9		-187F1	2				&EFS+/187.1
=		2			++CONV+CIR-80Q1	X5_1	10							&EFS+/187.1
=							PE						GNYE	&EFS+/187.1
230V AC for Circuit Breaker Optional							11							&EFS+/187.2
=							12							&EFS+/187.2
=							PE							&EFS+/187.2
24V DC for Circuit Breaker 2 Optional							13		-187F2	2				&EFS+/187.4
=							14		-101T1	-'				&EFS+/187.4
24V DC for Circuit Breaker Optional							15							&EFS+/187.5
=							16							&EFS+/187.5

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XT	20240809_V0.7
Date	02.07.2024			Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Proved by							
Date							

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	CT	Control cabinets	page: 2022
+	CTRL_1.3	Main mounting plate	total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-190XT1

230VAC Beleuchtung/Klimaanlage Container/Schrank

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
	+.5-190H1-W1										
SPARE					1		-190F1	2			&EFS+/190.1
=					2		-XE	N:2			&EFS+/190.1
=					PE						&EFS+/190.1
=					3		-135K4	14			&EFS+/190.3
=					4		-190F3	N			&EFS+/190.3
=					PE						&EFS+/190.3
Light Control cabinet	BN		+.5-190H1		5		-190F3	2			&EFS+/190.5
=					PE		-190X10	PE			&EFS+/190.5
=	LBU		+.5-190H1		6		-190F3	N.			&EFS+/190.5
230V AC for Container light, socket					7		-190X10	1			&EFS+/190.7
=					8		-190X10	2			&EFS+/190.7
=					PE						&EFS+/190.7

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Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_01++CT+CTRL_1.3-191XT1					Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
400V AC for Container Air Conditioning 1							1	,	-191F1	2												&EFS+/191.1
=							2	,	-191F1	4												&EFS+/191.1
=							3	,	-191F1	6												&EFS+/191.1
=							4	,	-XE	N:2												&EFS+/191.2
=							PE	,														&EFS+/191.2
400V AC for Container Air Conditioning 2							5	,	-191F2	2												&EFS+/191.3
=							6	,	-191F2	4												&EFS+/191.3
=							7	,	-191F2	6												&EFS+/191.3
=							8	,	-XE	N:1												&EFS+/191.4
=							PE	,														&EFS+/191.4

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-191XT1	20240809_V0.7	= UNIT_01	Converter Container 1
Date	02.07.2024							& EMZ	Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets
Date								+ CTRL_1.3	Main mounting plate

page: 2024

total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.3-XV

Suppression TVS Diode

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
Suppression TVS Diode bi-directional 47 V					1		-171K3	14			&EFS+/171.8
=					5						&EFS+/151.7
=					6						&EFS+/151.7
=					7						&EFS+/151.7
=					8						&EFS+/151.8
=					9						&EFS+/134.5
=					2		-173K3	14			&EFS+/173.9
=					3						&EFS+/150.7
=					4						&EFS+/150.7

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.3-XV	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 2025
Date								+ CTRL_1.3	Main mounting plate	total: 482

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-350X1.21	Subsysteme DC Schütz EIN	1	10	0	0	20	=UNIT_01&EMZ++CT+CTRL_1.4/2000
-350X1.22		11	13	0	0	4	=UNIT_01&EMZ++CT+CTRL_1.4/2001
-XE2	Gleichstromversorgung 1000VDC	1	11	0	0	11	=UNIT_01&EMZ++CT+CTRL_1.4/2002
-XV.20		1	12	0	0	12	=UNIT_01&EMZ++CT+CTRL_1.4/2003

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2000

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.4-350X1.21

Subsysteme DC Schütz EIN

Function text		++CONV-237W4 OZ-500	++CONV-227W4 OZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++CONV-227W4 OZ-500	Page / column
SUBSYSTEM 3_1 CONTACTOR DC+ ON			1		++CONV+CIR-227U1-X3.1	1	1	,	-350K1	14			&EFS+/350.2
=					-350K1	A2	2	,	++CONV+CIR-227U1-X3.1	17		17	&EFS+/350.2
SUBSYSTEM 3_1 CONTACTOR DC-ON			4		++CONV+CIR-227U1-X3.1	4	3	,	-350K2	14			&EFS+/350.4
			2		++CONV+CIR-227U1-X3.1	2	4	,	-351K1	14			&EFS+/351.1
SUBSYSTEM 4_2 CONTACTOR DC+ ON		2			++CONV+CIR-237U1-X3.1	2	4	,	-353K1	14			&EFS+/353.1
					+.3-195K2	43	5	,					&EFS+/351.1
								,					
SUBSYSTEM 4_2 CONTACTOR DC+ ON					-353K1	A2	5	,					&EFS+/353.1
SUBSYSTEM 3_3 CONTACTOR DC+ ON			5		++CONV+CIR-227U1-X3.1	5	6	,	-351K2	14			&EFS+/351.3
SUBSYSTEM 4_3 CONTACTOR DC+ ON		5			++CONV+CIR-237U1-X3.1	5	6	,	-353K2	14			&EFS+/353.3
SUBSYSTEM 3_3 CONTACTOR DC+ ON			3		++CONV+CIR-227U1-X3.1	3	7	,	-351K3	14			&EFS+/351.4
								,					
SUBSYSTEM 4_3 CONTACTOR DC+ ON		3			++CONV+CIR-237U1-X3.1	3	7	,	-353K3	14			&EFS+/353.4
SUBSYSTEM 3_3 CONTACTOR DC-ON							8	,					&EFS+/351.5
SUBSYSTEM 4_3 CONTACTOR DC+ ON					-353K2	A2	8	,					&EFS+/353.4
SUBSYSTEM 3_3 CONTACTOR DC-ON			6		++CONV+CIR-227U1-X3.1	6	9	,	-351K4	14			&EFS+/351.6
								,					
SUBSYSTEM 4_3 CONTACTOR DC-ON		6			++CONV+CIR-237U1-X3.1	6	9	,	-353K4	14			&EFS+/353.6
SUBSYSTEM 3_3 CONTACTOR DC-ON							10	,					&EFS+/351.7
SUBSYSTEM 4_3 CONTACTOR DC-ON							10	,					&EFS+/353.6

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.4-350X1.21	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT Control cabinets — page: 2000
Date								+ CTRL_1.4 Right side — total: 482

0 1 2 3 4 5 6 7 8 9

Terminal diagram

Freqcon_F13_001_02

Function text			++CONV-237W4 / OZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++CONV-237W4 / OZ-500											Page / column
SUBSYSTEM 4_1 CONTACTOR DC+ ON			1		++CONV+CIR-237U1-X3.1	1	11		-352K1	14													&EFS+/352.1
SUBSYSTEM 4_1 CONTACTOR DC-ON					-352K1	A2	12		++CONV+CIR-237U1-X3.1	17		17											&EFS+/352.2
=			4		++CONV+CIR-237U1-X3.1	4	13		-352K2	14													&EFS+/352.3

Strip =UNIT_01++CT+CTRL_1.4-350X1.22

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++CT+CTRL_1.4-XE2

Gleichstromversorgung 1000VDC

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
RESISTORS FOR DISCHARGING UDC+			-173R2		1		-173R1				&EFS+/173.2
RESISTORS FOR DISCHARGING UDC-			-173R4		2		-173R3				&EFS+/173.3
=			-173R4		3		+CTRL_2.1-160U1	15			&EFS+/173.3
=			-173R2		4		+CTRL_2.1-160U1	44			&EFS+/173.3
=			+CTRL_2.1-162U1	15	5		+CTRL_2.1-161U1	15			&EFS+/173.3
=			+CTRL_2.1-162U1	44	6		+CTRL_2.1-161U1	44			&EFS+/173.3
=			+CTRL_2.1-163U1	15	7		-189X1	4			&EFS+/173.4
=			+CTRL_2.1-163U1	44	8		+CTRL_2.1-164U1	44			&EFS+/173.4
=			+CTRL_2.1-164U1	15	9		++CONV+CON-N	N			&EFS+/173.4
=					10		+CTRL.4-173R6				&EFS+/173.5
=					11		+CTRL.4-173R8				&EFS+/173.5

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Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_01++CT+CTRL_1.4-XV.20					Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
Suppression TVS Diode bi-directional 47 V							1																&EFS+/350.7
=							2																&EFS+/350.7
=							3																&EFS+/351.7
=							4																&EFS+/351.7
=							5																&EFS+/351.8
=							6																&EFS+/351.8
=							7																&EFS+/352.7
=							8																&EFS+/352.7
=							9																&EFS+/353.7
=							10																&EFS+/353.7
=							11																&EFS+/353.7
=							12																&EFS+/353.8

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++CT+CTRL_1.4-XV.20	20240809_V0.7	= UNIT_01	Converter Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ CT	Control cabinets	page: 2003
Date								+ CTRL_1.4	Right side	total: 482

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-52G1-181X1	400VAC Wassersystem	1	PE	3	1	13	=UNIT_01&EMZ++FAN/2000
-52G1-181X3		1	GND	0	0	6	=UNIT_01&EMZ++FAN/2001

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++CT+CTRL_1.4/2003

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Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_01++FAN+-52G1-181X1

400VAC Wassersystem

Function text	-52G1-182W1	-52G1-181W5	-52G1-181W2	Cable name	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	++CT-181W1	Page / column
	1Z-600	1Z-600	1Z-600	Cable type							Cable type	1Z-600	
PUMP			1		-52G1-181M1	U1	1	,	++CT+CTRL_1.3-X1	1		1	&EFS++CT/181.1
=			2		-52G1-181M1	V1	2	,	++CT+CTRL_1.3-X1	2		2	&EFS++CT/181.1
=			3		-52G1-181M1	W1	3	,	++CT+CTRL_1.3-X1	3		3	&EFS++CT/181.1
FUSE FOR PUMP		1			-52G1-181R1	x1	4	,	++CT+CTRL_1.3-X1	4		4	&EFS++CT/181.3
HEATER		2			-52G1-181R1	x3	5	,	++CT+CTRL_1.3-X1	5		5	&EFS++CT/181.4
=		3			-52G1-181R1	x5	6	,	++CT+CTRL_1.3-X1	6		6	&EFS++CT/181.4
=		4			-52G1-181R1	x6	7	,	++CT+CTRL_1.3-X1	7		7	&EFS++CT/181.4
FAN 1 HEAT EXCHANGER	1				-52G1-182M1	U1	8	,	++CT+CTRL_1.3-X1	8		8	&EFS++CT/182.1
=	2				-52G1-182M1	V1	9	,	++CT+CTRL_1.3-X1	9		9	&EFS++CT/182.1
=	3				-52G1-182M1	W1	10	,	++CT+CTRL_1.3-X1	10		10	&EFS++CT/182.1
PUMP			GNYE		-52G1-181M1	PE	PE	,	++CT+CTRL_1.3-X1	PE		GNYE	&EFS++CT/181.1
=	3				-52G1-182M1	W1	10	,	++CT+CTRL_1.3-X1	10		10	&EFS++CT/182.1
PUMP			GNYE		-52G1-181M1	PE	PE	,	++CT+CTRL_1.3-X1	PE		GNYE	&EFS++CT/181.1
HEATER		GNYE			-52G1-181R1	PE	PE	,					&EFS++CT/181.4
FAN 1 HEAT EXCHANGER	GNYE				-52G1-182M1	PE	PE	,					&EFS++CT/182.1

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Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_01	Converter Container 1	
&	EMZ	Terminals	
++	FAN	FAN	page: 2000
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text			++CT-181W3	Cable name	Strip =UNIT_01++FAN+-52G1-181X3					Cable name	++CT-181W3										Page / column
			F-CY-0Z (LiY-CY)	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-0Z (LiY-CY)										
PRESSURE SWITCH			1		++CT+CTRL_1.3-X3	23	1	,	-52G1	1												&EFS++CT/181.7
=					-52G1	2	2	,	++CT+CTRL_1.3-X3	25		3										&EFS++CT/181.7
=					-52G1	3	3	,	++CT+CTRL_1.3-X3	24		2										&EFS++CT/181.7
COOLING WATER TEMPERATURE			4		++CT+CTRL_1.3-X5	23	4	,	-52G1-148B1	+												&EFS++CT/148.1
=			5		++CT+CTRL_1.3-X5	24	5	,	-52G1-148B1	-												&EFS++CT/148.1
PRESSURE SWITCH					-52G1	SH	GND	,														&EFS++CT/181.7

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_01++FAN+-52G1-181X3	20240809_V0.7	= UNIT_01 Converter Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ FAN FAN page: 2001
Date								+ total: 482

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Customer:	Statron
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore
Type:	BESS MSC-1000-620-8
Product	BATTERY CONTAINER 1
Circuit diagram No:	10354_23A2007

20240809_V0.7

Producer (company):	Freqcon GmbH
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore
Type:	BESS MSC-1000-620-8
Project manager:	Freqcon_CP

53406
ASC 53409

created on: 17.09.2019
edited on: 09.08.2024 edited by: Freqcon_DG total pages: 482

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&EPA ++ASC		Summarized part list auxillary cabinet		
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&EMB ++Container		Cable list		
	1	CABEL LIST	02.07.2024	Freqcon_JD
	2	CABEL LIST	02.07.2024	Freqcon_JD
	3	CABEL LIST	02.07.2024	Freqcon_JD
	4	CABEL LIST	02.07.2024	Freqcon_JD
	5	CABEL LIST	02.07.2024	Freqcon_JD
	6	CABEL LIST	02.07.2024	Freqcon_JD
	7	CABEL LIST	02.07.2024	Freqcon_JD
	8	CABEL LIST	02.07.2024	Freqcon_JD
	9	CABEL LIST	02.07.2024	Freqcon_JD
&EMB ++ASC		Cable list auxillary cabinet		
	1	CABEL LIST	02.07.2024	Freqcon_JD
	2	CABEL LIST	02.07.2024	Freqcon_JD
	3	CABEL LIST	02.07.2024	Freqcon_JD
	4	CABEL LIST	02.07.2024	Freqcon_JD
	5	CABEL LIST	02.07.2024	Freqcon_JD
	6	CABEL LIST	02.07.2024	Freqcon_JD
	7	CABEL LIST	02.07.2024	Freqcon_JD
	8	CABEL LIST	02.07.2024	Freqcon_JD
	9	CABEL LIST	02.07.2024	Freqcon_JD
	10	CABEL LIST	02.07.2024	Freqcon_JD
&EMZ ++ASC		Terminals auxillary cabinet		
	1000	Klemmenleistenübersicht : =UNIT_02++ASC+-X5.1 - =UNIT_02++ASC+-690XT1	02.07.2024	Freqcon_JD
	2000	Klemmenplan =UNIT_02++ASC+-X5.1	02.07.2024	Freqcon_JD
	2001	Klemmenplan =UNIT_02++ASC+-X5.2	02.07.2024	Freqcon_JD

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FREQCON_INHALT_04_de_en

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&EMZ ++ASC		Terminals auxillary cabinet		
	2002	Klemmenplan =UNIT_02++ASC+-X5.3	02.07.2024	Freqcon_JD
	2003	Klemmenplan =UNIT_02++ASC+-X6	02.07.2024	Freqcon_JD
	2004	Klemmenplan =UNIT_02++ASC+-XDC1	02.07.2024	Freqcon_JD
	2005	Klemmenplan =UNIT_02++ASC+-XDC2	02.07.2024	Freqcon_JD
	2006	Klemmenplan =UNIT_02++ASC+-XE	02.07.2024	Freqcon_JD
	2007	Klemmenplan =UNIT_02++ASC+-XES	02.07.2024	Freqcon_JD
	2008	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2009	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2010	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2011	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2012	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2013	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
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	2016	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2017	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2018	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2019	Klemmenplan =UNIT_02++ASC+-369XT	02.07.2024	Freqcon_JD
	2020	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2021	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2022	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2023	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2024	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2025	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2026	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2027	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2028	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD

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&EMZ ++ASC		Terminals auxillary cabinet		
	2029	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2030	Klemmenplan =UNIT_02++ASC+-687XT1	02.07.2024	Freqcon_JD
	2031	Klemmenplan =UNIT_02++ASC+-690XT1	02.07.2024	Freqcon_JD
	2032	Klemmenplan =UNIT_02++ASC+-690XT1	02.07.2024	Freqcon_JD
	2033	Klemmenplan =UNIT_02++ASC+-690XT1	02.07.2024	Freqcon_JD
	2034	Klemmenplan =UNIT_02++ASC+-690XT1	02.07.2024	Freqcon_JD

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SPECIFICATION

TERMINAL STRIP

-XE1	MAIN POWER SUPPLY 600V AC
-XE2	DC POWER SUPPLY 1000V DC
-XE	MAIN POWER SUPPLY 400V AC
-X1	MAIN POWER 400V/230V AC
-X2	LIGHT CABINET 230V AC
-X3	CONTROL VOLTAGE 24V DC
-14X1	CONTROL VOLTAGE 24V DC (TO DC CONTACTORS)
-X5	LOW-VOLTAGE SIGNALS
-XDC0	24V DC POWER SUPPLY
-XDC1-4	CONTROL VOLTAGE 24V DC (UPS)
-XT	TRANSFER TERMINAL BLOCK 24V DC / 230V AC

WIRING COLOR

L1 / L2 / L3	=	BLACK
N	=	LIGHT BLUE (IEC) / GREY (UL)
PE	=	YELLOW-GREEN
EXTERNAL VOLTAGE	=	ORANGE
CONTROL VOLTAGE 24 V DC	=	DARK BLUE
ANALOG SIGNALS	=	WHITE

PLACE

+CTRL	=	Control cabinet
+CON	=	Converter cabinet
+IND	=	Inductor cabinet
+CIR	=	Circuit breaker cabinet
+COSY	=	Cooling System
+FAN	=	External fan

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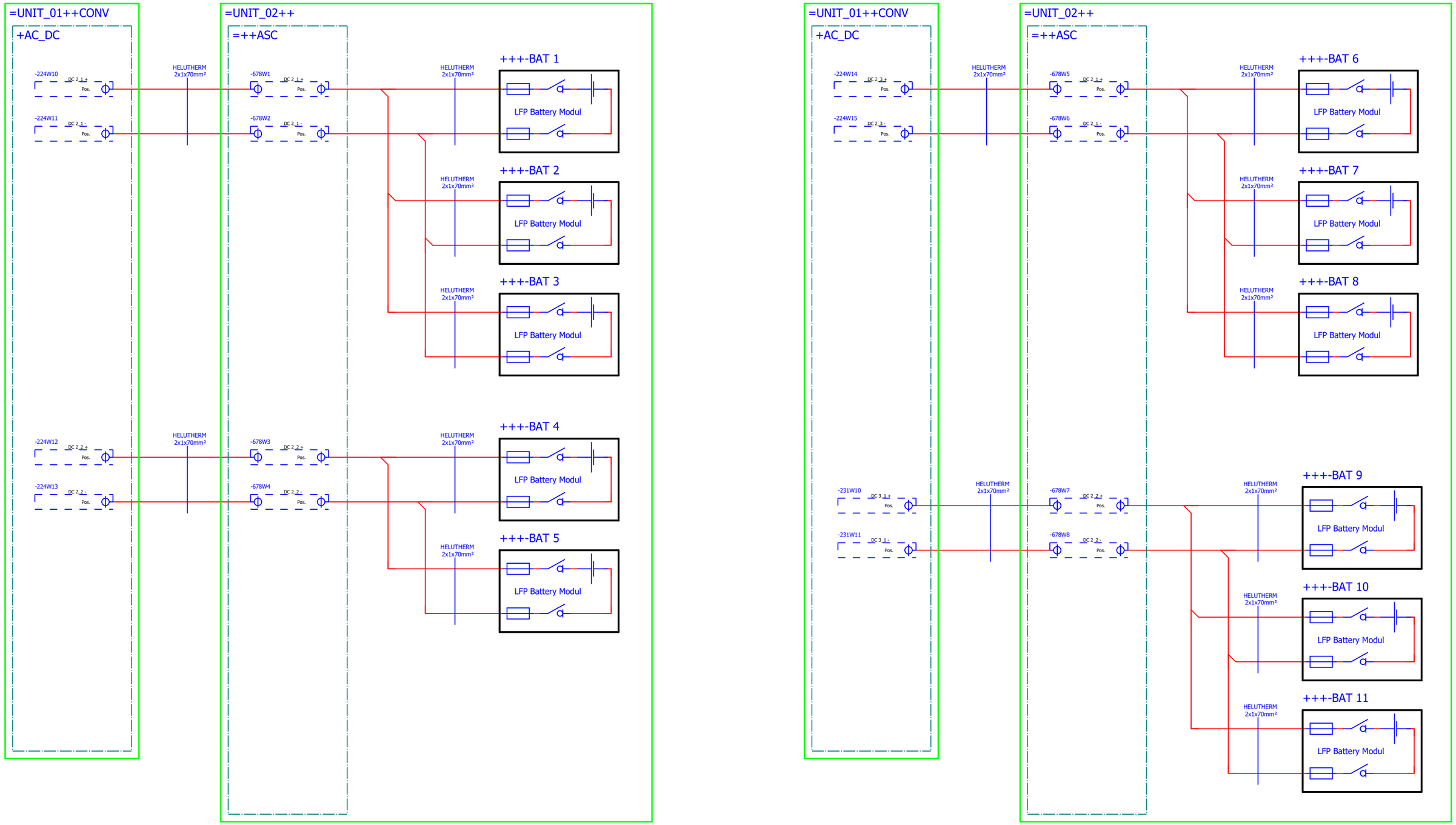
SPECIFICATION of grounding

	from frame to			
1	**roof & side walls & doors**	**EVD_1**	**Flachband**	**2x25 mm²**
2	**frame**	**EVD_2**	**Flachband**	**2x25 mm²**
3	**base**	**EVD_3**	**Flachband**	**2x25 mm²**
4	**Mounting plate & partitions**	**EVD_4**	**H07-V-K**	**2x25 mm²**
5	**inductors**	**EVD_5**	**H07-V-k**	**2x25 mm²**
6	**Powerstack**	**EVD_6**	**H07-V-K**	**2x25 mm²**
7	**DC Switch & Fuse**	**EVD_7**	**H07-V-K**	**2x25 mm²**
8	**AC Filter**	**EVD_8**	**H07-V-K**	**2x25 mm²**
9	**circuit-breaker**	**EVD_9**	**H07-V-K**	**2x25 mm²**
10	**Freqcon_Fast_Disconektor**	**EVD_10**	**H07-V-K**	**2x25 mm²**
11	**Freqcon_Rectifier_Modul**	**EVD_11**	**H07-V-K**	**2x25 mm²**
12	**capacitor banks**	**EVD_12**	**H07-V-K**	**2x25 mm²**
13	**water distributor**	**EVD_13**	**H07-V-K**	**2x25 mm²**
14	**SPARE**	**EVD_14**	**H07-V-K**	**2x25 mm²**
15	**SPARE**	**EVD_15**	**H07-V-K**	**2x25 mm²**
16	**SPARE**	**EVD_16**	**H07-V-K**	**2x25 mm²**
17	**SPARE**	**EVD_17**	**H07-V-K**	**2x25 mm²**
18	**SPARE**	**EVD_18**	**H07-V-K**	**2x25 mm²**
	from door to			
19	**PROFINET IRT IGBT Interface**	**EVD_19**	**H07-V-K**	**1,5 mm²**
20	**HMI**	**EVD_20**	**H07-V-K**	**1,5 mm²**
21	**SPARE**	**EVD_21**	**H07-V-K**	**??? mm²**
22	**SPARE**	**EVD_22**	**H07-V-K**	**??? mm²**

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Single line diagram



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Editor	Freqcon_JD			Statron	FREQCON	SYSTEMS OVERVIEW	20240809_V0.7	= UNIT_02	Battery Container 1
Date	18.06.2024	Norm						& EFA	Single line diagram
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Single line diagram

Control circuit

++ASC

400V

-XES

-684F1
&EFS++ASC/684.1
C32A

SPD

-XE

-691F1
&EFS++ASC/691.1
C6A

-691F2
&EFS++ASC/691.3
C6A

-691F3
&EFS++ASC/691.4
C6A

-636K1
&EFS++ASC/636.1

-636K2
&EFS++ASC/636.2

-636K3
&EFS++ASC/636.4

M
1~

Exhaust Unit / shut-off flap Bat 1-4

Exhaust Unit / shut-off flap Bat 5-8

Exhaust Unit / shut-off flap Bat 9-11

-690F1
&EFS++ASC/690.1
16A

Container Internal Lighting

-690F2
&EFS++ASC/690.3
16A

1/N/PE

Container Sockets

-690F3
&EFS++ASC/690.5
C6A

crane 1

-690F4
&EFS++ASC/690.7
C6A

crane 2

-690F5
&EFS++ASC/690.9
C6A

crane 3

-691F4
&EFS++ASC/691.5
C16A

Cooling Units

-687F1
&EFS++ASC/687.1
C16A

-687F2
&EFS++ASC/687.3
C16A

-687F3
&EFS++ASC/687.4
C16A

-687F4
&EFS++ASC/687.5
C16A

-687F5
&EFS++ASC/687.7
C16A

Battery cabinet 1

Battery cabinet 2

Battery cabinet 3

Battery cabinet 4

Battery cabinet 5

-687F6
&EFS++ASC/687.8
C16A

-688F1
&EFS++ASC/688.1
C16A

-688F2
&EFS++ASC/688.3
C16A

-688F3
&EFS++ASC/688.4
C16A

-688F4
&EFS++ASC/688.5
C16A

-688F5
&EFS++ASC/688.7
C16A

Battery cabinet 6

Battery cabinet 7

Battery cabinet 8

Battery cabinet 9

Battery cabinet 10

Battery cabinet 11

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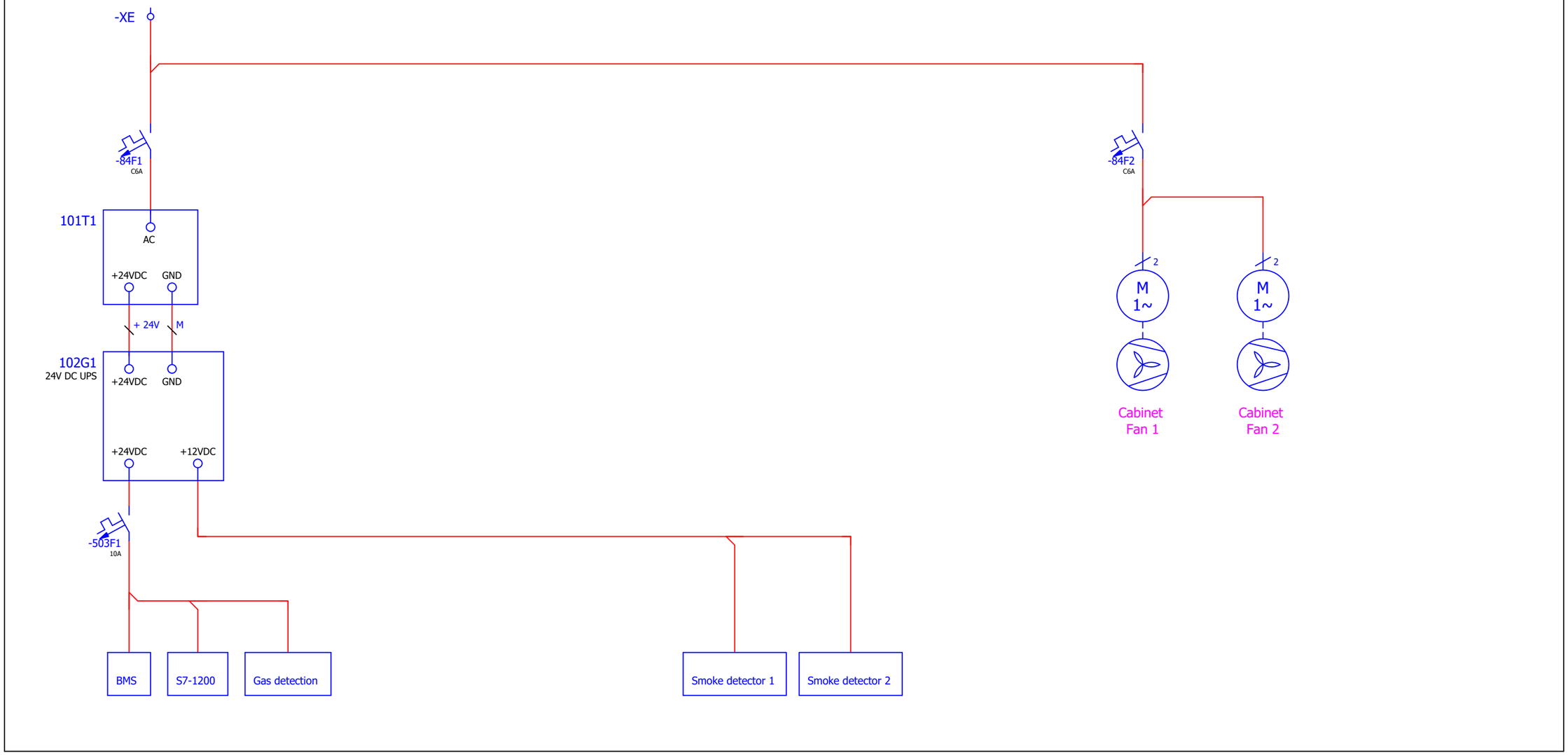
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Editor	Freqcon_JD			Statron	FREQCON	SYSTEMS OVERVIEW	20240809_V0.7	= UNIT_02 Battery Container 1	
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Single line diagram

Control circuit

Battery Cabinet

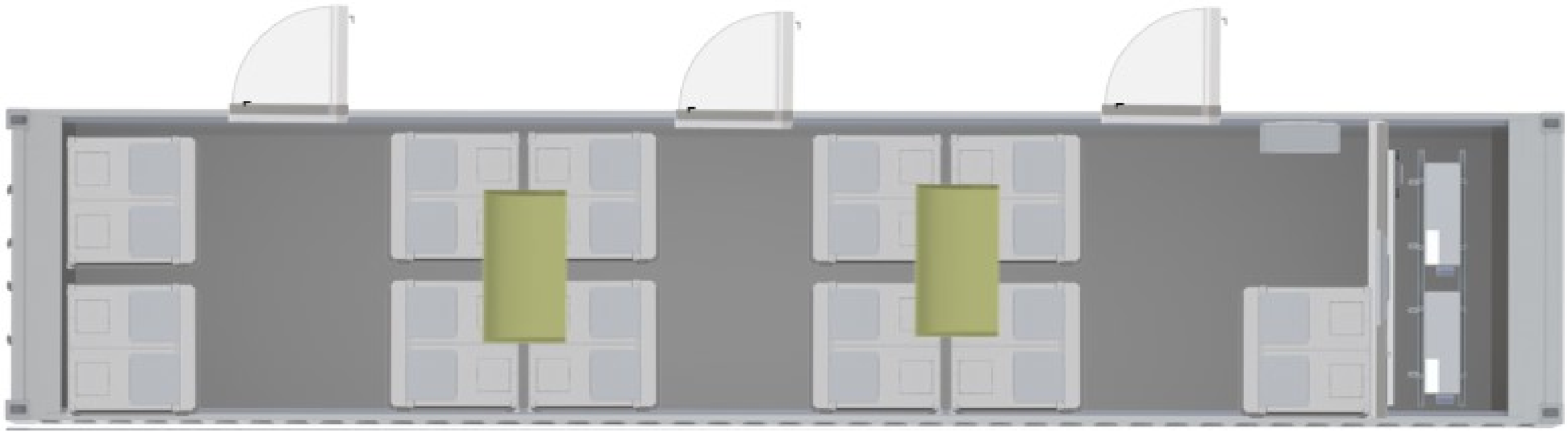


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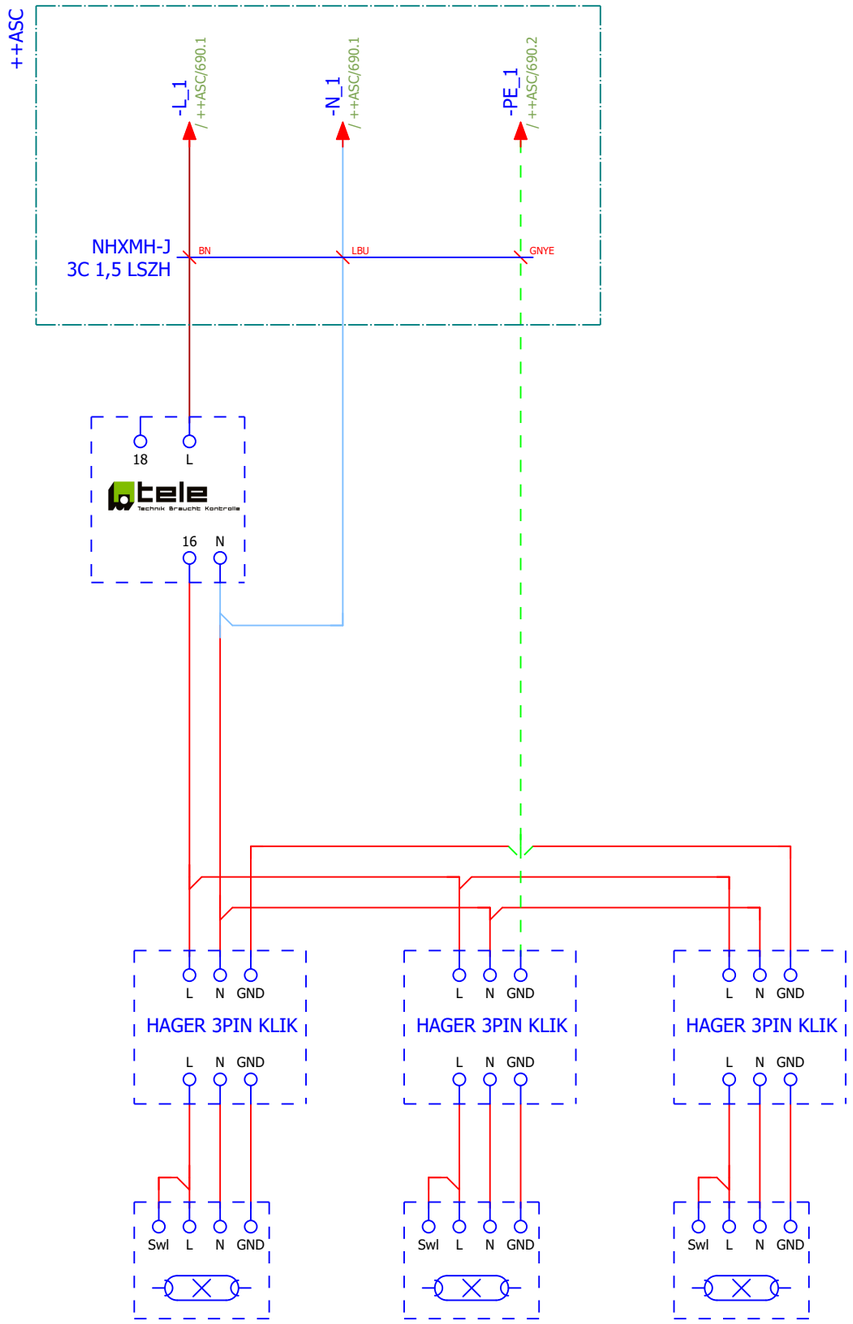
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&EFS++Container/190

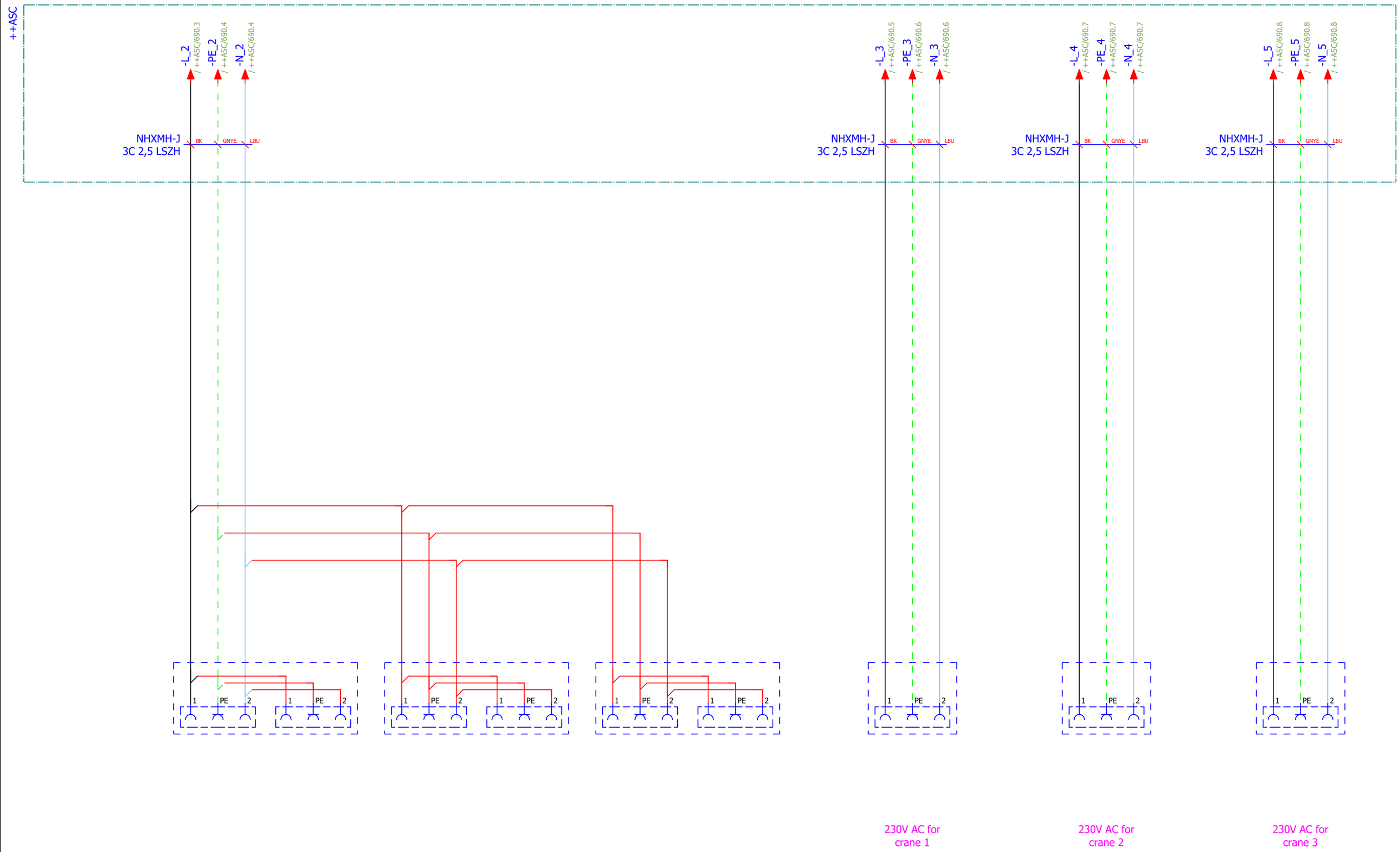
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++ASC

-L_6 / ++ASC/691.1
-N_6 / ++ASC/691.1
-PE_6 / ++ASC/691.2

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 1-4

-L_6 / ++ASC/691.1
-N_6 / ++ASC/691.1
-PE_6 / ++ASC/691.2

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 1-4

-L_7 / ++ASC/691.3
-N_7 / ++ASC/691.3
-PE_7 / ++ASC/691.3

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 5-8

-L_7 / ++ASC/691.3
-N_7 / ++ASC/691.3
-PE_7 / ++ASC/691.3

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 5-8

-L_8 / ++ASC/691.4
-N_8 / ++ASC/691.4
-PE_8 / ++ASC/691.4

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 9-11

-L_8 / ++ASC/691.4
-N_8 / ++ASC/691.4
-PE_8 / ++ASC/691.4

L N GND
13A fused
Spur K983ALM
L N GND

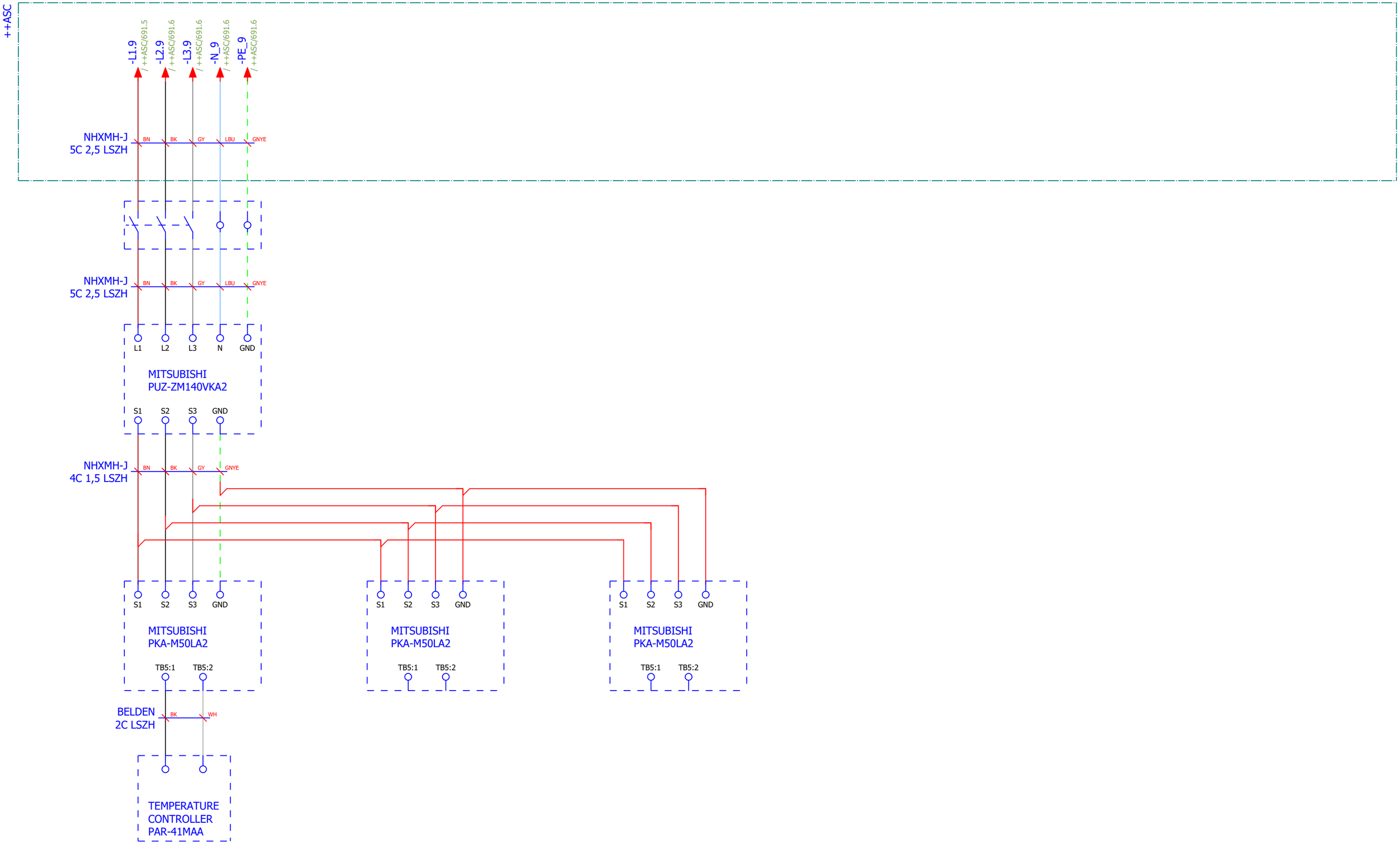
1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 9-11

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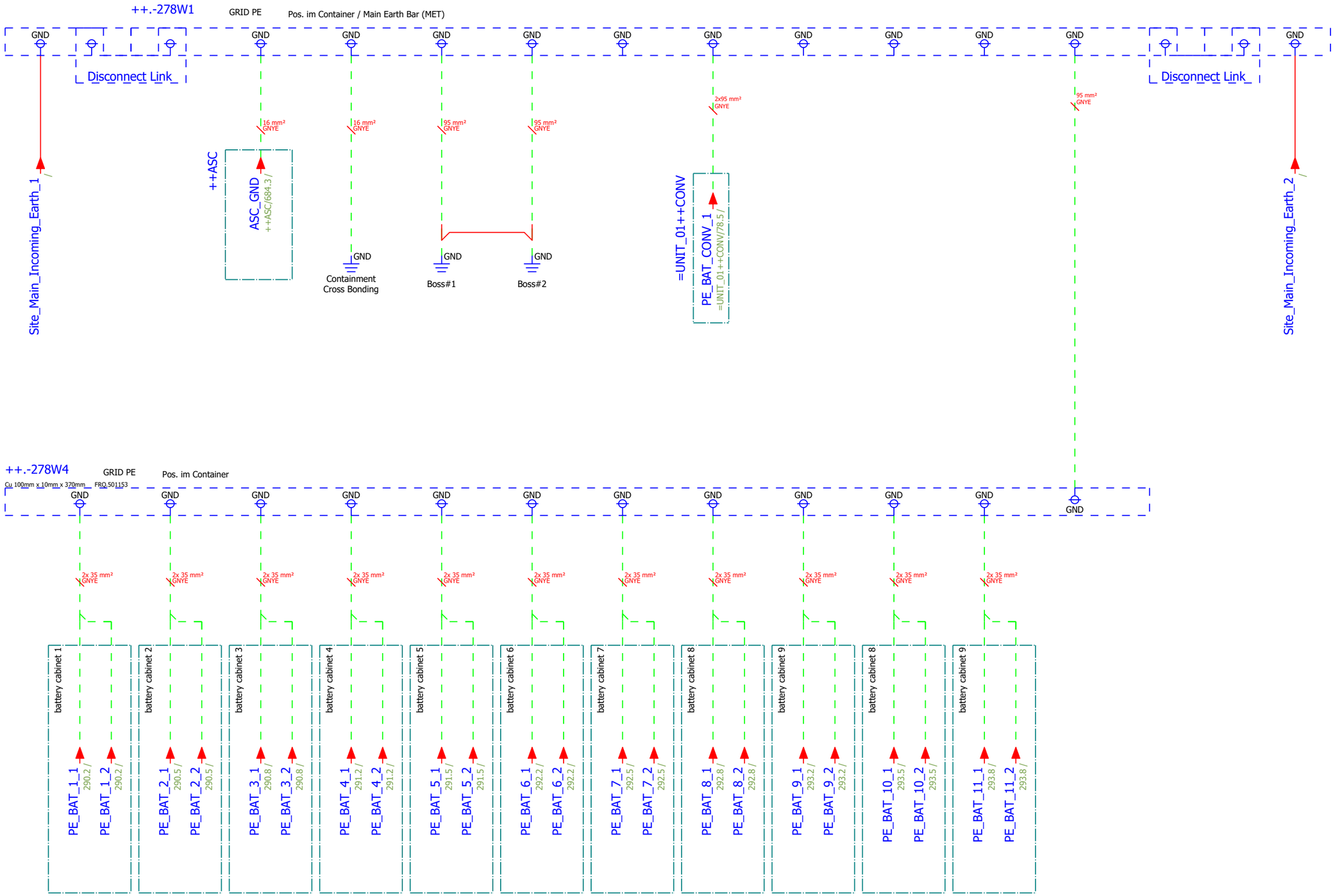


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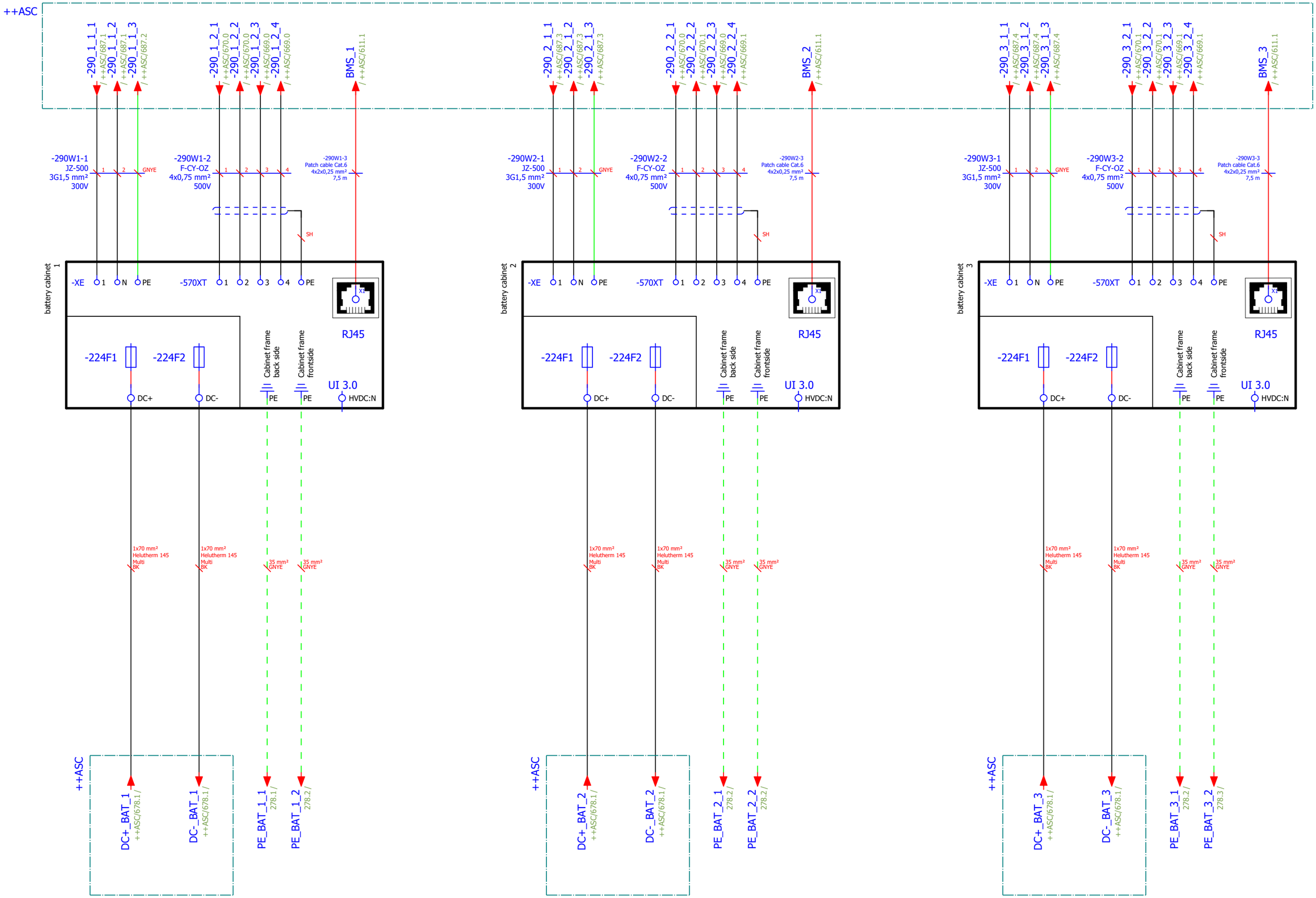
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Busbars PE



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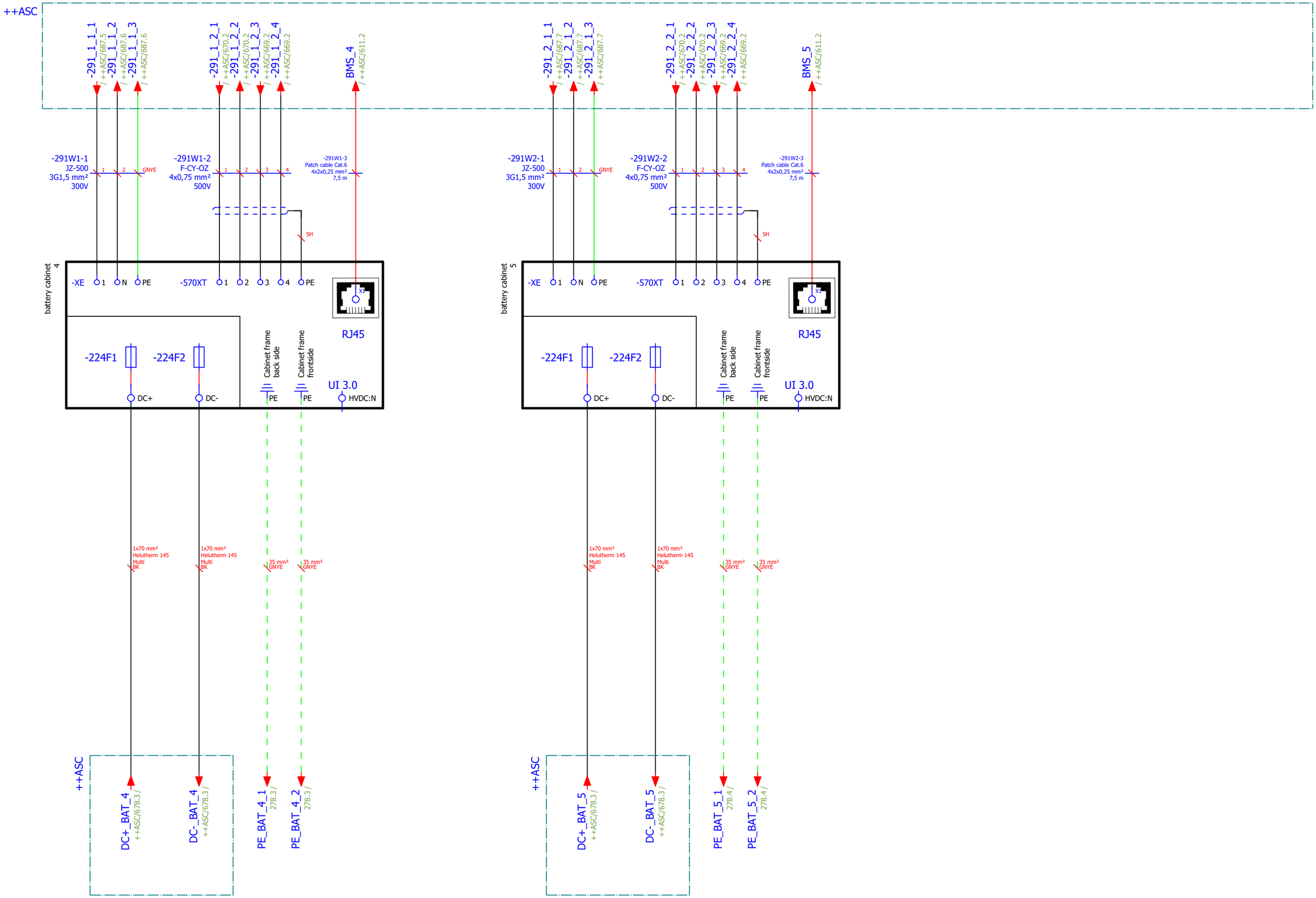
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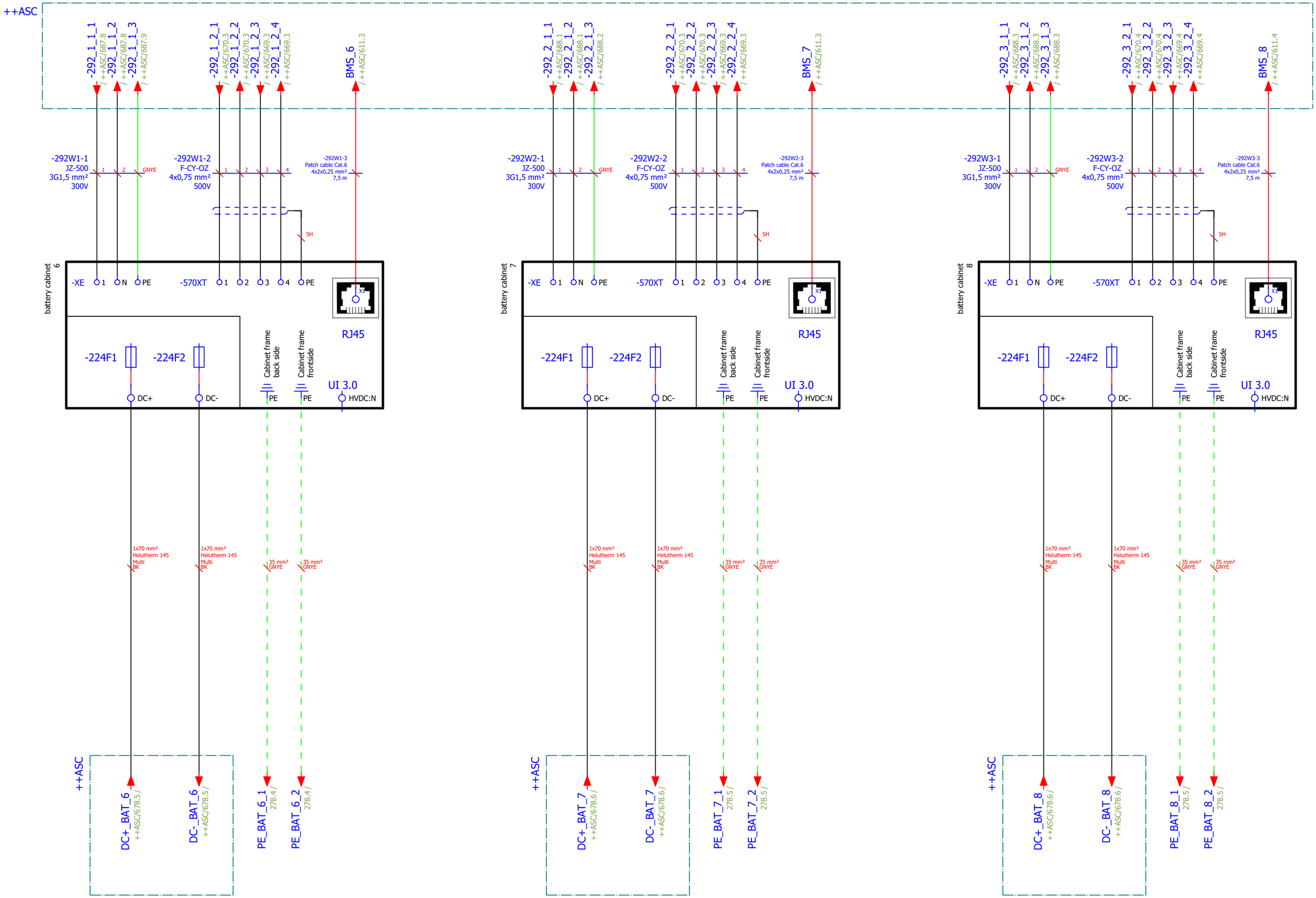
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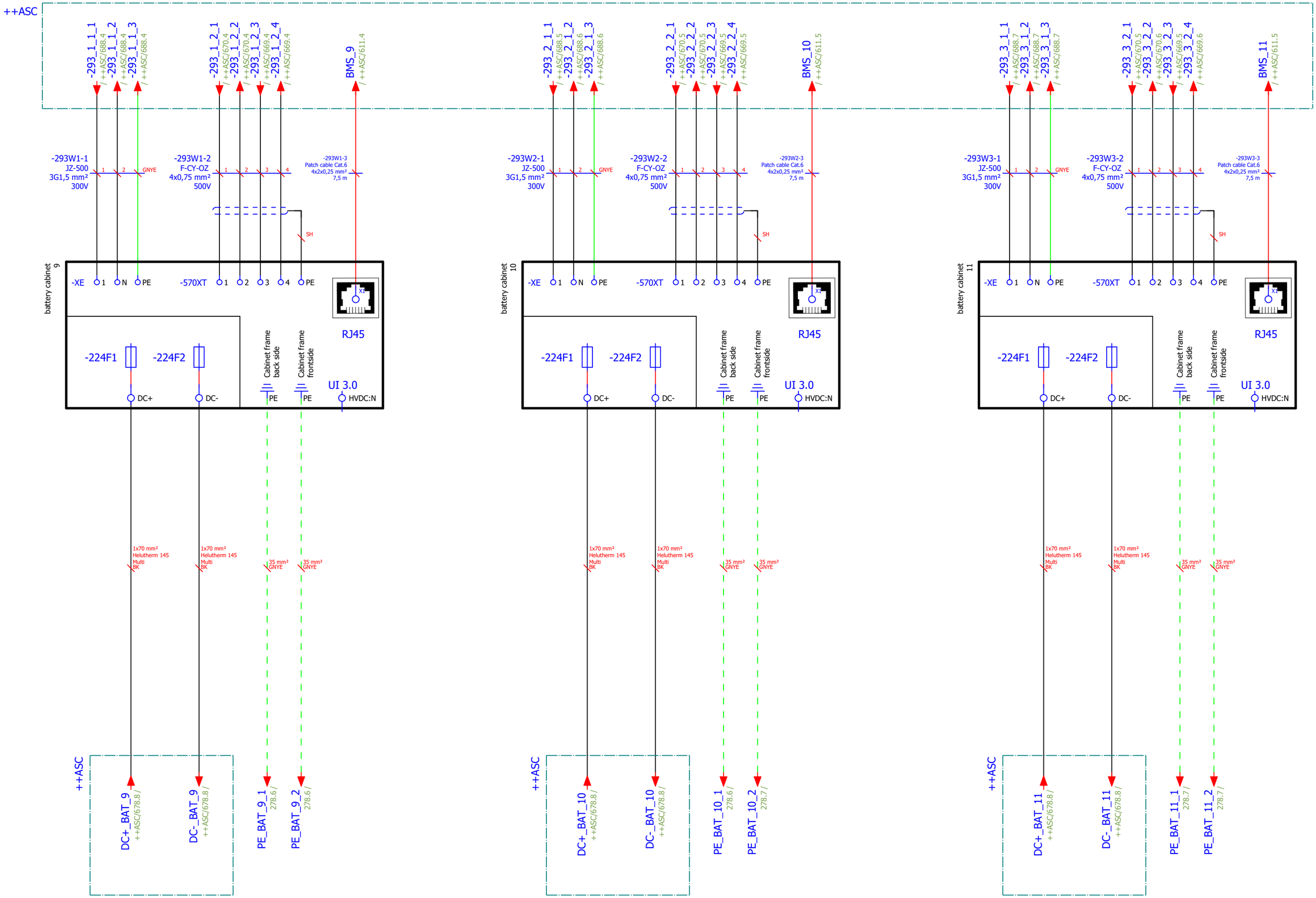
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691.9 / 3L1.3
691.9 / 3L2.3
691.9 / 3L3.3

6 mm² BK
6 mm² BK
6 mm² BK

-101Q1
2,2...3,2A
set 3,0A
3RV2011-1DA25
3RV2917-5AA00

1 3 5 13 21
2 4 6 14 22
I> I> I>
/601.7

-1PE2 / 603.4

1,5 mm² BK
1,5 mm² BK
1,5 mm² BK
1,5 mm² GNYE

-101T1
20 A
set voltage: 26 V DC

L1 L2 L3 PE
QUINT-PS/3AC/24DC/20/CO
AC AC AC
3
DCOK
I<IN
+ +' - -' -'' 13 14

L+ L-
4 mm² GNYE
4 mm² BU
4 mm² BU/WH

21L+1 602.2 /
21M1 602.2 /
-1PE1 603.4 /

-1L+1
603.2 /
0,75 mm² BU

0,75 mm² BU
1
DI0
+-DI_21
/621.4
E40.0
-101T1:14
400VAC Power Supply 24V DC OK

-1L+2
603.2 /
0,75 mm² BU
*2

-101Q1
/601.2
13
14
*2

0,75 mm² BU
2
DI1
/621.5
E40.1
-101Q1:14
fuse 24V DC power supply unit

*2
The single conductor must be placed in the protective tube

400VAC Power Supply 24V DC OK

fuse 24V DC power supply unit

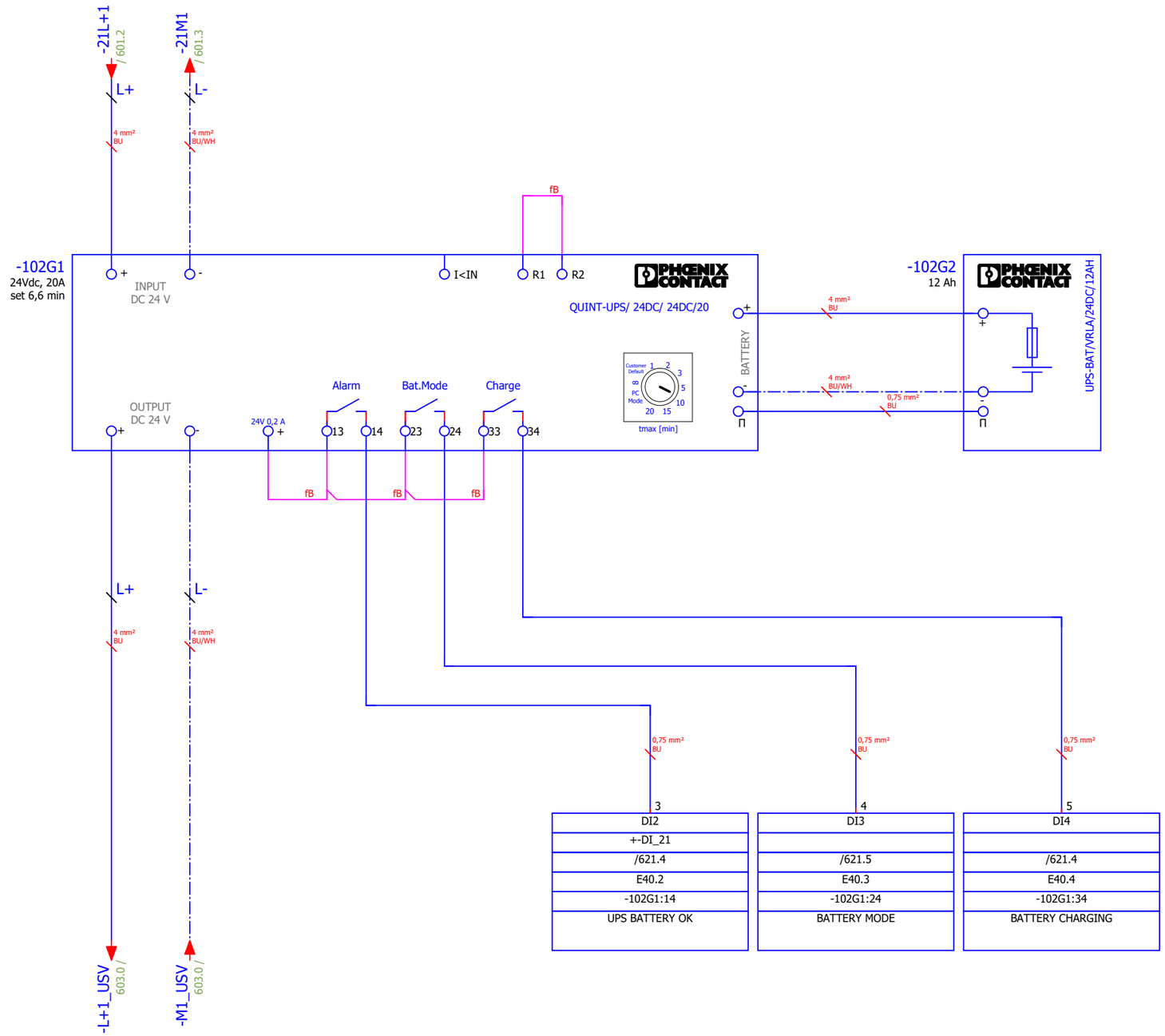
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Power supply unit from 400V AC

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Editor	Freqcon_JD			Statron	FREQCON	CONTROL VOLTAGE POWER SUPPLY UNIT	20240809_V0.7	= UNIT_02	Battery Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

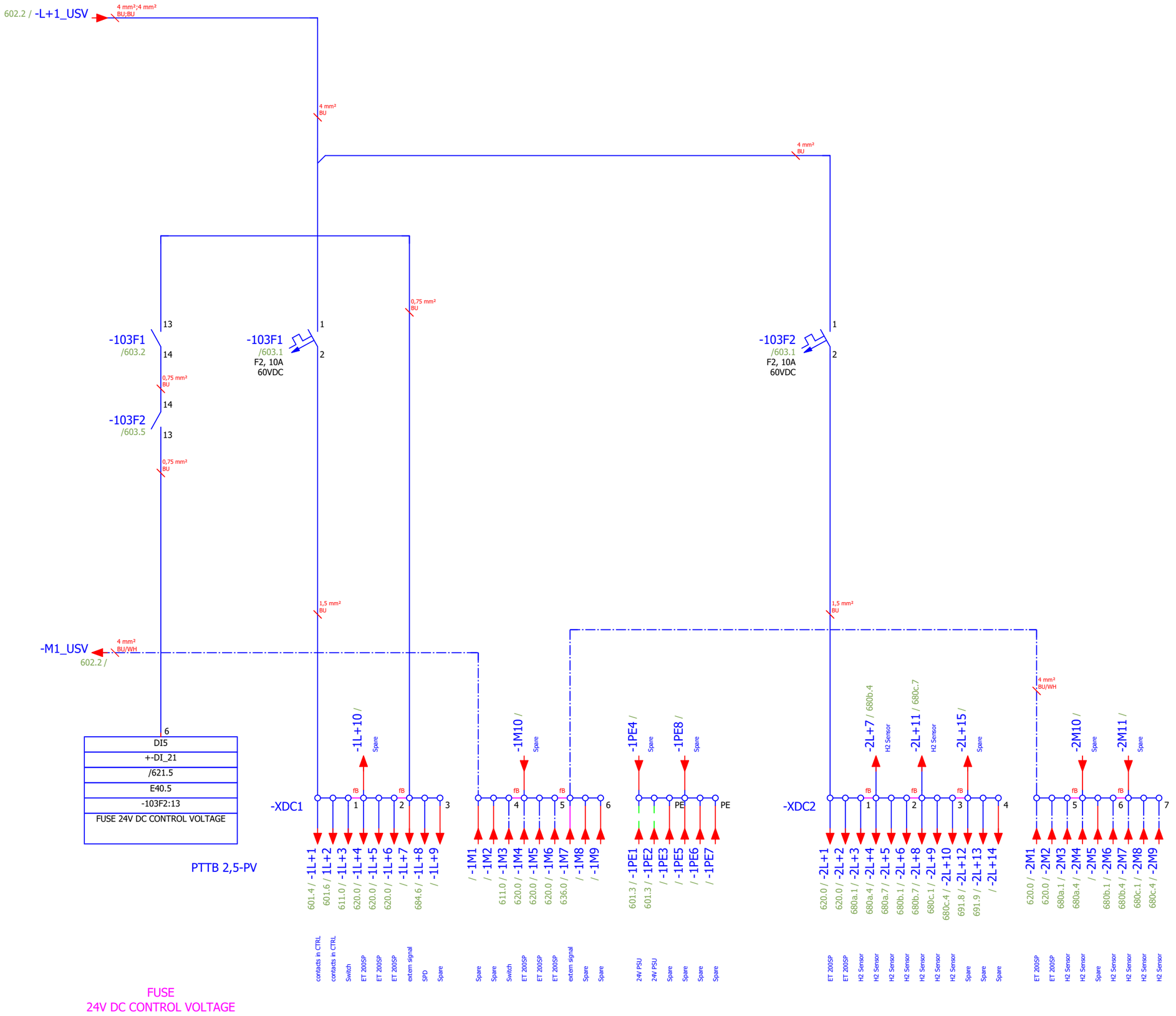
page: 601
total: 482



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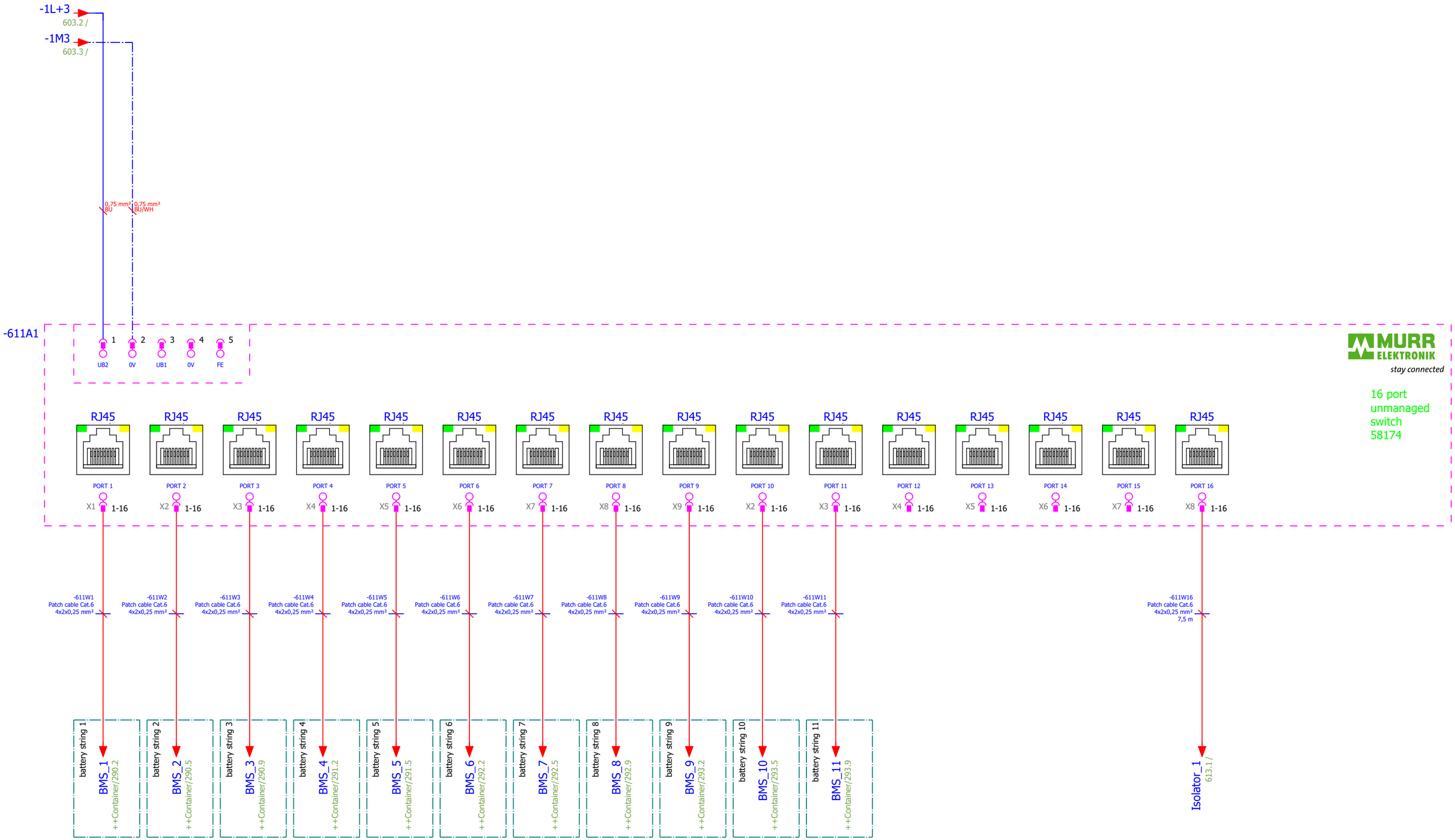
Editor	Freqcon_JD			Statron	FREQCON	CONTROL VOLTAGE UPS	20240809_V0.7	= UNIT_02 Battery Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet — page: 602
Date								+ — total: 482



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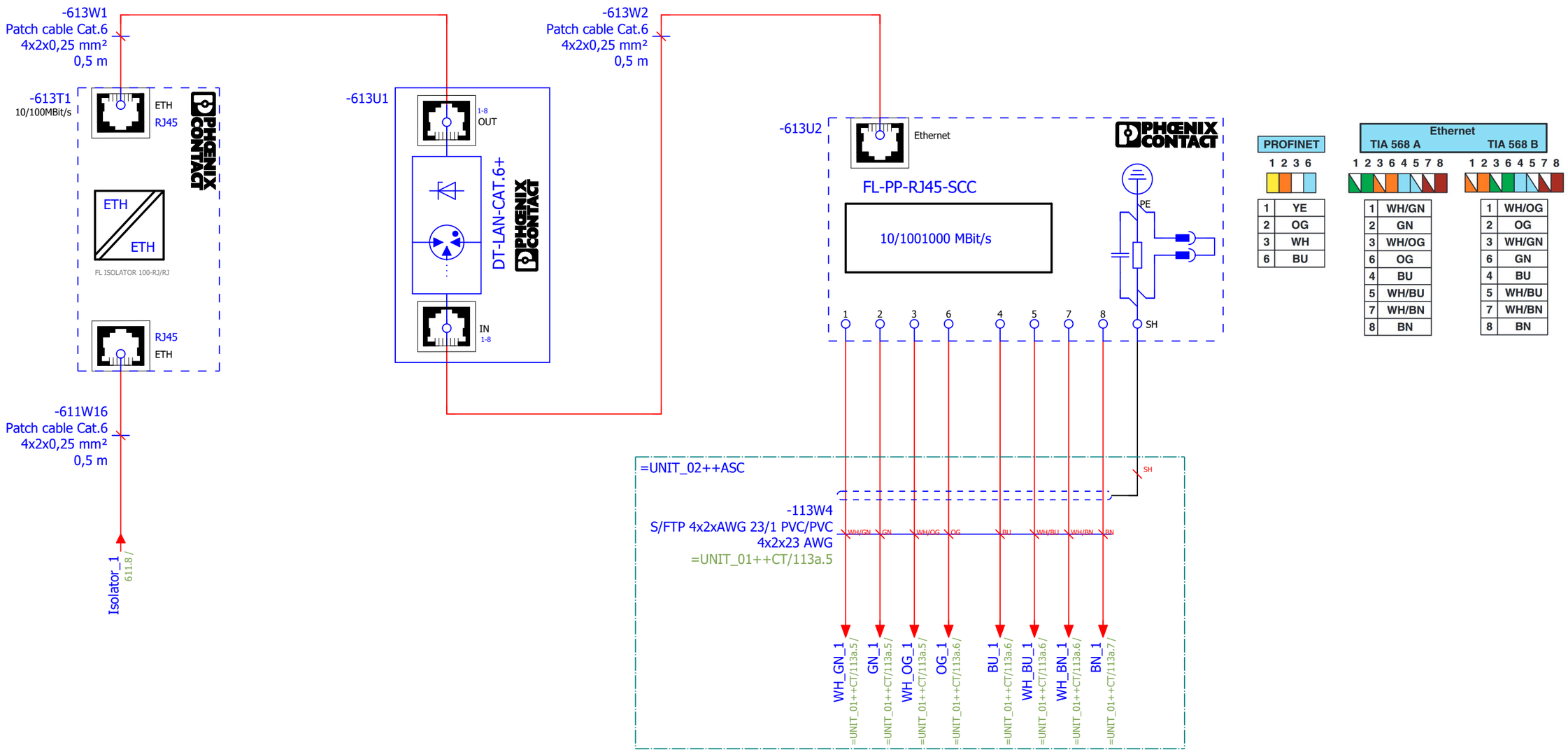
Editor	Freqcon_JD			Statron	FREQCON	CONTROL VOLTAGE FUSE	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	20.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxiliary cabinet	page: 603
Date								+	total: 482



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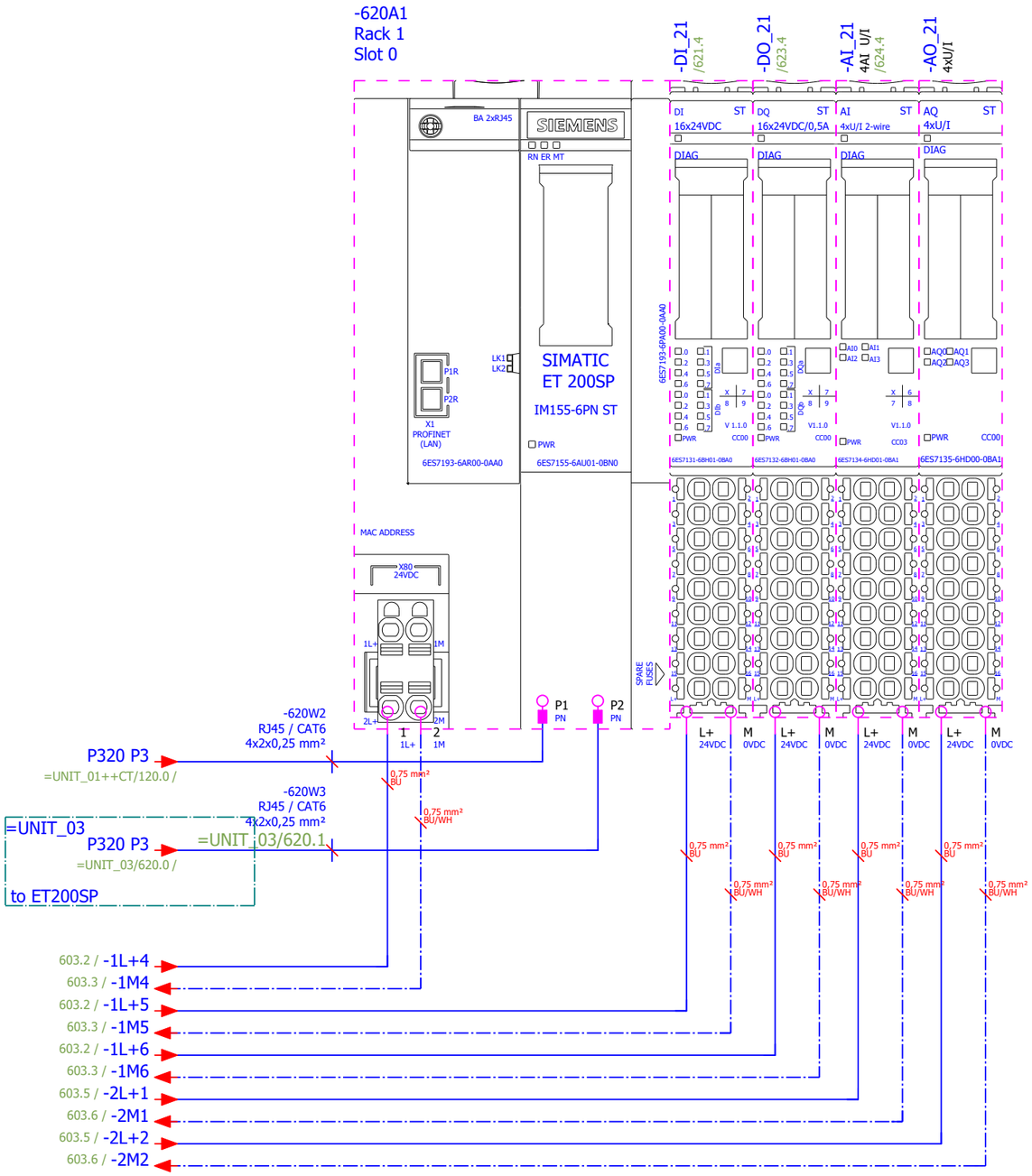
Editor	Freqcon_JD			Statron	FREQCON	ETHERNET SWITCH	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 611
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	ETHERNET / PROFINET ISOLATOR	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 613
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	ET200 24V DC ASC	20240809_V0.7	= UNIT_02	Battery Container 1
Date	20.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482

-DI_21

/620.3

400VAC Power Supply 24V DC OK	/601.5	DI0 1	E40.0	E40.1 2	DI1	/601.7	fuse 24V DC power supply unit
UPS BATTERY OK	/602.5	DI2 3	E40.2	E40.3 4	DI3	/602.6	BATTERY MODE
BATTERY CHARGING	/602.7	DI4 5	E40.4	E40.5 6	DI5	/603.1	FUSE 24V DC CONTROL VOLTAGE
Gassensor OK BAT 1-4	/680a.7	DI6 7	E40.6	E40.7 8	DI7	/680b.7	Gassensor OK BAT 5-8
Gassensor OK BAT 9-11	/680c.7	DI8 9	E41.0	E41.1 10	DI9		
FUSE AND LIGHTNING PROTECTION	/684.8	DI10 11	E41.2	E41.3 12	DI11	/691.8	Fuse Exhaust Unit
Fuse Cooling Units	/691.9	DI12 13	E41.4	E41.5 14	DI13		
		DI14 15	E41.6	E41.7 16	DI15		
	/620.3	24VDC L+		M	0VDC	/620.3	

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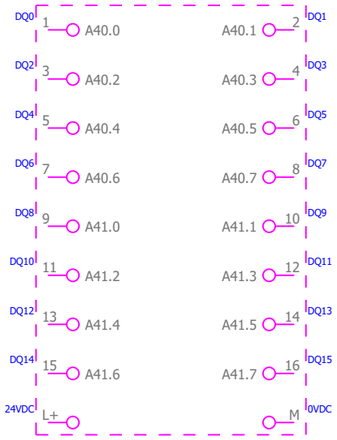
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Editor	Freqcon_JD			Statron	FREQCON	ET200SP DIGITAL INPUTS DI_21 + DI_22	20240809_V0.7	= UNIT_02	Battery Container 1	
Date	14.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 621
Date								+		total: 482

0	1	2	3	4	5	6	7	8	9

-DO_21

/620.3



230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4 /636.1

230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11 /636.4

/620.3

/636.2 230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8

/620.3

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Editor	Freqcon_JD			Statron	FREQCON	ET200SP DIGITAL OUTPUTS DO_21	20240809_V0.7	= UNIT_02	Battery Container 1
Date	14.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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-AI_21

/620.3



gas concentration BAT 1-4 /680a.2

gas concentration BAT 9-11 /680c.2

gas concentration BAT 1-4 /680a.2

gas concentration BAT 9-11 /680c.2

/620.3

/680b.2 gas concentration BAT 5-8

/680b.2 gas concentration BAT 5-8

/620.4

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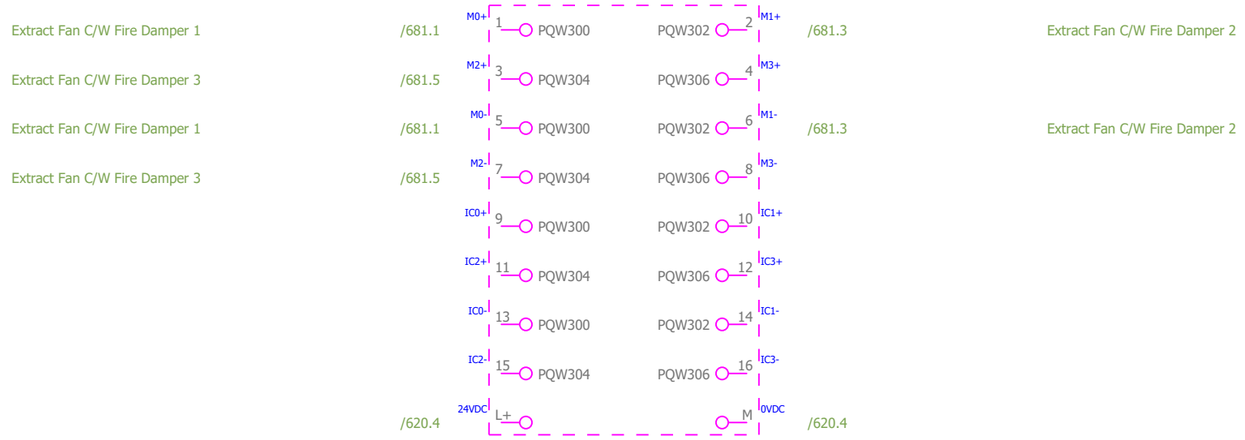
next page: 625

Editor	Freqcon_JD			Statron	FREQCON	ET200SP ANALOG INPUTS AI_21	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	14.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 624
Date								+	total: 482

0	1	2	3	4	5	6	7	8	9

-AO_21

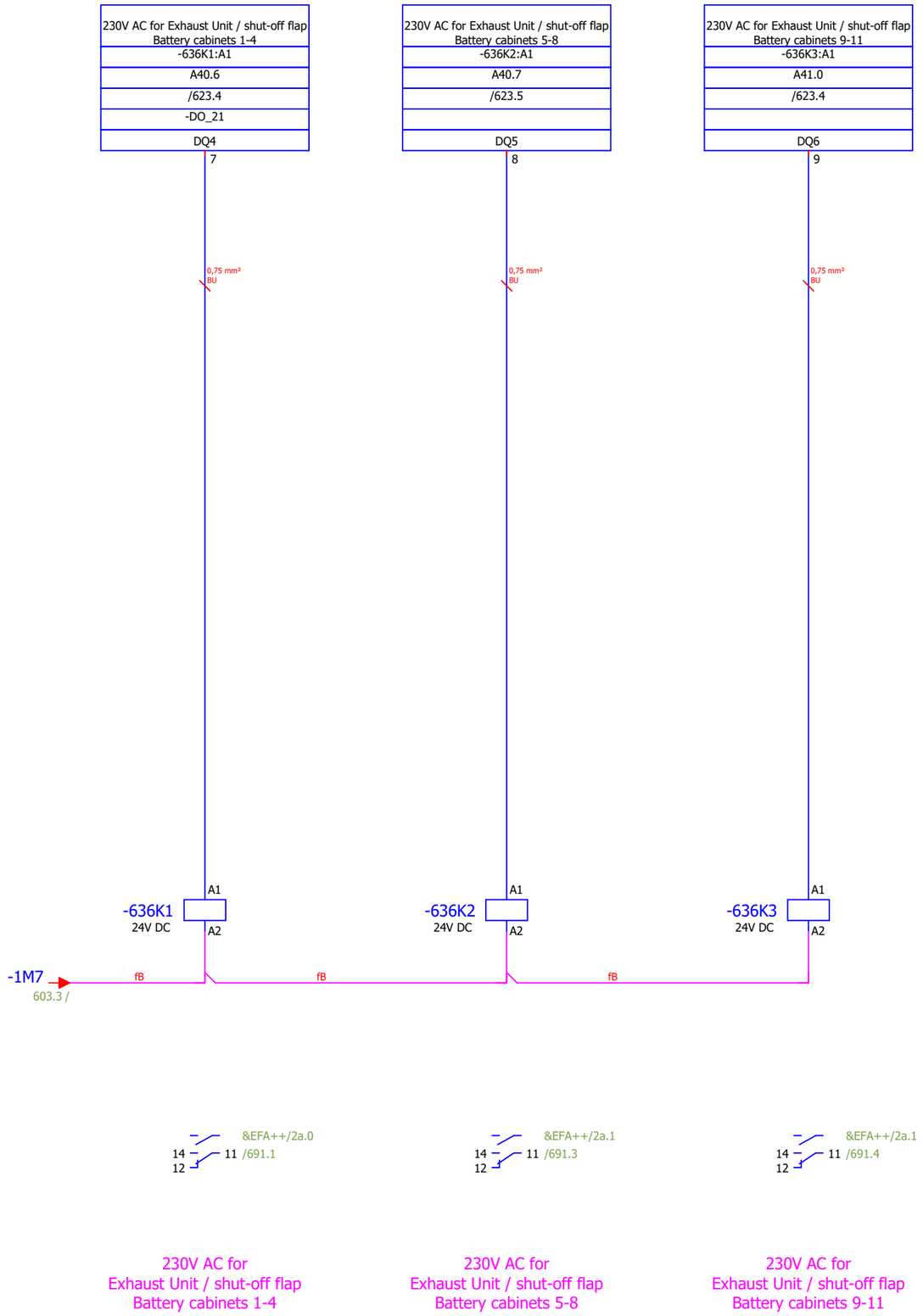
/620.4



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Editor	Freqcon_JD			Statron	FREQCON	ET200SP ANALOG OUTPUTS AO_21	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	14.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 625
Date								+	total: 482

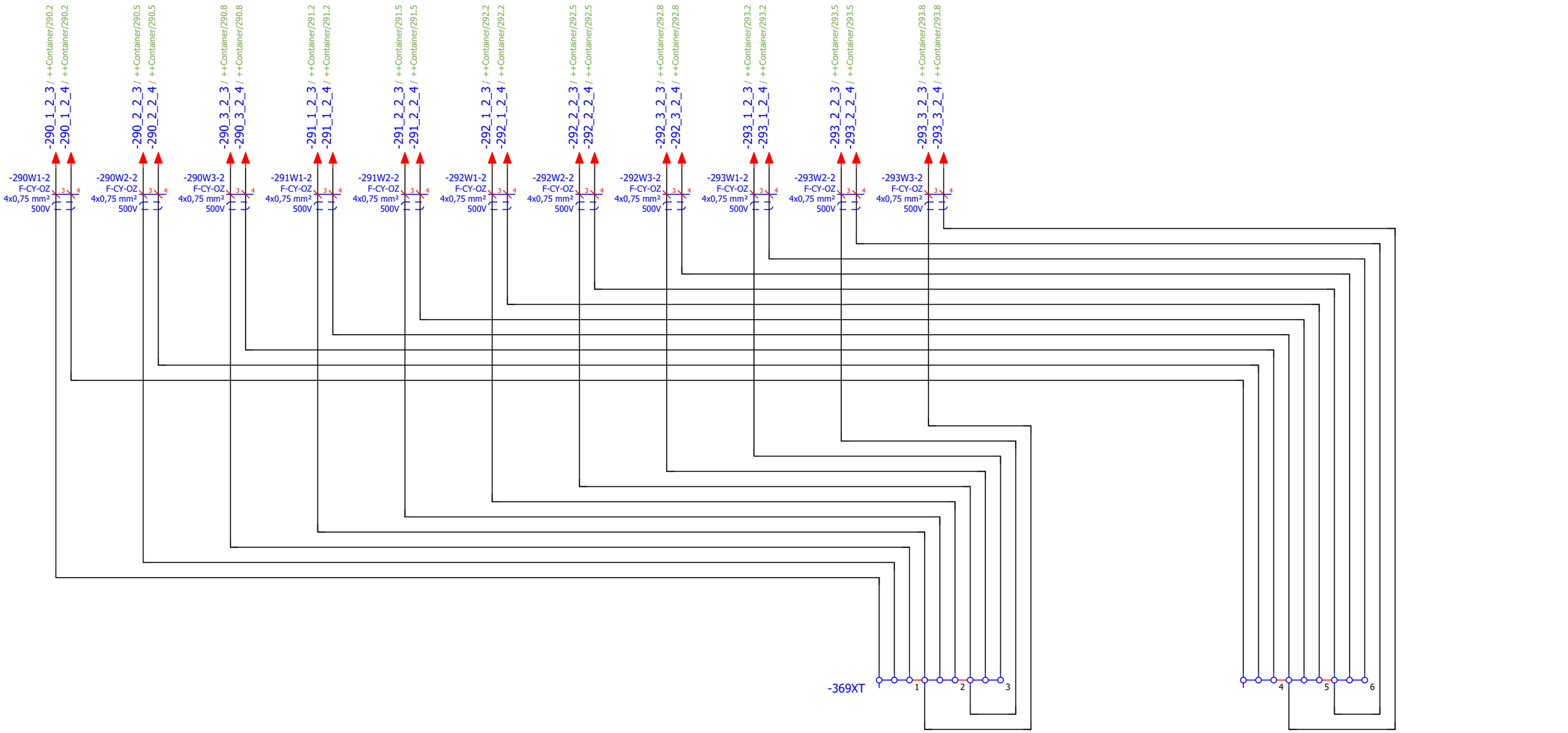


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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS FIRE DAMPER	20240809_V0.7	= UNIT_02	Battery Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482



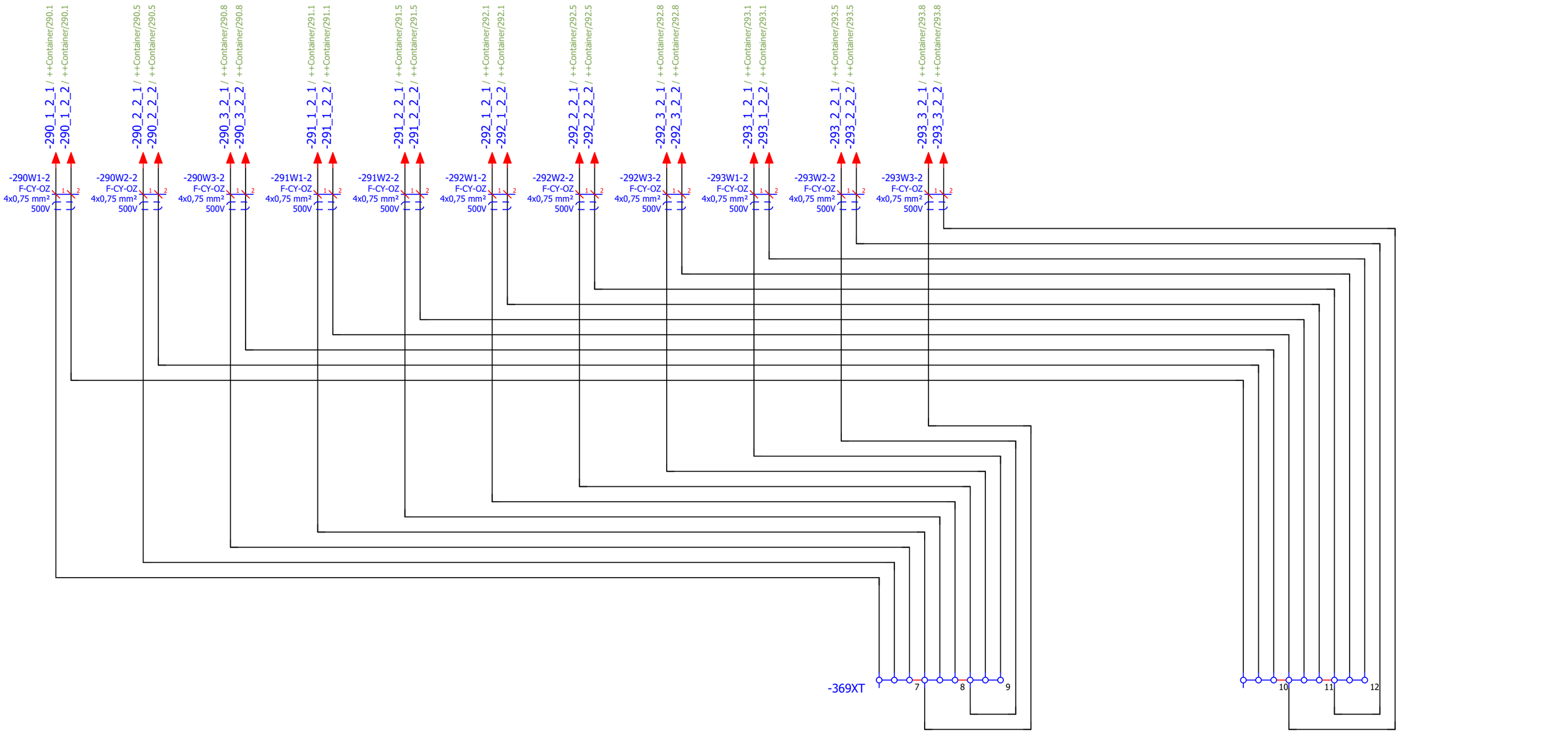
battery cabinet smoke detector
potential-free contacts
customer

battery cabinet smoke detector
potential-free contacts
customer

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Editor	Freqcon_JD			Statron	FREQCON	SMOKE POTENTIAL-FREE CONTACTS	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 669
Date								+	total: 482



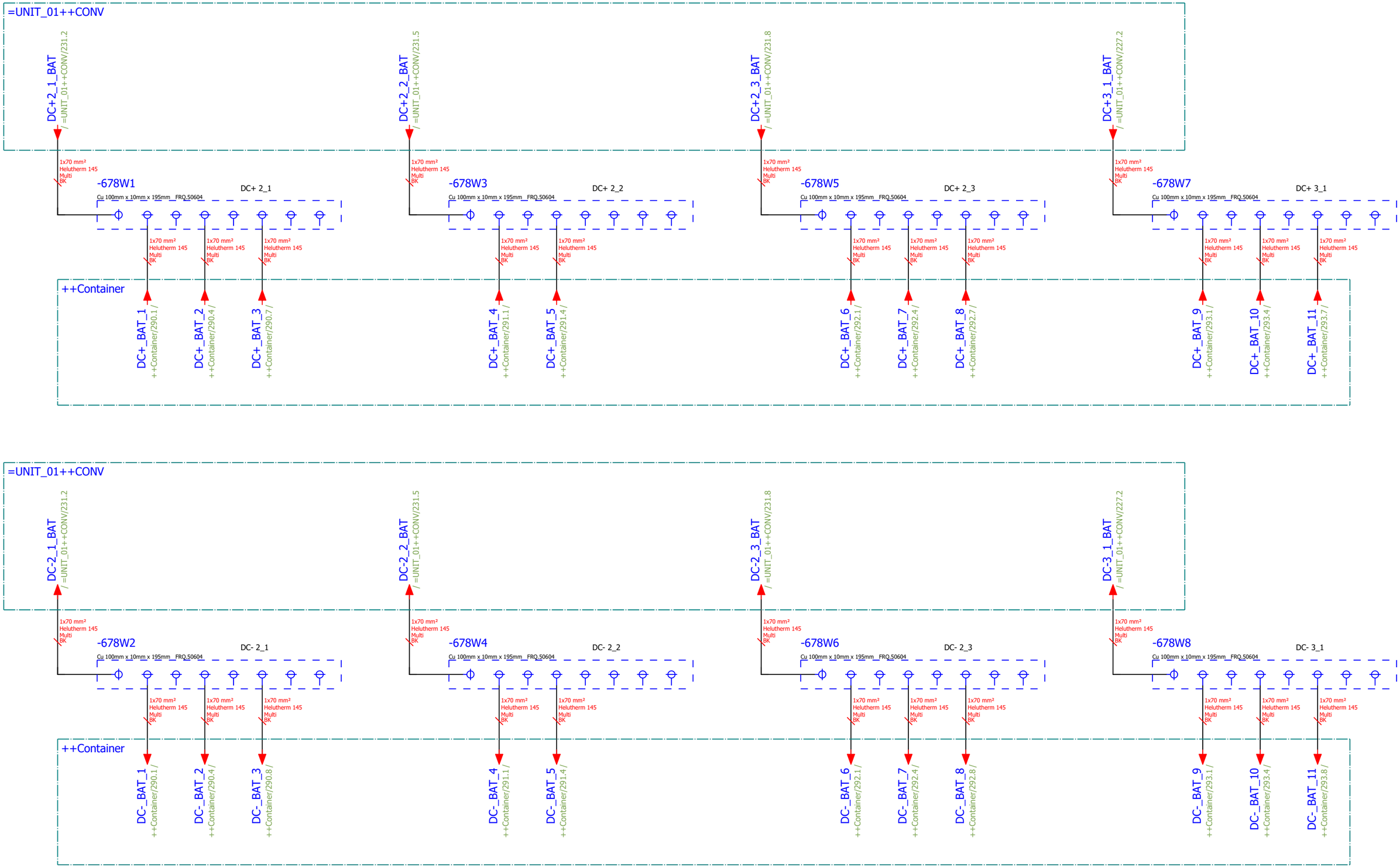
battery cabinet gas
potential-free contacts
customer

battery cabinet gas
potential-free contacts
customer

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678

Editor	Freqcon_JD			Statron	FREQCON	GAS POTENTIAL-FREE CONTACTS	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 670
Date								+	total: 482



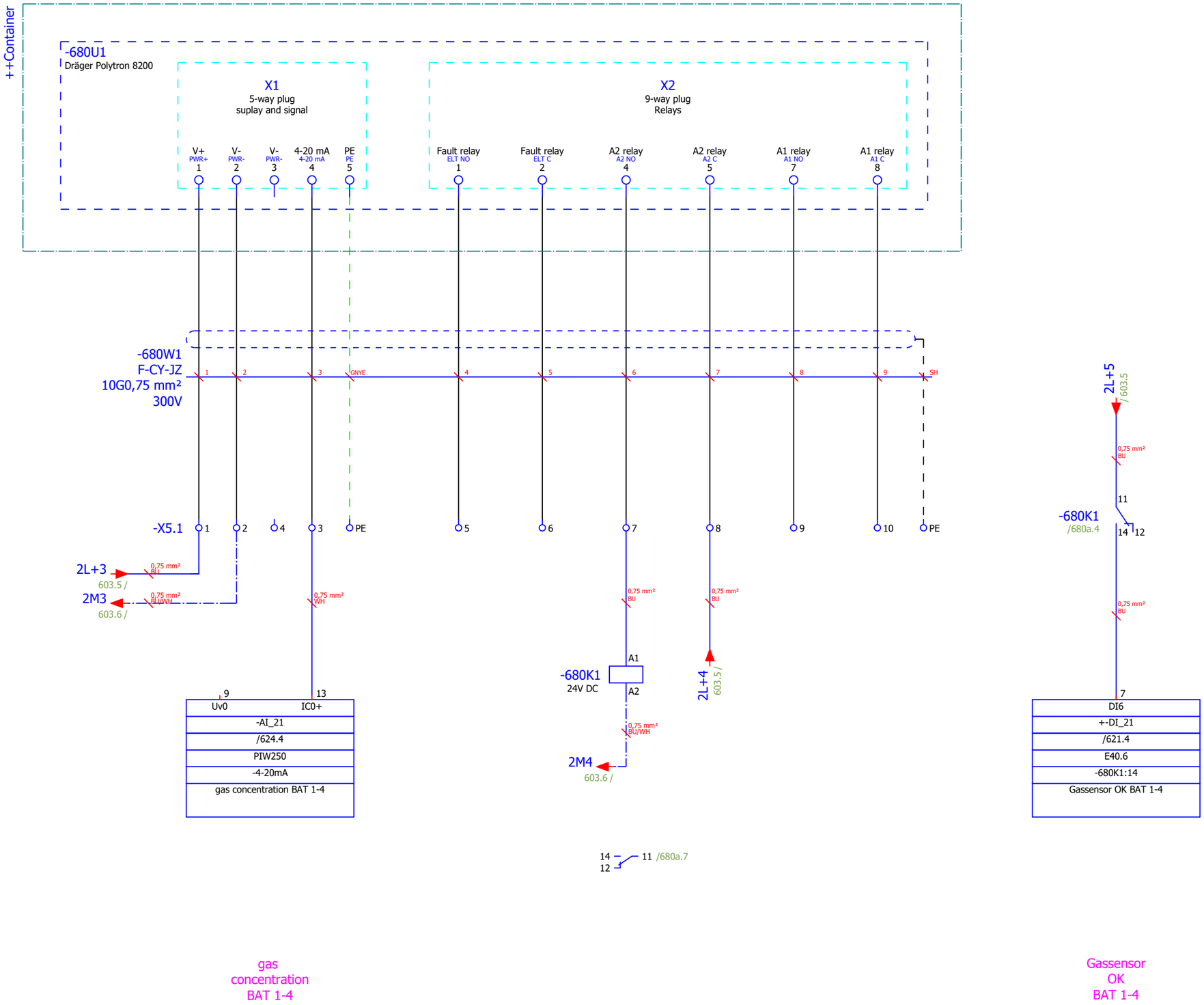
previous page: 670

next page: 680a

Editor	Freqcon_JD			Statron	FREQCON	DC BATTERY CABINETS	20240809_V0.7	= UNIT_02	Battery Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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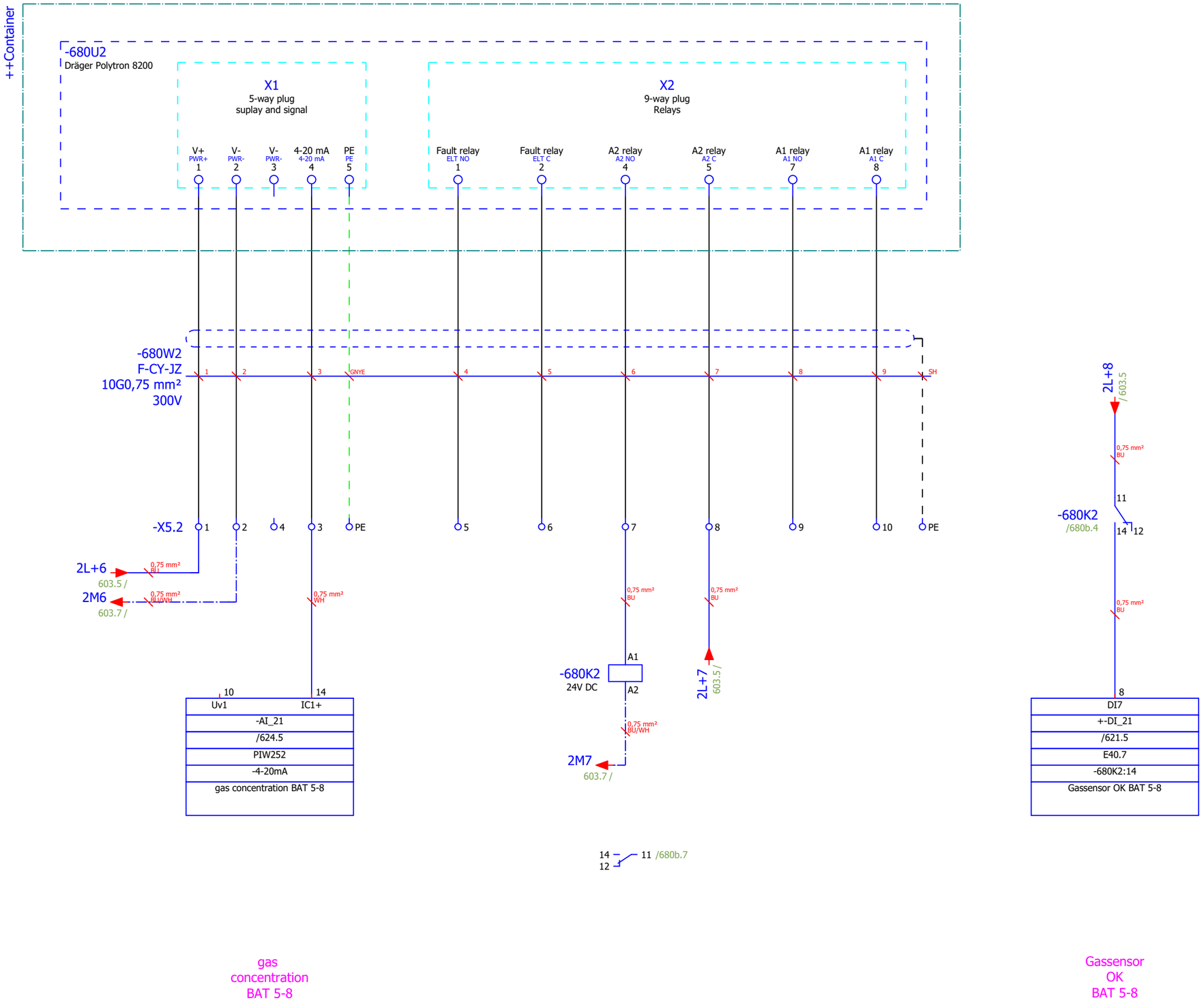
total: 482



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next page: 680b

Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 1-4	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	14.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 680a
Date								+	total: 482



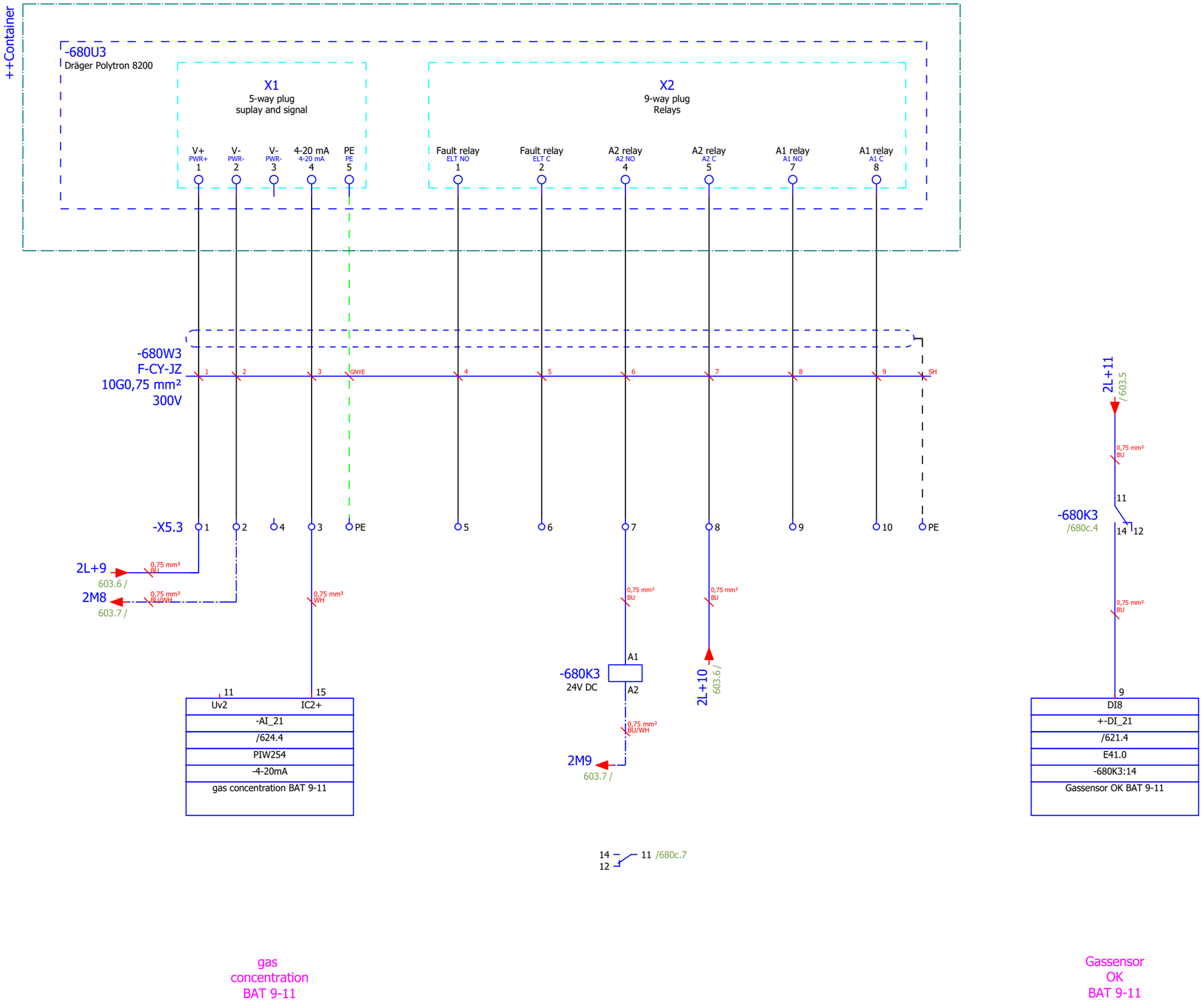
gas concentration BAT 5-8

Gassensor OK BAT 5-8

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Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 5-8	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 680b
Date								+	total: 482



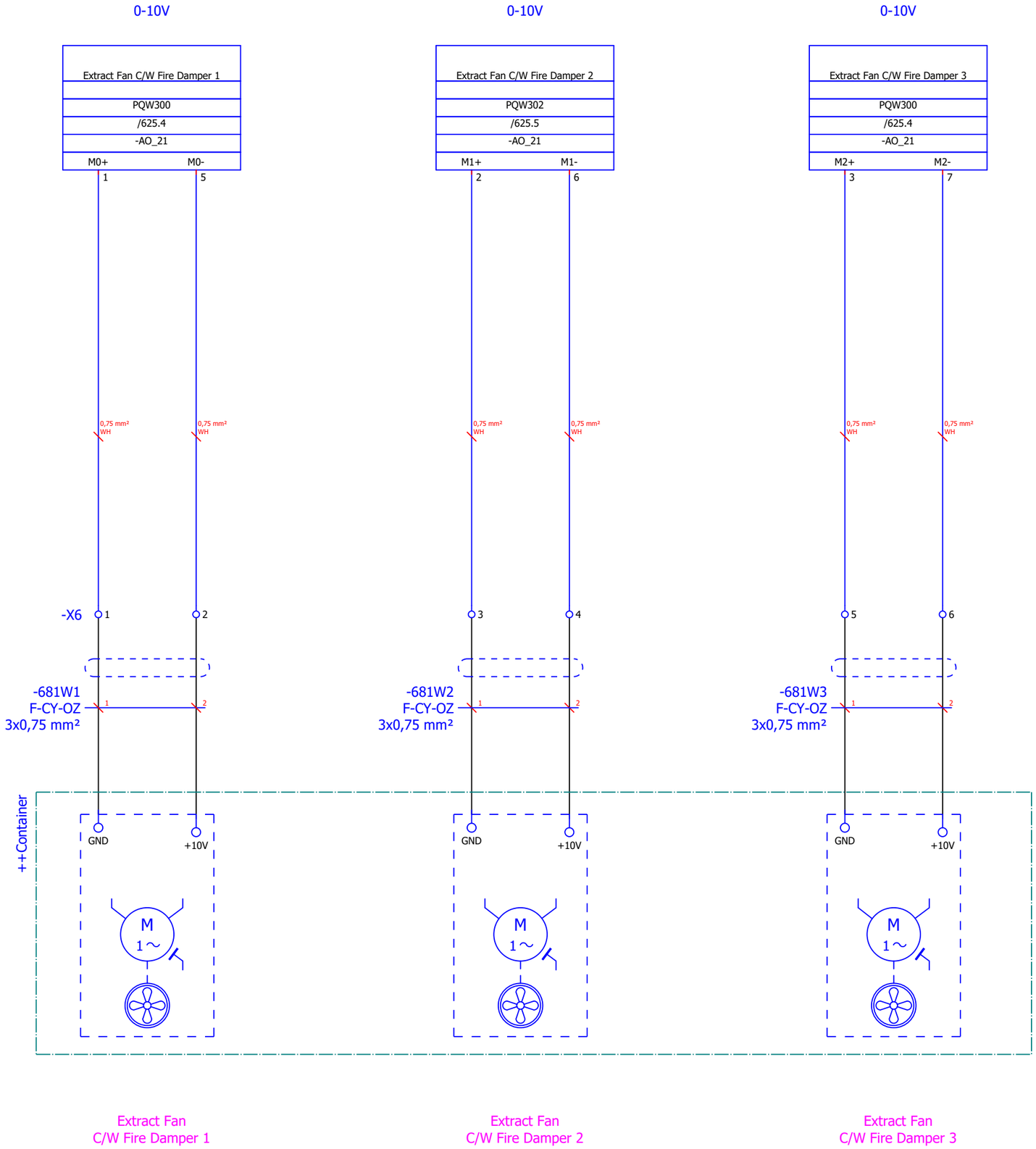
gas concentration BAT 9-11

Gassensor OK BAT 9-11

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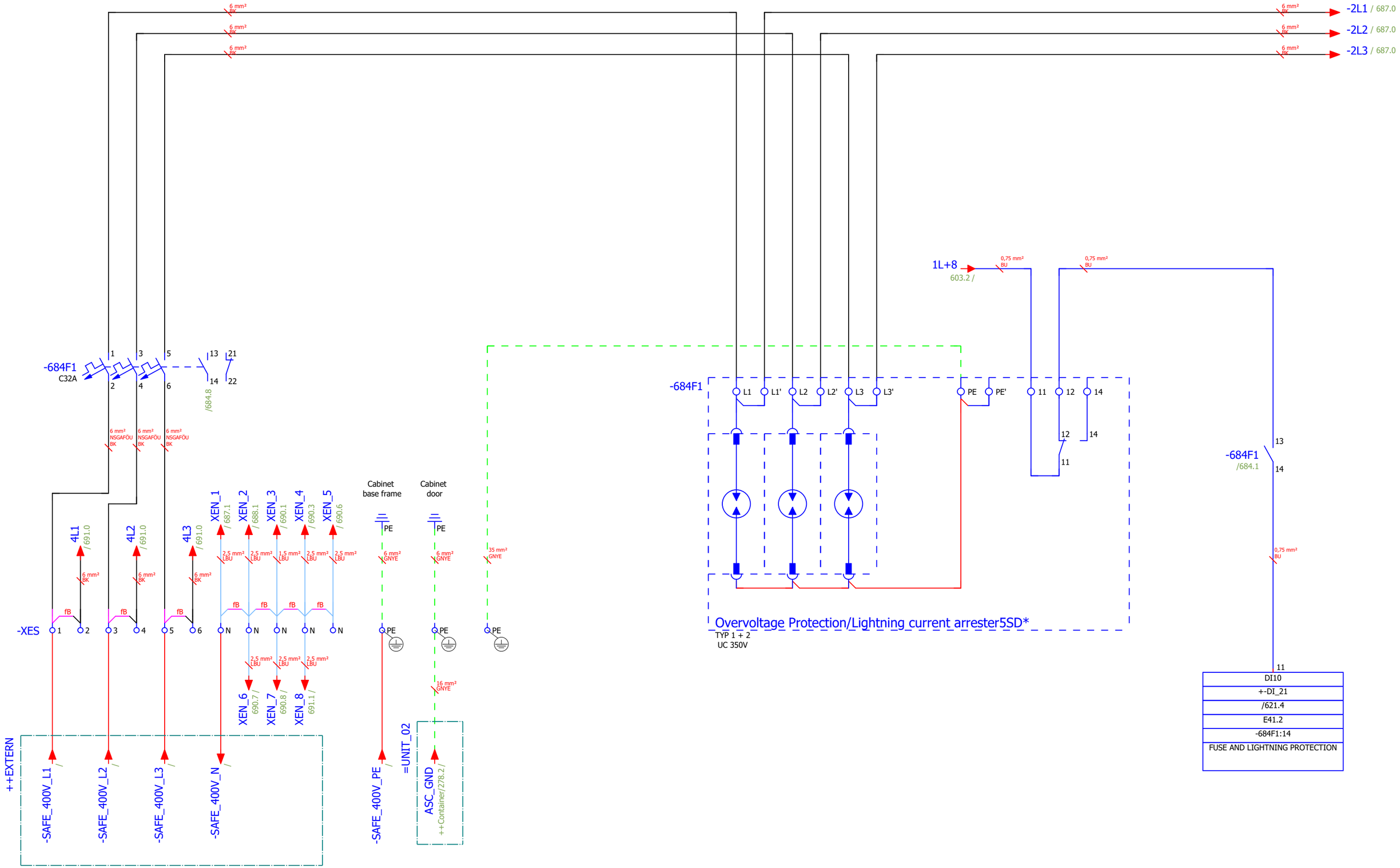
Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 9-11	20240809_V0.7	= UNIT_02 Battery Container 1
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet — page: 680c
Date								+ — total: 482



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Editor	Freqcon_JD			Statron	FREQCON	EXTRACT FAN FIRE DAMPER	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	14.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 681
Date								+	total: 482



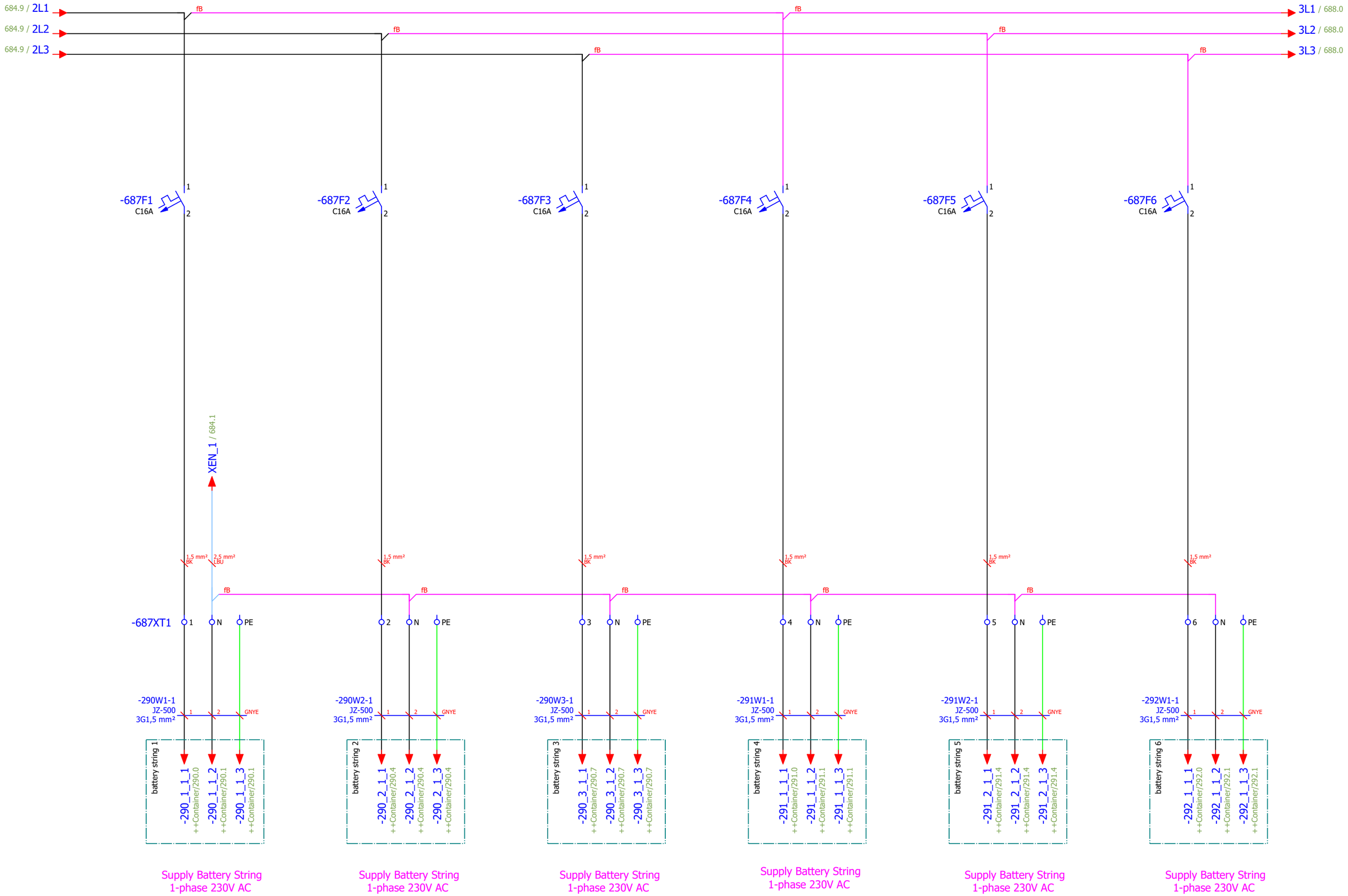
UPS Bat-Con 1
3-phase 400V AC

FUSE AND
LIGHTNING PROTECTION

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Editor	Freqcon_JD			Statron	FREQCON	AUXILIARY SUPPLY 400V AC	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 684
Date								+	total: 482



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Editor	Freqcon_JD			Statron		AUXILIARY SUPPLY 400V / 230V AC DISTRIBUTION	20240809_V0.7	= UNIT_02	Battery Container 1
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet page: 687
Date								+	total: 482

687.9 / 3L1 fB
687.9 / 3L2 fB
687.9 / 3L3 fB

3L1.1 / 690.0
3L2.1 / 690.0
3L3.1 / 690.0

-688F1 C16A 1 2
-688F2 C16A 1 2
-688F3 C16A 1 2
-688F4 C16A 1 2
-688F5 C16A 1 2

XEN_2 / 684.1

1,5 mm² BK
2,5 mm² LBU

-687XT1 7 N PE
-687XT1 8 N PE
-687XT1 9 N PE
-687XT1 10 N PE
-687XT1 11 N PE

-292W2-1 JZ-500 3G1,5 mm² 1 2 GNYE
-292W3-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W1-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W2-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W3-1 JZ-500 3G1,5 mm² 1 2 GNYE

battery string 7
-292_2_1_1 ++Container/292.4
-292_2_1_2 ++Container/292.4
-292_2_1_3 ++Container/292.4

battery string 8
-292_3_1_1 ++Container/292.7
-292_3_1_2 ++Container/292.7
-292_3_1_3 ++Container/292.7

battery string 9
-293_1_1_1 ++Container/293.0
-293_1_1_2 ++Container/293.1
-293_1_1_3 ++Container/293.1

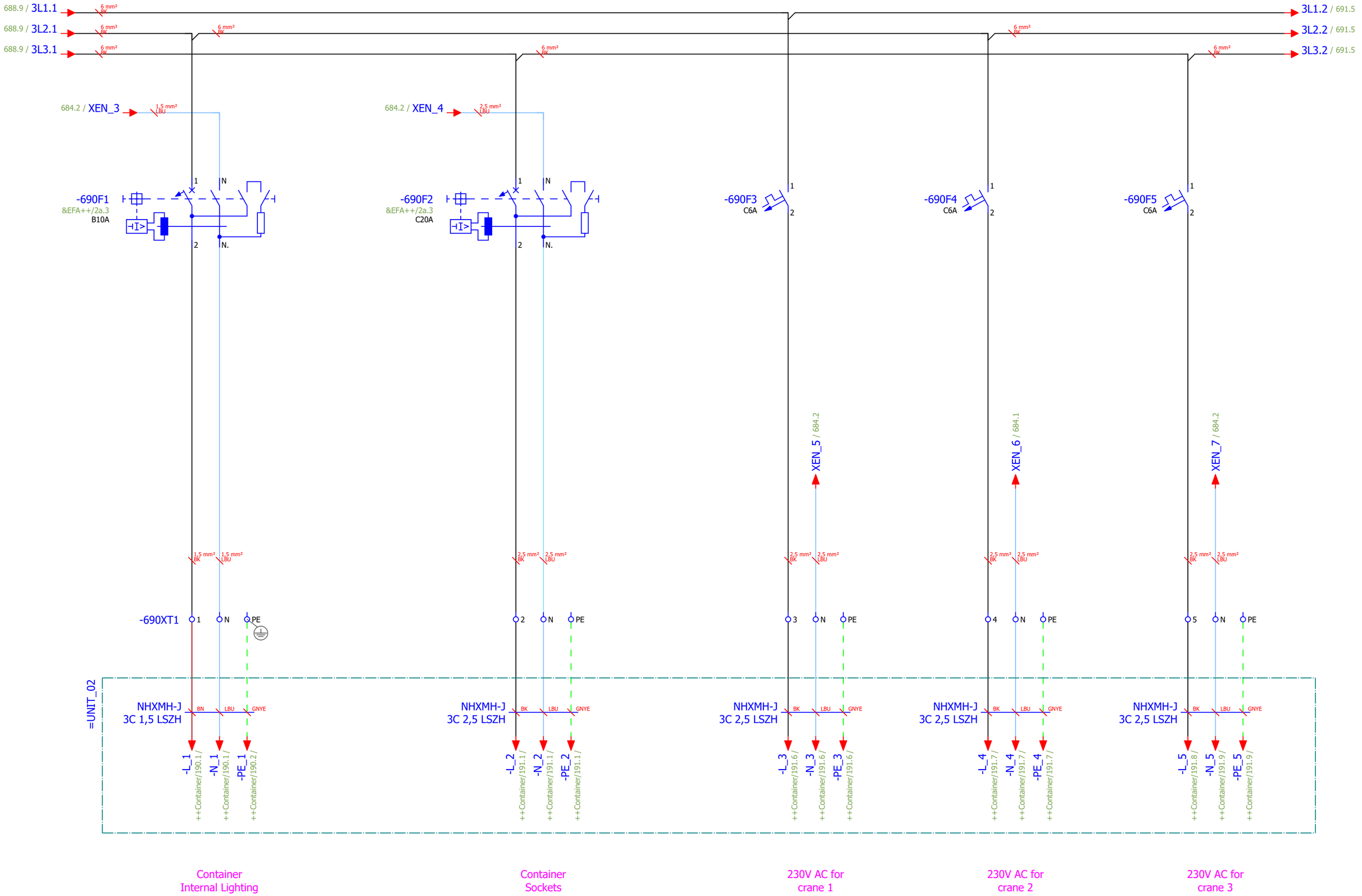
battery string 10
-293_2_1_1 ++Container/293.4
-293_2_1_2 ++Container/293.4
-293_2_1_3 ++Container/293.4

battery string 11
-293_3_1_1 ++Container/293.7
-293_3_1_2 ++Container/293.7
-293_3_1_3 ++Container/293.7

Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC

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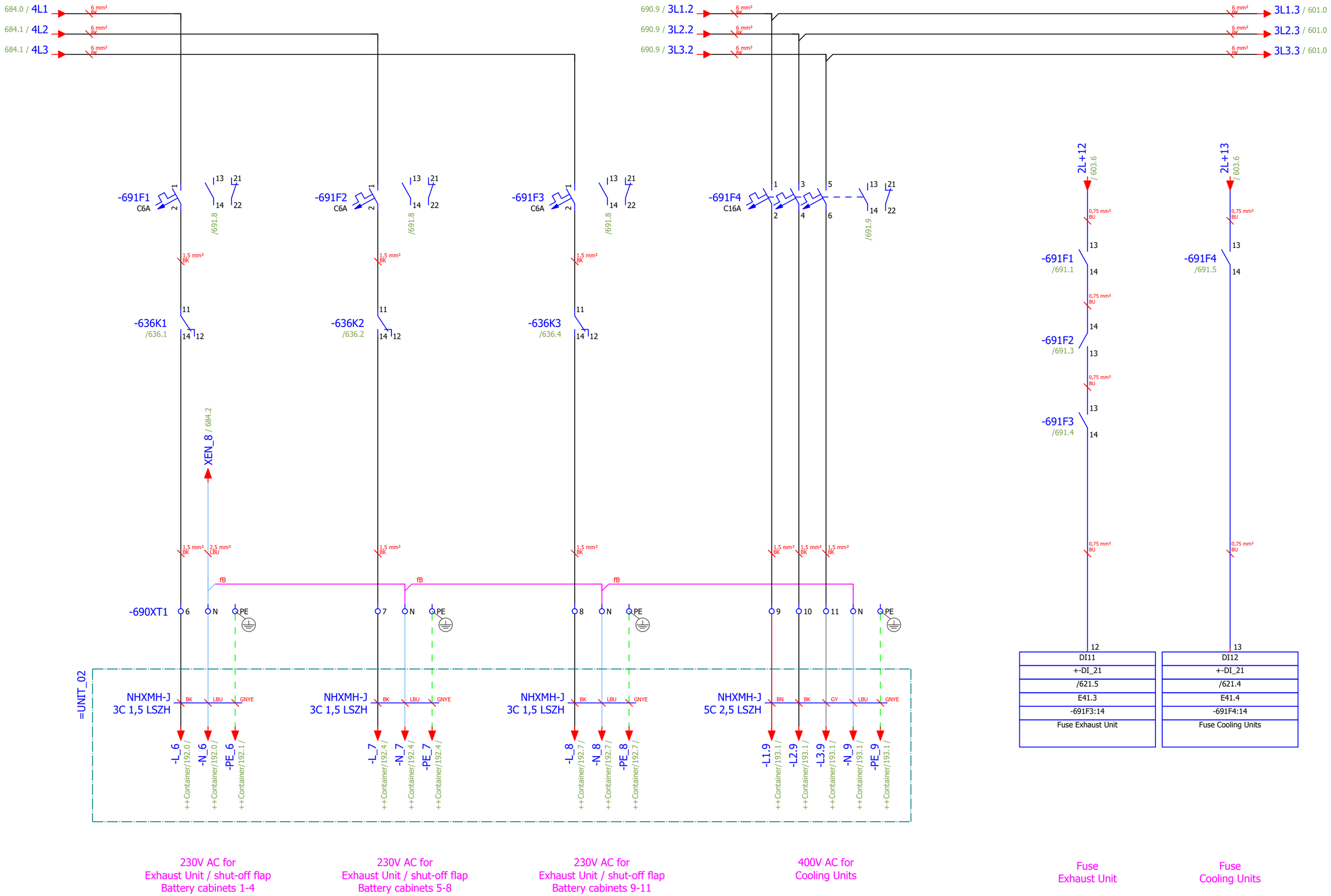
Editor	Freqcon_JD			Statron	FREQCON	AUXILIARY SUPPLY 400V / 230V AC DISTRIBUTION	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 688
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	CONTAINER COOLING / LIGHTNING	20240809_V0.7	= UNIT_02	Battery Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 690
Date								+		total: 482



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next page: &EPC++Container/1

Editor	Freqcon_JD			Statron	FREQCON	CONTAINER COOLING / LIGHTNING	20240809_V0.7	= UNIT_02	Battery Container 1	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 691
Date								+		total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-680U1 &EFS++ASC/680a.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	
-680U2 &EFS++ASC/680b.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	
-680U3 &EFS++ASC/680c.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	

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&EFS++ASC/691

next page:
++ASC/1

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-101Q1 &EFS/601.2	1	MOTOR PROTECTION S00, A-release 2.2...3.2 A, N-release 42 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1DA25	Siemens	501432	
-101T1 &EFS/601.2	1	Power supply QUINT-PS/3AC/24DC/20/CO, with protective coating	2320924	Phoenix Contact	501573	
-102G1 &EFS/602.2	1	Uninterruptible power supply QUINT-UPS/ 24DC/ 24DC/20	2320238	Phoenix Contact	501598	
-102G2 &EFS/602.6	1	Energy storage UPS-BAT/VRLA/24DC/12AH	2320322	Phoenix Contact	501229	
-103F1 &EFS/603.2	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	
-103F2 &EFS/603.5	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	
-369XT &EFS/669.5...&EFS/669.8;&EFS/670.5...&EFS/670.8	12	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-369XT &EFS/669.5;&EFS/669.7;&EFS/670.5;&EFS/670.7	4	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	
-369XT &EFS/669.5	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-611A1 &EFS/611.0	1	TREE 16 TX Metall 2GE 14 FE - Unmanaged Gigabit Switch - 16 Ports/	58174	Murrelektronik	10286	
-613T1 &EFS/613.1	1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464	
-613T1 &EFS/613.1	1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395	
-613U1 &EFS/613.3	1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791	
-613U2 &EFS/613.5	1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214	
-620A1 &EFS/620.1	1	SIMATIC ET 200SP, PROFINET Interface-Module, IM 155-6 PN ST, bundle of Server module + Busadapter	6ES7155-6AA01-0BN0	Siemens	501554	
-636K1 &EFS/636.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K1 &EFS/636.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-636K2 &EFS/636.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K2 &EFS/636.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-636K3 &EFS/636.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K3 &EFS/636.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-680K1 &EFS/680a.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-680K2 &EFS/680b.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-680K3 &EFS/680c.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-684F1 &EFS/684.5	1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070	
-684F1 &EFS/684.1	1	CIRCUIT BREAKER 400V, 10KA, 3-POLE, C, 32A	5SY4332-7	Siemens	505272	
-684F1 &EFS/684.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-687F1 &EFS/687.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F1 &EFS/687.1	1	PIN BUS BAR SHOCKHAZARD SAFETY, 16QMM 3 PHASE+HS	5ST3712	Siemens	10274	
-687F1 &EFS/687.1	2	End cap for pin busbars 2 - 3-phase	5ST3750	Siemens	503570	
-687F2 &EFS/687.3	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F3 &EFS/687.4	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F4 &EFS/687.5	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F5 &EFS/687.7	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F6 &EFS/687.8	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687XT1 &EFS/687.1;&EFS/687.3;;&EFS/687.5;&EFS/687.7;&EFS/687.8;&EFS/688.1;&EFS/688.3;;&EFS/688.5;&EFS/688.7	11	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-687XT1 &EFS/687.1	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-687XT1 &EFS/687.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-687XT1 &EFS/687.1;&EFS/687.2;&EFS/687.4;&EFS/687.5;&EFS/687.6...&EFS/687.8;&EFS/688.1;&EFS/688.3;&EFS/688.4;&EFS/688.5;&EFS/688.7	11	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	
-687XT1 &EFS/687.1	1	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	
-687XT1 &EFS/688.1	1	Plug-in bridge FBS 5-5	3030190	Phoenix Contact	500545	
-687XT1 &EFS/687.2...&EFS/687.4;&EFS/687.6;&EFS/687.7;&EFS/687.9;&EFS/688.2...&EFS/688.4;&EFS/688.6;&EFS/688.7	11	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-688F1 &EFS/688.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F2 &EFS/688.3	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F3 &EFS/688.4	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F4 &EFS/688.5	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F5 &EFS/688.7	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-690F1 &EFS/690.1	1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, B-char, In: 10 A, Un AC: 230 V	5SU1354-6KK10	Siemens	10440	
-690F2 &EFS/690.3	1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, C-char, In: 20 A, Un AC: 230 V	5SU1354-7KK20	Siemens	10441	
-690F3 &EFS/690.5	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690F4 &EFS/690.7	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690F5 &EFS/690.8	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	7	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	14	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-691F1 &EFS/691.1	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F1 &EFS/691.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-691F2 &EFS/691.3	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F2 &EFS/691.3	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-691F3 &EFS/691.4	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F3 &EFS/691.4	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-691F4 &EFS/691.5	1	CIRCUIT BREAKER 10KA 3POL C16	5SY4316-7	Siemens	503340	X
-691F4 &EFS/691.5	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-AI_21 &EFS/620.3	1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054	
-AI_21 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-AO_21 &EFS/620.4	1	AQ 4XU/I ST	6ES7135-6HD00-0BA1	Siemens	504291	
-AO_21 &EFS/620.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-DI_21 &EFS/620.3	1	SIMATIC ET 200SP DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788	
-DI_21 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-DO_21 &EFS/620.3	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	
-DO_21 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-X5.1 &EFS/680a.2...&EFS/680a.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.1 &EFS/680a.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X5.1 &EFS/680a.2	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-X5.1 &EFS/680a.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.1 &EFS/680a.2;&EFS/680a.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X5.2 &EFS/680b.2...&EFS/680b.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.2 &EFS/680b.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X5.2 &EFS/680b.2	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X5.2 &EFS/680b.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.2 &EFS/680b.2;&EFS/680b.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X5.3 &EFS/680c.2...&EFS/680c.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.3 &EFS/680c.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X5.3 &EFS/680c.2	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X5.3 &EFS/680c.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.3 &EFS/680c.2;&EFS/680c.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X6 &EFS/681.1;&EFS/681.3;&EFS/681.5	6	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X6 &EFS/681.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X6 &EFS/681.1	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X6 &EFS/681.1	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-XDC1 &EFS/603.2;&EFS/603.3	6	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-XDC1 &EFS/603.2;&EFS/603.3	2	Plug-in bridge FBS 3-5	3030174	Phoenix Contact	503103	
-XDC1 &EFS/603.2	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-XDC1 &EFS/603.2	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	
-XDC1 &EFS/603.4	2	Protective conductor double-level terminal block Push-in PTTB 2,5-PE	3210596	Phoenix Contact	501389	
-XDC2 &EFS/603.5...&EFS/603.7	7	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-XDC2 &EFS/603.5	1	Plug-in bridge FBS 4-5	3030187	Phoenix Contact	500801	
-XDC2 &EFS/603.5	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XDC2 &EFS/603.5	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	
-XDC2 &EFS/603.6	1	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	
-XDC2 &EFS/603.6	1	Plug-in bridge FBS 3-5	3030174	Phoenix Contact	503103	
-XES &EFS/684.0;&EFS/684.1	6	Feed-through terminal block Push-in PT 6	3211813	Phoenix Contact	501388	
-XES &EFS/684.0;&EFS/684.1	3	Plug-in bridge FBS 2-8	3030284	Phoenix Contact	502068	
-XES &EFS/684.0	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XES &EFS/684.0	1	End cover D-PT 6	3212044	Phoenix Contact	500503	
-XES &EFS/684.1;&EFS/684.2	5	Feed-through terminal block Push-in PT 6 BU	3211819	Phoenix Contact	500585	
-XES &EFS/684.1	1	Plug-in bridge FBS 5-8	3030310	Phoenix Contact	504375	
-XES &EFS/684.2;&EFS/684.3	3	Ground modular terminal block Push-in PT 6-PE	3211822	Phoenix Contact	500725	

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Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
3	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321

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Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	TREE 16 TX Metall 2GE 14 FE - Unmanaged Gigabit Switch - 16 Ports/	58174	Murrelektronik	10286
1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464
1	Uninterruptible power supply QUINT-UPS/ 24DC/ 24DC/20	2320238	Phoenix Contact	501598
1	Energy storage UPS-BAT/VRLA/24DC/12AH	2320322	Phoenix Contact	501229
1	Power supply QUINT-PS/3AC/24DC/20/CO, with protective coating	2320924	Phoenix Contact	501573
1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791
1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214
6	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726
3	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803
1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395
1	MOTOR PROTECTION S00, A-release 2.2...3.2 A, N-release 42 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1DA25	Siemens	501432
1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070
5	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737
1	PIN BUS BAR SHOCKHAZARD SAFETY, 16QMM 3 PHASE+HS	5ST3712	Siemens	10274
2	End cap for pin busbars 2 - 3-phase	5ST3750	Siemens	503570
1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, B-char, In: 10 A, Un AC: 230 V	5SU1354-6KK10	Siemens	10440
1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, C-char, In: 20 A, Un AC: 230 V	5SU1354-7KK20	Siemens	10441
2	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086

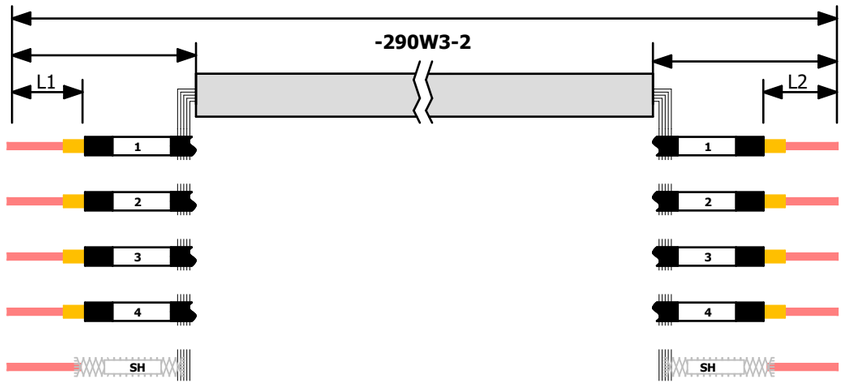
Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
6	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682
11	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569
1	CIRCUIT BREAKER 400V, 10KA, 3-POLE, C, 32A	5SY4332-7	Siemens	505272
1	SIMATIC ET 200SP DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788
1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397
1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054
1	AQ 4XU/I ST	6ES7135-6HD00-0BA1	Siemens	504291
1	SIMATIC ET 200SP, PROFINET Interface-Module, IM 155-6 PN ST, bundle of Server module + Busadapter	6ES7155-6AA01-0BN0	Siemens	501554
4	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786

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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

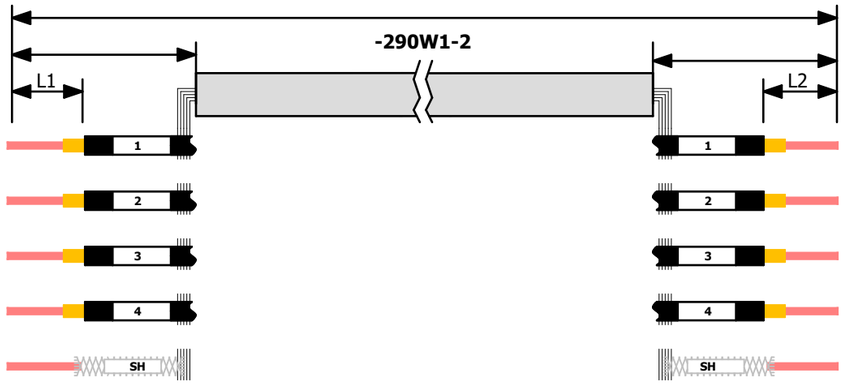


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	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:1	
			++ASC-369XT:4	

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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

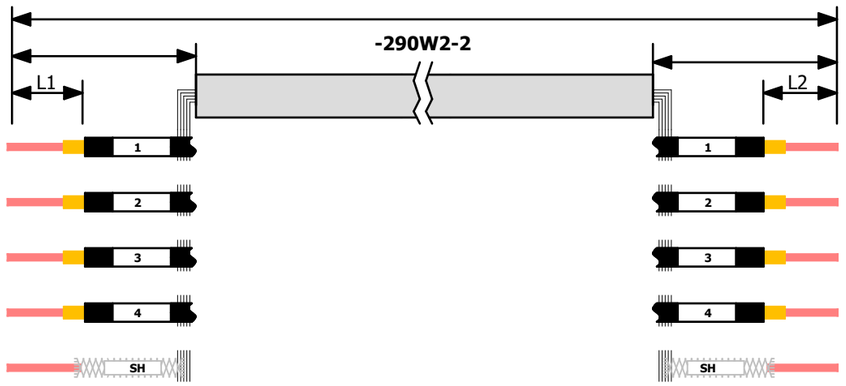


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:4	

Cable name =UNIT_02++Container+-290W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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	-570XT:2			
	-570XT:3			
	-570XT:4			

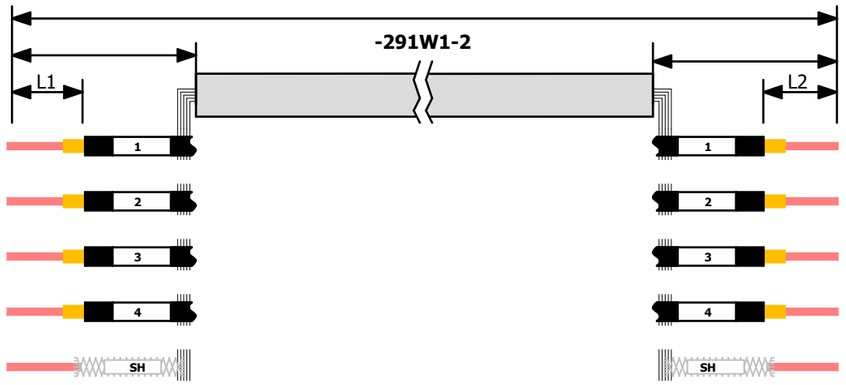
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			++ASC-369XT:4	

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Date	02.07.2024							& EMB Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container page: 1
Date								+ total: 482

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-291W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

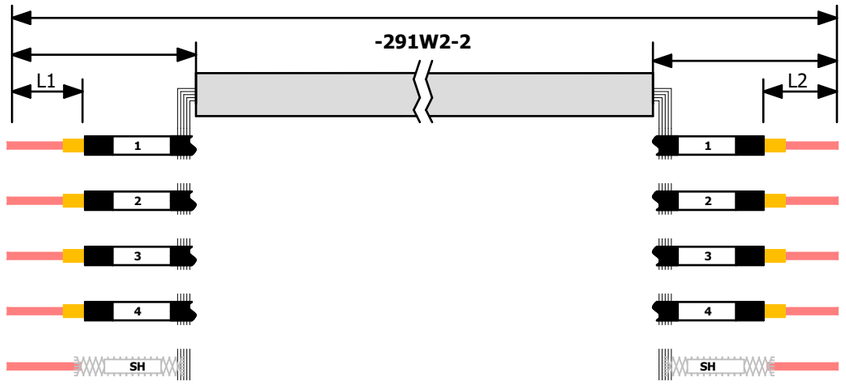


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

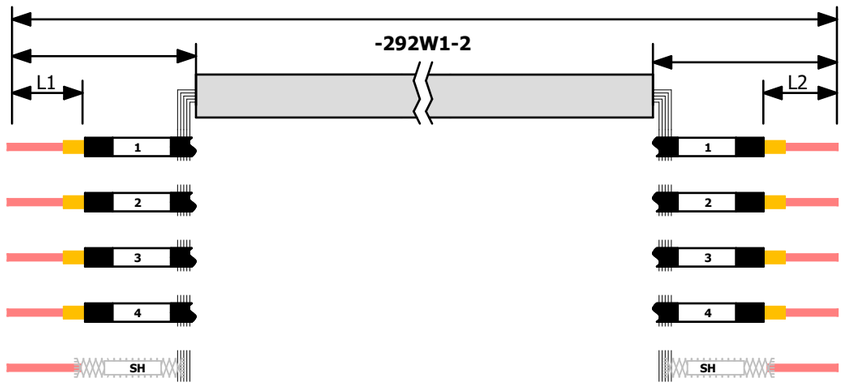


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:2	
			++ASC-369XT:5	

Cable name =UNIT_02++Container+-292W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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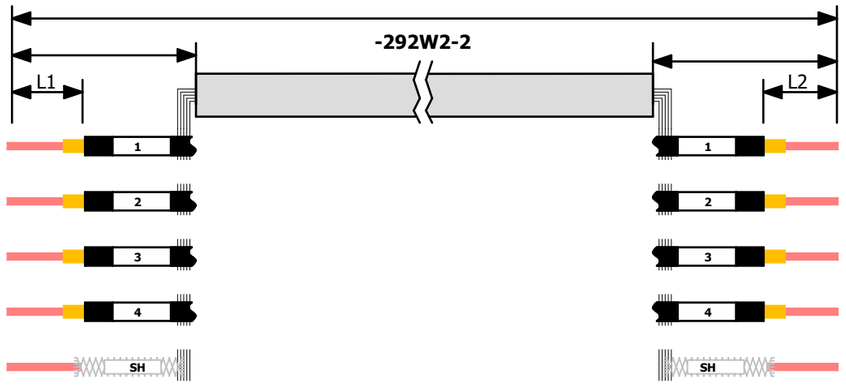
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-292W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

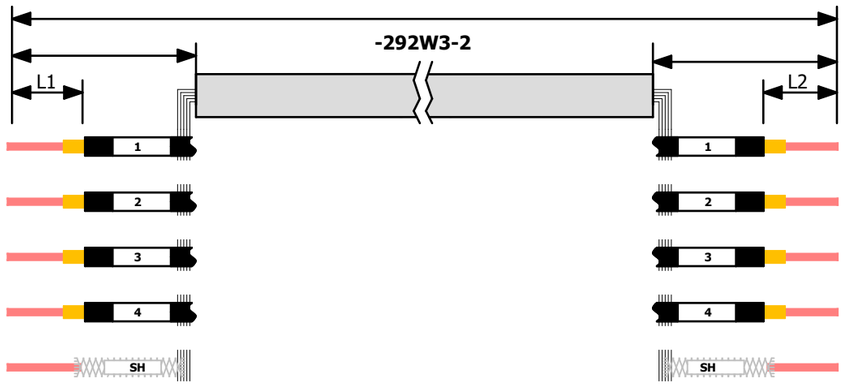


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_02++Container+-292W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

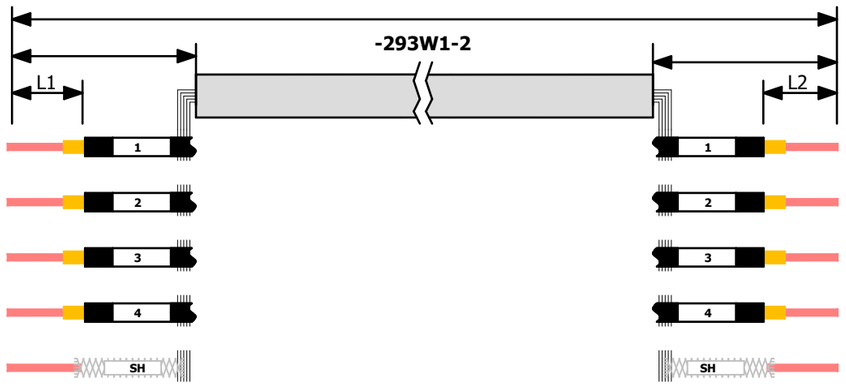


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_02++Container+-293W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

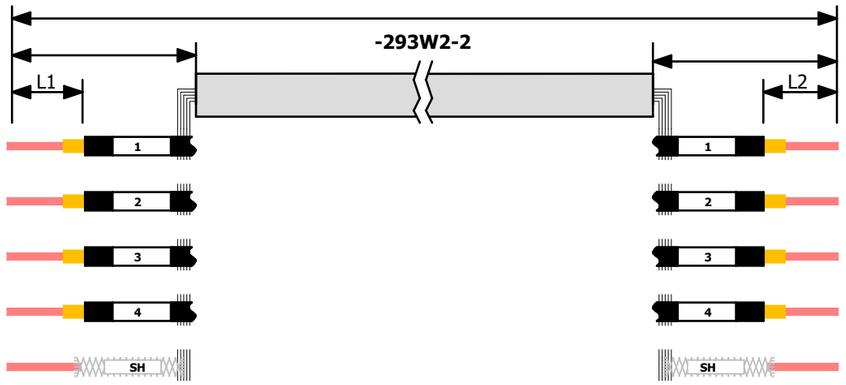
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-293W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

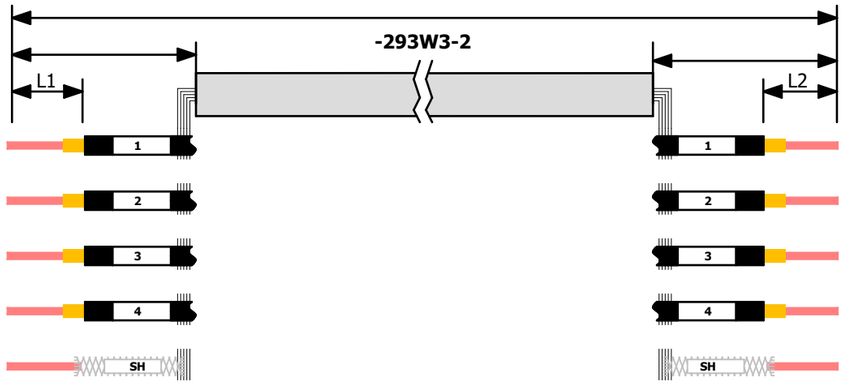


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_02++Container+-293W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:8	
			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

Cable name =UNIT_02++Container+-290W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:1	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-290W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:2	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-290W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

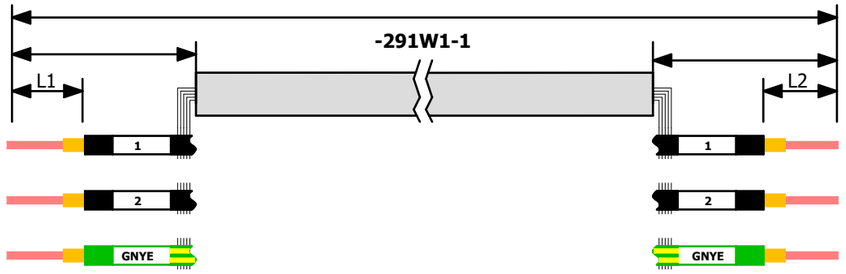


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:3	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-291W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

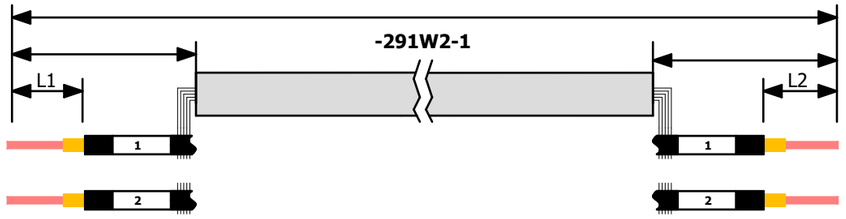


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:4	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			

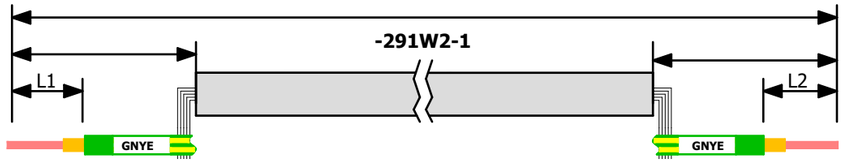
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:5	
			++ASC-687XT1:N	

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Cable name =UNIT_02++Container+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

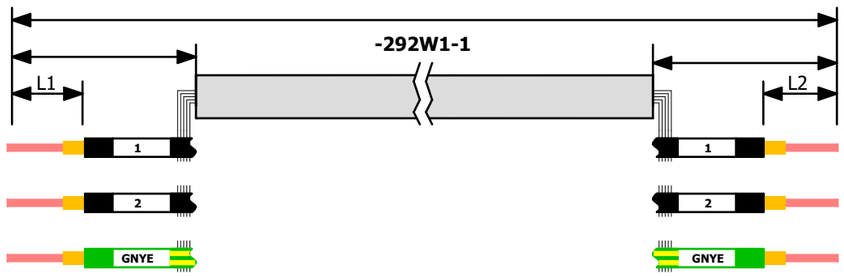


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

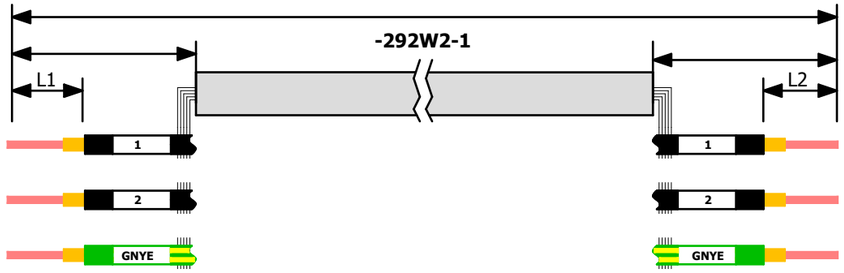


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:6	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-292W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

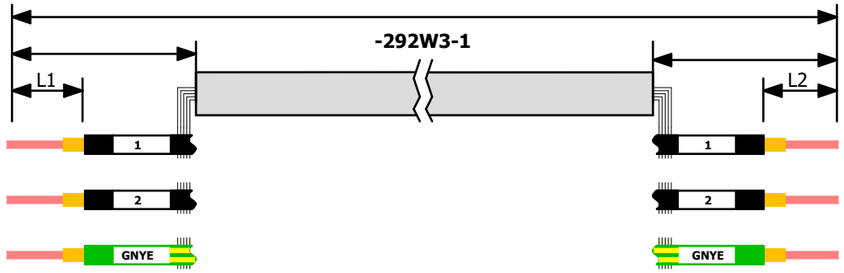


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:7	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-292W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

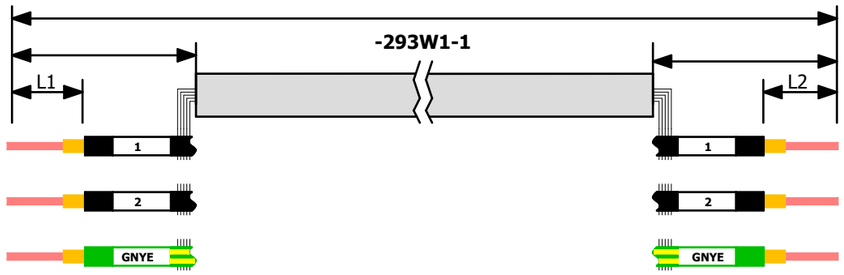
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:8	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-293W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:9	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-293W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

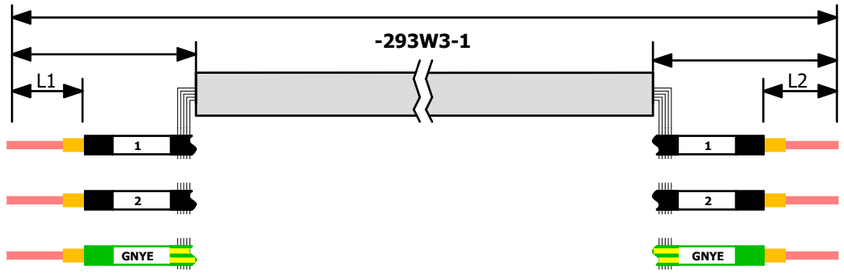


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:10	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-293W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

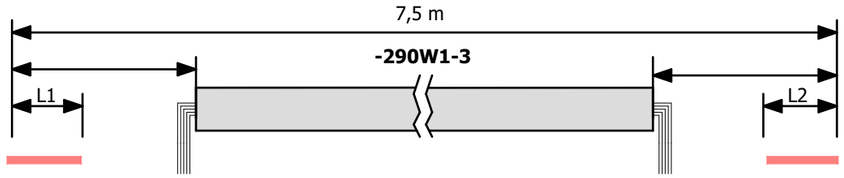


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:11	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_02++Container+-290W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

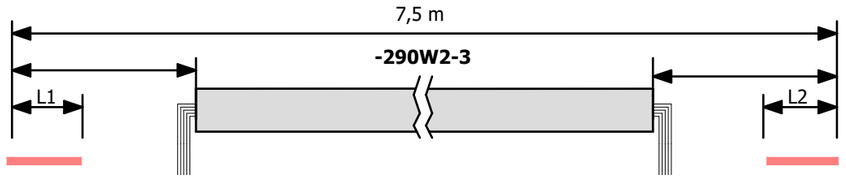
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X1:1-16	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_02	Battery Container 1
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 7
Date								+	total: 482

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++Container+-290W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

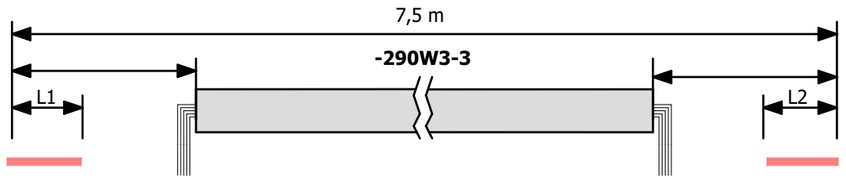


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X2:1-16	

Cable name =UNIT_02++Container+-290W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

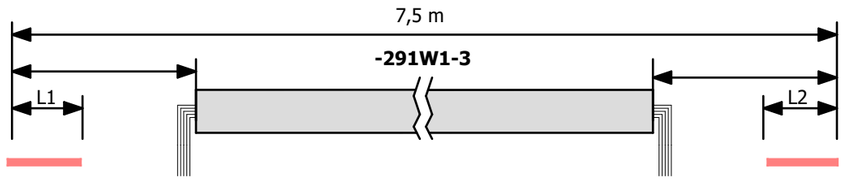


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X3:1-16	

Cable name =UNIT_02++Container+-291W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

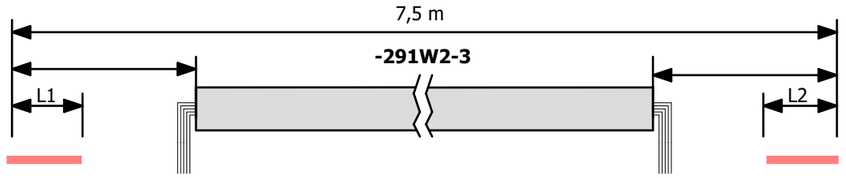


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X4:1-16	

Cable name =UNIT_02++Container+-291W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

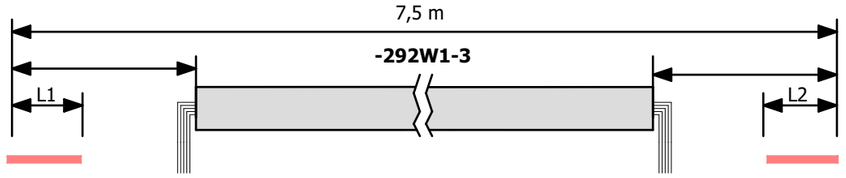


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X5:1-16	

Cable name =UNIT_02++Container+-292W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



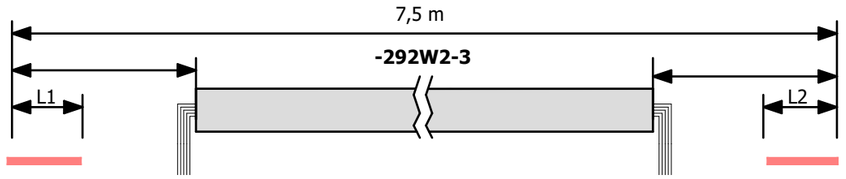
Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X6:1-16	

FRQ_Kabelplan_04_gro8_de_en

Cable name =UNIT_02++Container+-292W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

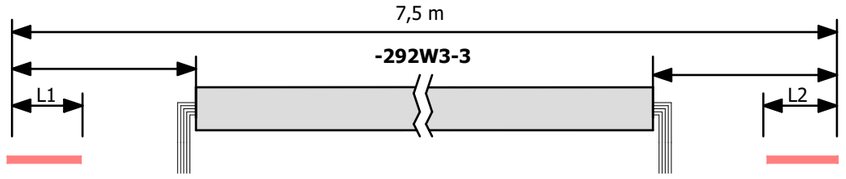
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X7:1-16	

Cable name =UNIT_02++Container+-292W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

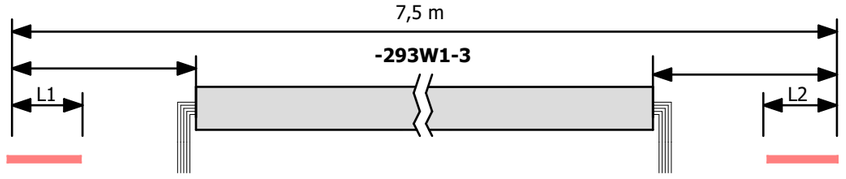
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X8:1-16	

Cable name =UNIT_02++Container+-293W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

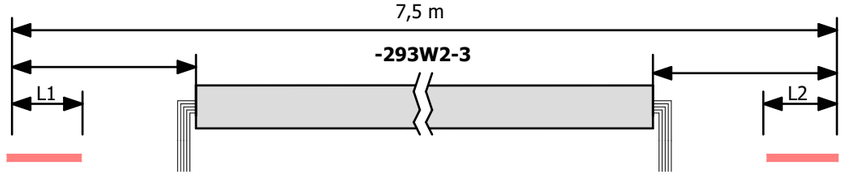
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X9:1-16	

Cable name =UNIT_02++Container+-293W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

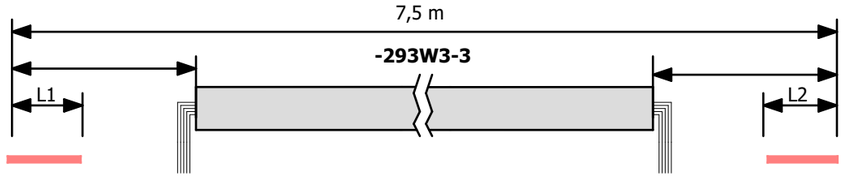
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X2:1-16	

Cable name =UNIT_02++Container+-293W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



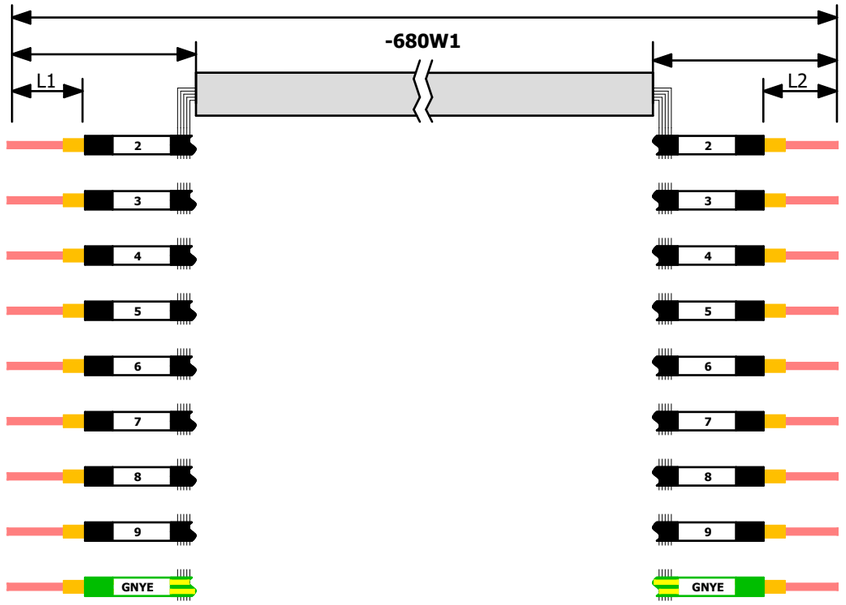
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X3:1-16	

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next page: ++ASC/1

FRQ_Kabelplan_04_gro8_de_en

Cable name =UNIT_02++ASC+-680W1
Cable type F-CY-JZ 10G0,75 mm²
Free conductors

Cable parts
Order number

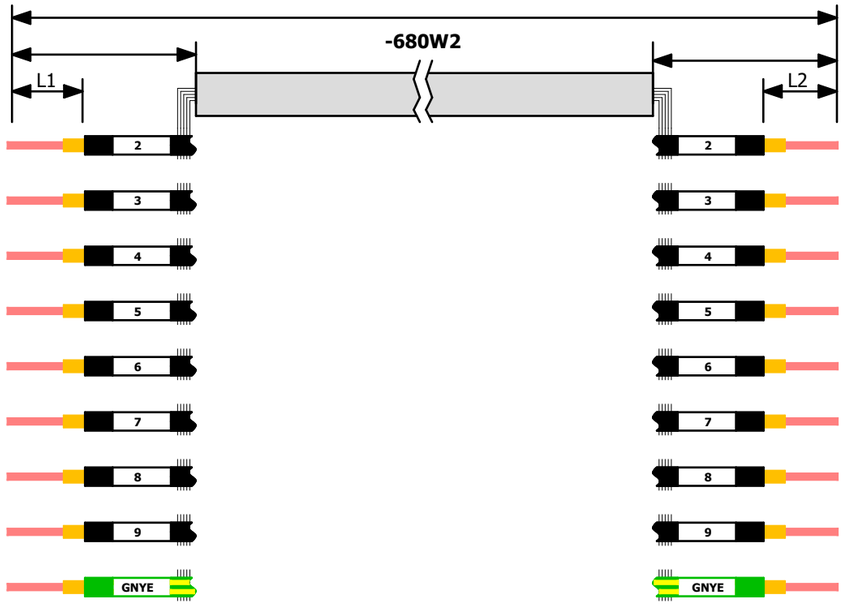


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.1:2	gas concentration BAT 1-4		
	-X5.1:3	=		
	-X5.1:5	=		
	-X5.1:6	=		
	-X5.1:7	=		
	-X5.1:8	=		
	-X5.1:9	=		
	-X5.1:10	=		
	-X5.1:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U1-X1:2	
		=	++Container-680U1-X1:4	
		=	++Container-680U1-X2:1	
		=	++Container-680U1-X2:2	
		=	++Container-680U1-X2:4	
		=	++Container-680U1-X2:5	
		=	++Container-680U1-X2:7	
		=	++Container-680U1-X2:8	
		=	++Container-680U1-X1:5	

Cable name =UNIT_02++ASC+-680W2
Cable type F-CY-JZ 10G0,75 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.2:2	gas concentration BAT 5-8		
	-X5.2:3	=		
	-X5.2:5	=		
	-X5.2:6	=		
	-X5.2:7	=		
	-X5.2:8	=		
	-X5.2:9	=		
	-X5.2:10	=		
	-X5.2:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U2-X1:2	
		=	++Container-680U2-X1:4	
		=	++Container-680U2-X2:1	
		=	++Container-680U2-X2:2	
		=	++Container-680U2-X2:4	
		=	++Container-680U2-X2:5	
		=	++Container-680U2-X2:7	
		=	++Container-680U2-X2:8	
		=	++Container-680U2-X1:5	

FRQ_Kabelplan_04_gro8_de_en

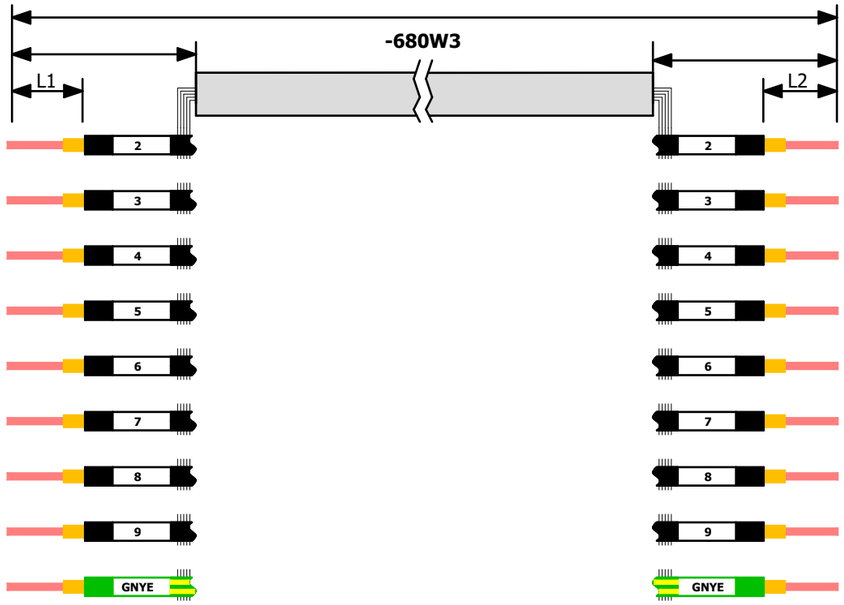
previous page:
++Container/9

next page:
2

Cable name =UNIT_02++ASC+-680W3
Cable type F-CY-JZ 10G0,75 mm²
Free conductors 9

Cable parts
Order number

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.3:2	gas concentration BAT 9-11		
	-X5.3:3	=		
	-X5.3:5	=		
	-X5.3:6	=		
	-X5.3:7	=		
	-X5.3:8	=		
	-X5.3:9	=		
	-X5.3:10	=		
	-X5.3:PE	=		

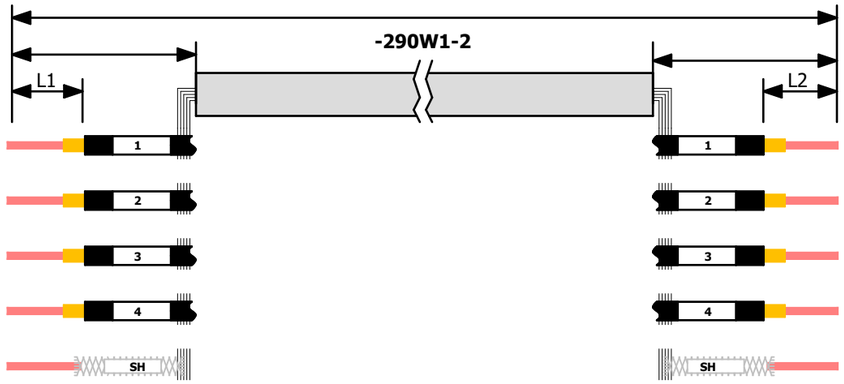


L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U3-X1:2	
		=	++Container-680U3-X1:4	
		=	++Container-680U3-X2:1	
		=	++Container-680U3-X2:2	
		=	++Container-680U3-X2:4	
		=	++Container-680U3-X2:5	
		=	++Container-680U3-X2:7	
		=	++Container-680U3-X2:8	
		=	++Container-680U3-X1:5	

Cable name =UNIT_02++ASC+-290W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

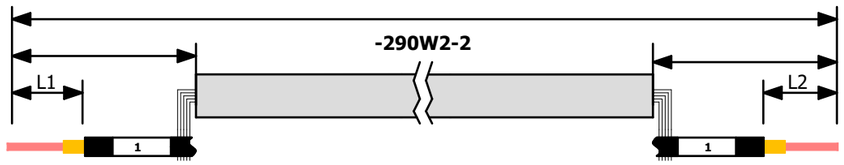


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-290W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



L2 [mm]	wire end handling	Function text target	Target	Mounting location:

previous page: 1
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FRQ_Kabelplan_04_gro8_de_en

Cable name =UNIT_02++ASC+-290W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

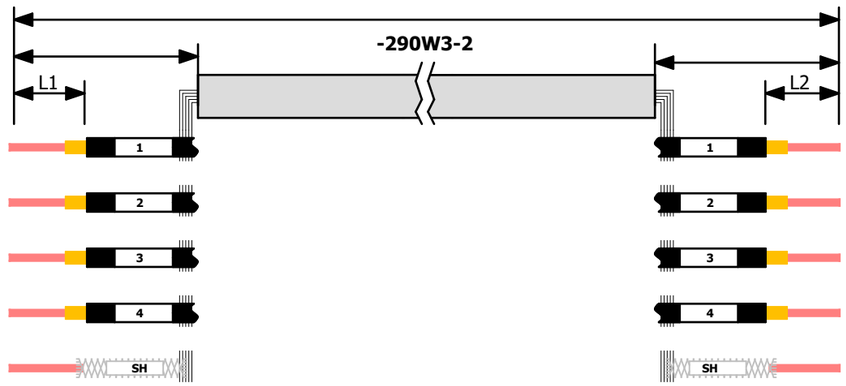


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-290W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

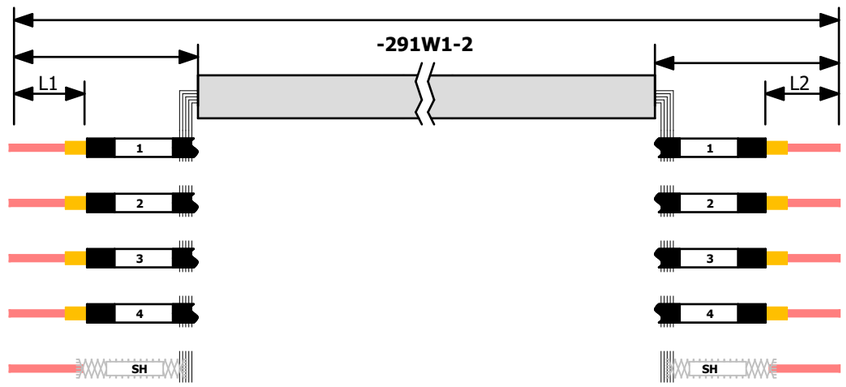


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-291W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



L2 [mm]	wire end handling	Function text target	Target	Mounting location:

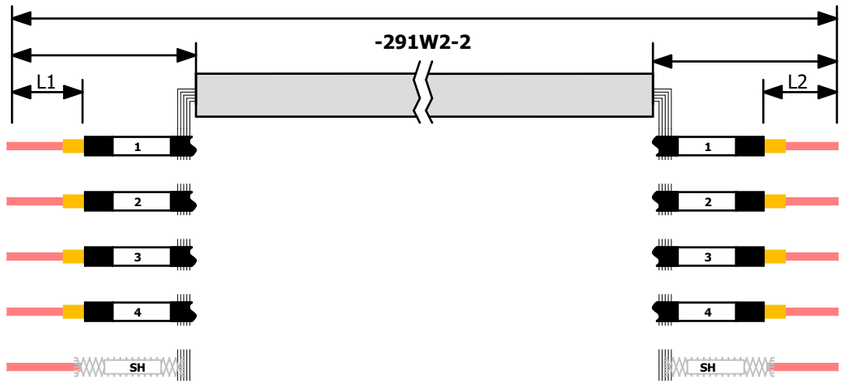
previous page: 2

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-291W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

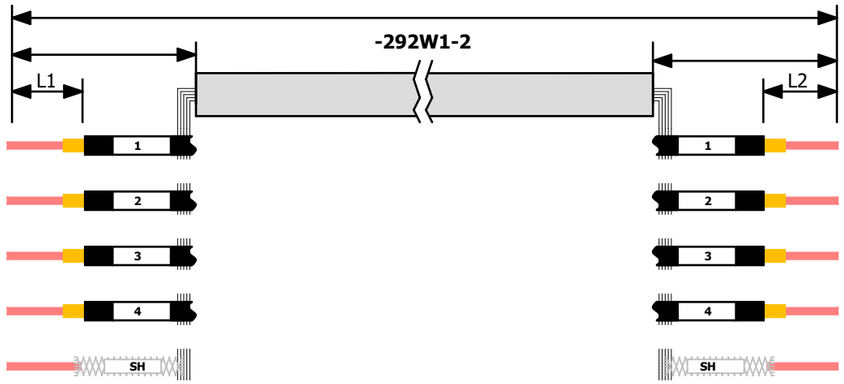


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-292W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

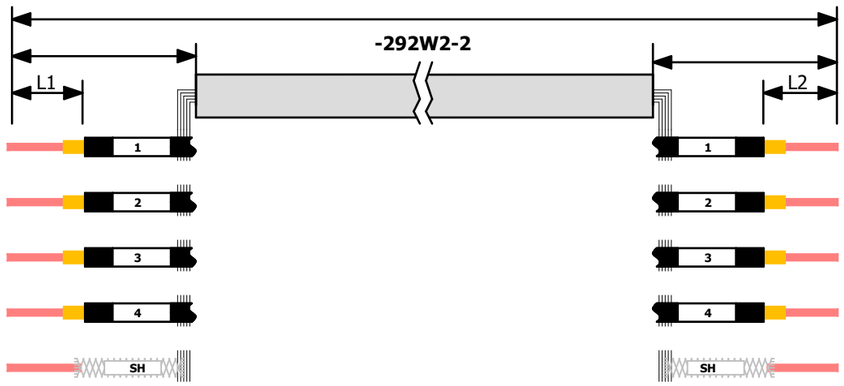


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-292W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

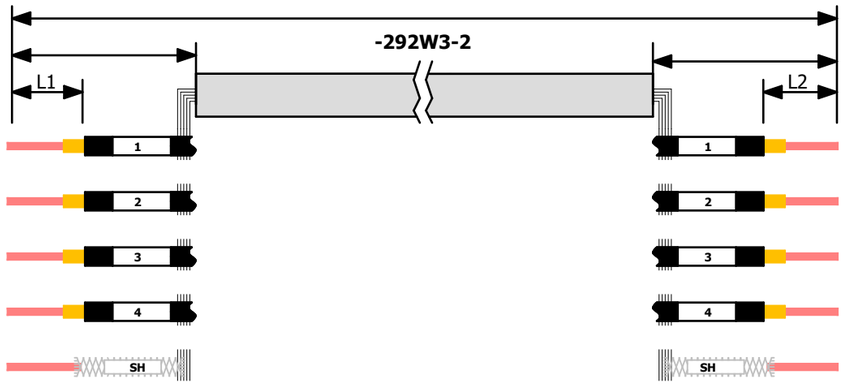
L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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next page: 5

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-292W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

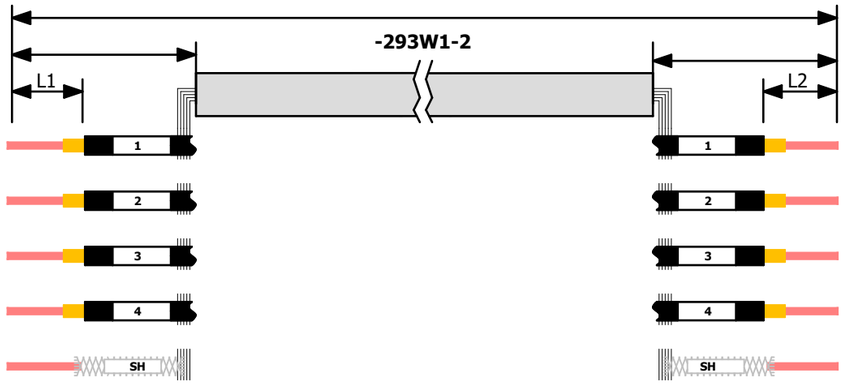


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-293W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

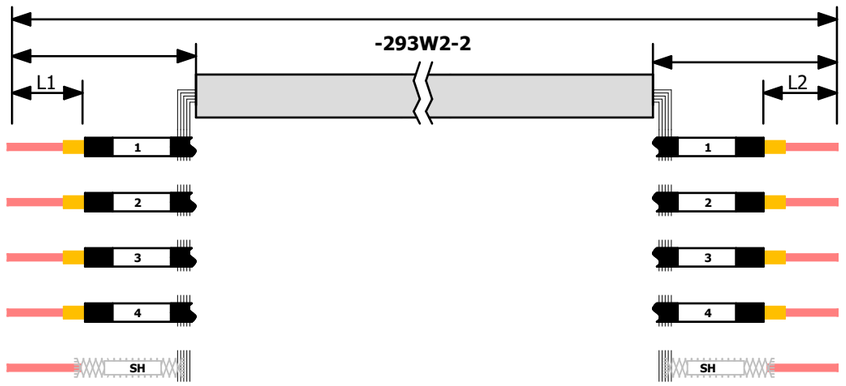


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-293W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

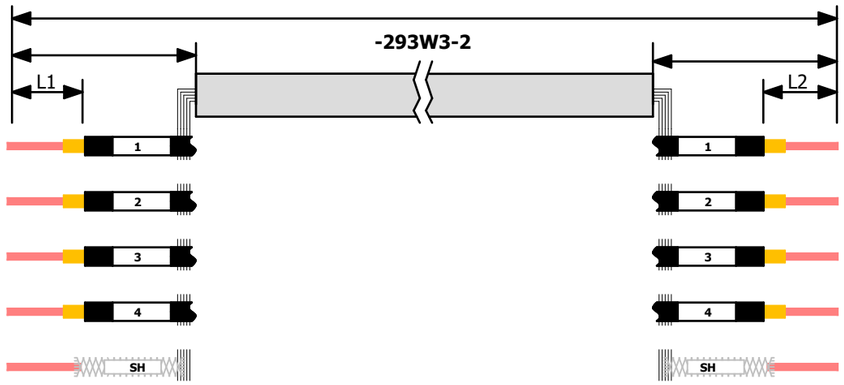
previous page: 4
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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-293W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

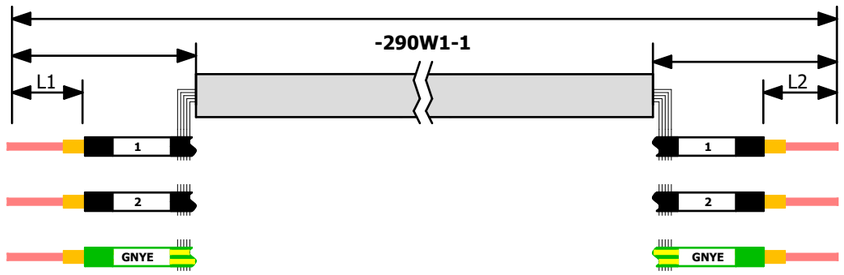


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-290W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

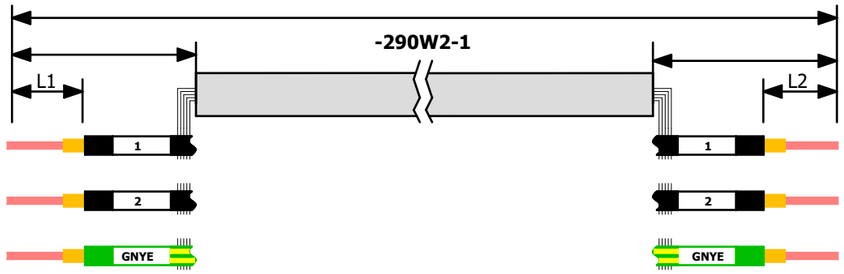


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-290W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-290W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

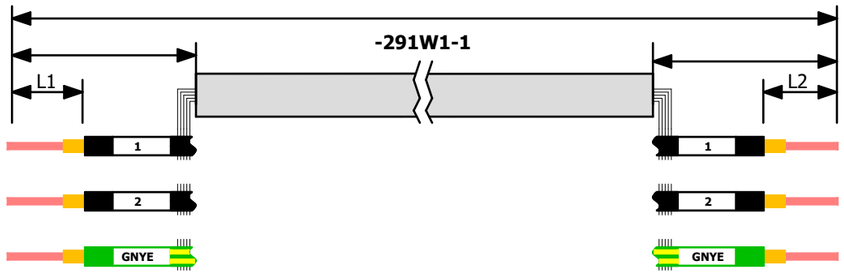


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-291W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

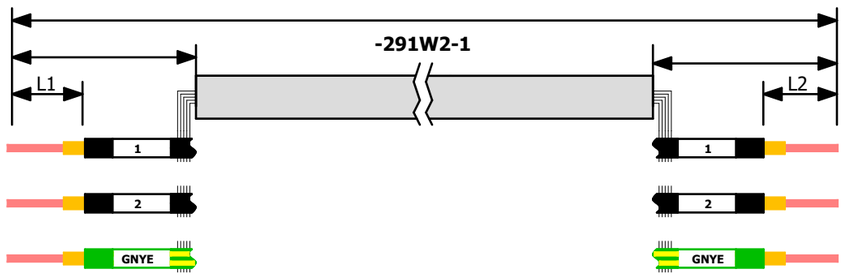


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

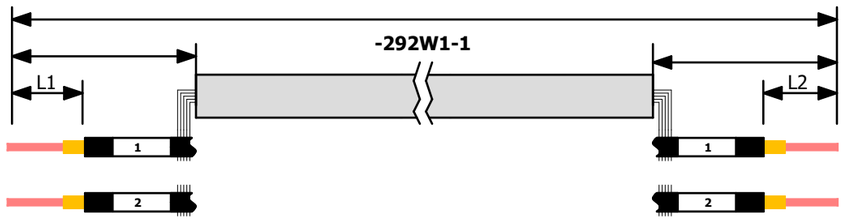


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

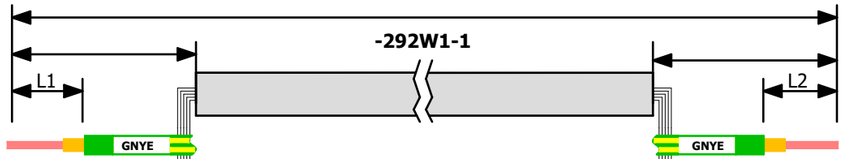
previous page: 6

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

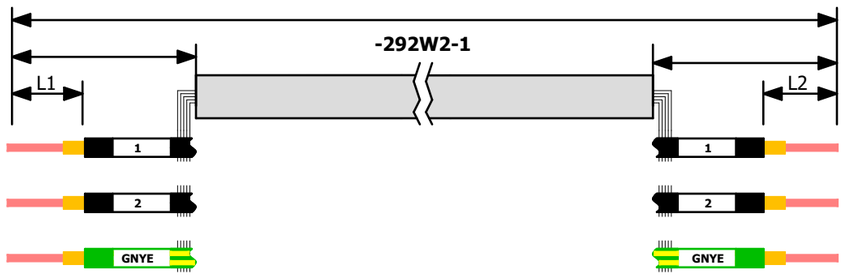


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-292W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

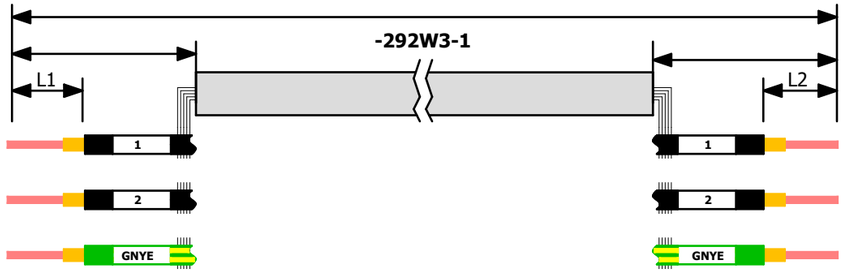


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-292W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

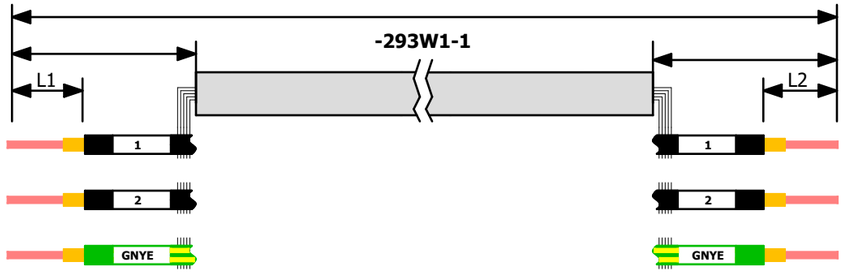


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-293W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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next page: 9

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-293W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-293W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

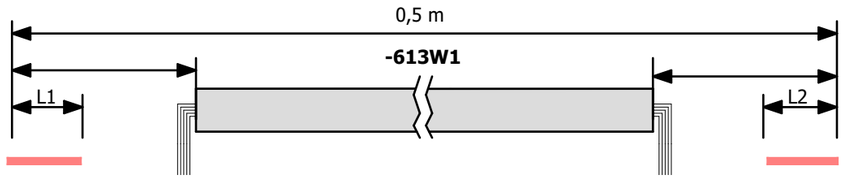


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_02++ASC+-613W1
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN

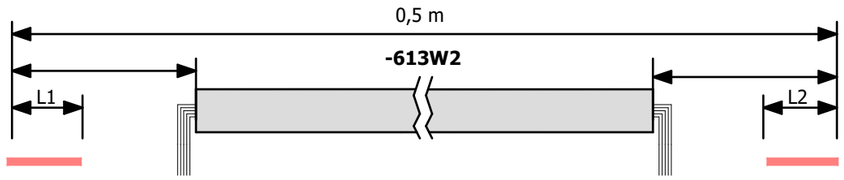


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-613T1:7			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-613U1:OUT	

Cable name =UNIT_02++ASC+-613W2
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-613U1:IN			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-613U2:8	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_02	Battery Container 1	
Date	02.07.2024							& EMB	Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 9
Date								+		total: 482

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_02++ASC+-620W3
Cable type RJ45 / CAT6 4x2x0,25 mm²
Free conductors

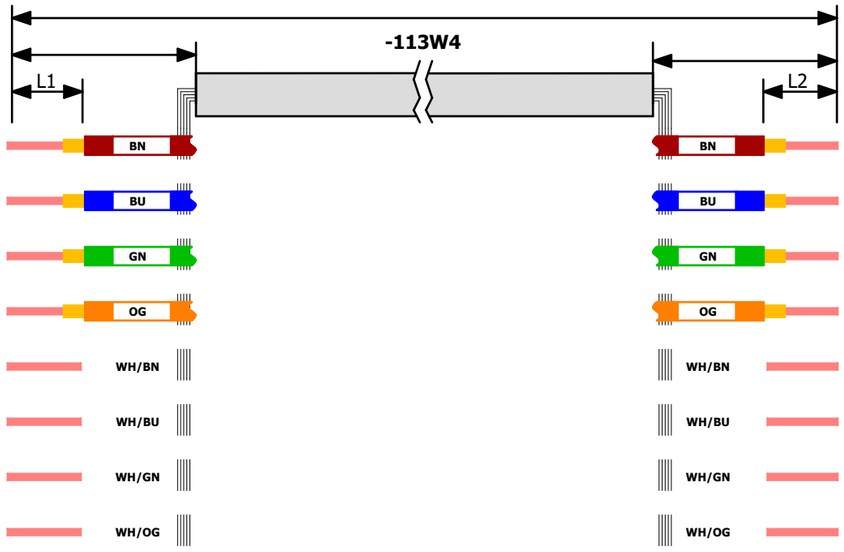
Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
	-620A1:-X1:P2							=UNIT_03-620A1:-X1:P1	

Cable name =UNIT_02++ASC+-113W4
Cable type S/FTP 4x2xAWG 23/1 PVC/PVC 4x2x23 AWG
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:8							-613U2:8	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:4							-613U2:4	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:2							-613U2:2	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:6							-613U2:6	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:7							-613U2:7	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:5							-613U2:5	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:1							-613U2:1	
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U2:3							-613U2:3	

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FRQ_Kabelplan_04_groß_de_en

Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-X5.1		1	PE	2	0	12	=UNIT_02&EMZ++ASC/2000
-X5.2		1	PE	2	0	12	=UNIT_02&EMZ++ASC/2001
-X5.3		1	PE	2	0	12	=UNIT_02&EMZ++ASC/2002
-X6		1	6	0	0	6	=UNIT_02&EMZ++ASC/2003
-XDC1		1	PE	2	0	14	=UNIT_02&EMZ++ASC/2004
-XDC2		1	7	0	0	14	=UNIT_02&EMZ++ASC/2005
-XE				0	0	1	=UNIT_02&EMZ++ASC/2006
-XES		1	6	3	5	14	=UNIT_02&EMZ++ASC/2007
-369XT		1	12	0	0	24	=UNIT_02&EMZ++ASC/2008
-687XT1		1	PE	11	11	33	=UNIT_02&EMZ++ASC/2020
-690XT1		1	PE	40	35	115	=UNIT_02&EMZ++ASC/2031

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&EMB/10

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Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_02++ASC+-X5.1

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name	Page / column
										-680W1	
										F-CY-JZ	
gas concentration BAT 1-4			-XDC2	1	1	,	++Container-680U1-X1	1			&EFS/680a.2
=			-XDC2	5	2	,	++Container-680U1-X1	2		2	&EFS/680a.2
=			-AI_21	13	3	,	++Container-680U1-X1	4		3	&EFS/680a.2
=					4	,					&EFS/680a.2
=					5	,	++Container-680U1-X2	1		4	&EFS/680a.3
=					6	,	++Container-680U1-X2	2		5	&EFS/680a.3
=			-680K1	A1	7	,	++Container-680U1-X2	4		6	&EFS/680a.4
=			-XDC2	2	8	,	++Container-680U1-X2	5		7	&EFS/680a.4
=					9	,	++Container-680U1-X2	7		8	&EFS/680a.5
=					10	,	++Container-680U1-X2	8		9	&EFS/680a.5
=					PE	,	++Container-680U1-X1	5		GNYE	&EFS/680a.2
=					PE	,	-480W1				&EFS/680a.6

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-X5.1	20240809_V0.7	= UNIT_02	Battery Container 1
Date	02.07.2024					& EMZ	Terminals
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date						+	

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-X5.2						Cable name	-680W2										Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-JZ											
gas concentration BAT 5-8					-XDC2	2	1	,	++Container-680U2-X1	1													&EFS/680b.2
=					-XDC2	6	2	,	++Container-680U2-X1	2		2											&EFS/680b.2
=					-AI_21	14	3	,	++Container-680U2-X1	4		3											&EFS/680b.2
=							4	,															&EFS/680b.2
=							5	,	++Container-680U2-X2	1		4											&EFS/680b.3
=							6	,	++Container-680U2-X2	2		5											&EFS/680b.3
=					-680K2	A1	7	,	++Container-680U2-X2	4		6											&EFS/680b.4
=					-XDC2	2	8	,	++Container-680U2-X2	5		7											&EFS/680b.4
=							9	,	++Container-680U2-X2	7		8											&EFS/680b.5
=							10	,	++Container-680U2-X2	8		9											&EFS/680b.5
=							PE	,	++Container-680U2-X1	5		GNYE											&EFS/680b.2
=							PE	,	-480W1														&EFS/680b.6

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2002

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-X5.2	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-X5.3 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Cable name -680W3	F-CY-1Z	Page / column
gas concentration BAT 9-11					-XDC2	3	1	,	++Container-680U3-X1	1				&EFS/680c.2
=					-XDC2	7	2	,	++Container-680U3-X1	2		2		&EFS/680c.2
=					-AI_21	15	3	,	++Container-680U3-X1	4		3		&EFS/680c.2
=							4	,						&EFS/680c.2
=							5	,	++Container-680U3-X2	1		4		&EFS/680c.3
=							6	,	++Container-680U3-X2	2		5		&EFS/680c.3
=					-680K3	A1	7	,	++Container-680U3-X2	4		6		&EFS/680c.4
=					-XDC2	3	8	,	++Container-680U3-X2	5		7		&EFS/680c.4
=							9	,	++Container-680U3-X2	7		8		&EFS/680c.5
=							10	,	++Container-680U3-X2	8		9		&EFS/680c.5
=							PE	,	++Container-680U3-X1	5		GNYE		&EFS/680c.2
=							PE	,	-480W1					&EFS/680c.6

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2003

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-X5.3	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_02	Battery Container 1
&	EMZ	Terminals
++	ASC	auxillary cabinet
+		

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-X6						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
Extract Fan C/W Fire Damper 1						GND	1	,	-AO_21	1													&EFS/681.1
=						+10V	2	,	-AO_21	5													&EFS/681.1
Extract Fan C/W Fire Damper 2						GND	3	,	-AO_21	2													&EFS/681.3
=						+10V	4	,	-AO_21	6													&EFS/681.3
Extract Fan C/W Fire Damper 3						GND	5	,	-AO_21	3													&EFS/681.5
=						+10V	6	,	-AO_21	7													&EFS/681.5

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Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-XDC1						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
FUSE 24V DC CONTROL VOLTAGE					-101T1	13	1		-103F1	2													&EFS/603.2
					-101Q1	13																	
					-611A1	1																	
FUSE 24V DC CONTROL VOLTAGE					-620A1	-X80:1	2																&EFS/603.2
					-DI_21	L+																	
					-DO_21	L+																	
FUSE 24V DC CONTROL VOLTAGE					-684F1	11	3		-103F1	13													&EFS/603.2
FUSE 24V DC CONTROL VOLTAGE					-611A1	2	4		-102G1	OUTPUT DC 24 V:-													&EFS/603.3
FUSE 24V DC CONTROL VOLTAGE					-620A1	-X80:2	5																&EFS/603.3
					-DI_21	M																	
					-DO_21	M																	
FUSE 24V DC CONTROL VOLTAGE					-636K1	A2	6		-XDC2	5													&EFS/603.3
FUSE 24V DC CONTROL VOLTAGE					-101T1	-"	PE																&EFS/603.4
					-101T1	PE																	
FUSE 24V DC CONTROL VOLTAGE							PE																&EFS/603.4

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Editor	Freqcon_JD			Statron		Klemmenplan =UNIT_02++ASC+-XDC1	20240809_V0.7	= UNIT_02	Battery Container 1	
Date	02.07.2024							& EMZ	Terminals	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 2004
Date								+		total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-XDC2						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
FUSE 24V DC CONTROL VOLTAGE					-AI_21	L+	1		-103F2	2													&EFS/603.5
					-AO_21	L+																	
					-X5.1	1																	
FUSE 24V DC CONTROL VOLTAGE					-X5.1	8	2		-X5.2	8													&EFS/603.5
					-680K1	11																	
					-X5.2	1																	
FUSE 24V DC CONTROL VOLTAGE					-680K2	11	3		-680K3	11													&EFS/603.5
					-X5.3	1																	
					-X5.3	8																	
FUSE 24V DC CONTROL VOLTAGE					-691F1	13	4																&EFS/603.6
					-691F4	13																	
					-691F4	13																	
FUSE 24V DC CONTROL VOLTAGE					-AI_21	M	5		-XDC1	6													&EFS/603.6
					-AO_21	M																	
					-X5.1	2																	
FUSE 24V DC CONTROL VOLTAGE					-680K1	A2	6																&EFS/603.6
					-X5.2	2																	
FUSE 24V DC CONTROL VOLTAGE					-680K2	A2	7																&EFS/603.7
					-X5.3	2																	
					-680K3	A2																	

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-XDC2	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2005
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_02++ASC+-XE

Function text				Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type												Page / column
																							&EFA++/2a.6

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

Klemmenplan =UNIT_02++ASC+-XE

20240809_V0.7

10354_23A2007

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2006
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_02++ASC+-XES

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
				1		-684F1	2		&EFS/684.0
UPS Bat-Con 1 3-phase 400V AC				N		-687XT1	N		&EFS/684.1
=		-690XT1	N	N		-687XT1	N		&EFS/684.1
=		-690XT1	N	N		-690F1	N		&EFS/684.2
=		-690XT1	N	N		-690F2	N		&EFS/684.2
=				N		-690XT1	N		&EFS/684.2
=				PE			PE		&EFS/684.2
=		++Container-278W1	GND	PE			PE		&EFS/684.3
=				PE		-684F1	PE		&EFS/684.3
				2		-691F1	1		&EFS/684.0
UPS Bat-Con 1 3-phase 400V AC				3		-684F1	4		&EFS/684.1
=				4		-691F2	1		&EFS/684.1
=				5		-684F1	6		&EFS/684.1
=				6		-691F3	1		&EFS/684.1

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_02++ASC+-XES
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by			10354_23A2007
Date			

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2007
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	1					&EFS/669.5
		3			++Container-570XT	3						
	3				++Container-570XT	3						

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_02++ASC+-369XT

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	2		++Container-570XT	3		3	&EFS/669.5
		3			++Container-570XT	3							
	3				++Container-570XT	3							

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

Klemmenplan =UNIT_02++ASC+-369XT

20240809_V0.7

10354_23A2007

=	UNIT_02	Battery Container 1		
&	EMZ	Terminals		
++	ASC	auxillary cabinet	page:	2009
+			total:	482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	3		++Container-570XT	3		3	&EFS/669.6
		3			++Container-570XT	3							
	3				++Container-570XT	3							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_02++ASC+-369XT

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	4					&EFS/669.7
		4			++Container-570XT	4						
	4				++Container-570XT	4						

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_02++ASC+-369XT
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by		FREQCON	10354_23A2007
Date			

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2011
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W1-2 F-CY-0Z	++Container-291W2-2 F-CY-0Z	++Container-291W1-2 F-CY-0Z	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-0Z	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	5		++Container-570XT	4		4	&EFS/669.8
		4			++Container-570XT	4							
	4				++Container-570XT	4							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	6		++Container-570XT	4		4	&EFS/669.8
		4			++Container-570XT	4							
	4				++Container-570XT	4							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-2 F-CY-0Z	++Container-290W2-2 F-CY-0Z	++Container-290W1-2 F-CY-0Z	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	7					&EFS/670.5
		1			++Container-570XT	1						
	1				++Container-570XT	1						

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	8		++Container-570XT	1		1	&EFS/670.5
		1			++Container-570XT	1							
	1				++Container-570XT	1							

Strip =UNIT_02++ASC+-369XT

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-0Z	++Container-292W3-2 F-CY-0Z	++Container-292W2-2 F-CY-0Z	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-0Z	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	9		++Container-570XT	1		1	&EFS/670.6
		1			++Container-570XT	1							
	1				++Container-570XT	1							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_02++ASC+-369XT

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	10					&EFS/670.7
		2			++Container-570XT	2						
	2				++Container-570XT	2						

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_02++ASC+-369XT
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by		FREQCON	20240809_V0.7
Date			10354_23A2007

= UNIT_02 Battery Container 1
& EMZ Terminals
++ ASC auxillary cabinet
+
page: 2017
total: 482

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_02++ASC+-369XT

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	11		++Container-570XT	2		2	&EFS/670.8
		2			++Container-570XT	2							
	2				++Container-570XT	2							

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

FREQCON

Klemmenplan =UNIT_02++ASC+-369XT

20240809_V0.7

10354_23A2007

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2018
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_02++ASC+-369XT Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	12		++Container-570XT	2		2	&EFS/670.8
		2			++Container-570XT	2							
	2				++Container-570XT	2							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-369XT	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-1 JZ-500	++Container-290W2-1 JZ-500	++Container-290W1-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	1	,	-687F1	2		&EFS/687.1
=		1			++Container-XE	1	2	,	-687F2	2		&EFS/687.3
=	1				++Container-XE	1	3	,	-687F3	2		&EFS/687.4

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W1-1 JZ-500	++Container-291W2-1 JZ-500	++Container-291W1-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	4	,	-687F4	2		&EFS/687.5
=		1			++Container-XE	1	5	,	-687F5	2		&EFS/687.7
=	1				++Container-XE	1	6	,	-687F6	2		&EFS/687.8

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02	Battery Container 1
Date	02.07.2024							& EMZ	Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-1 JZ-500	++Container-292W3-1 JZ-500	++Container-292W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	7	,	-688F1	2		&EFS/688.1
=		1			++Container-XE	1	8	,	-688F2	2		&EFS/688.3
=	1				++Container-XE	1	9	,	-688F3	2		&EFS/688.4

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W1-1 JZ-500	++Container-293W3-1 JZ-500	++Container-293W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	10	,	-688F4	2		&EFS/688.5
=		1			++Container-XE	1	11	,	-688F5	2		&EFS/688.7
=	2				++Container-XE	N	N	⌐	-XES	N		&EFS/687.1

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-291W1-1 JZ-500	++Container-290W3-1 JZ-500	++Container-290W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/687.3
=		2			++Container-XE	N	N					&EFS/687.4
=	2				++Container-XE	N	N					&EFS/687.6

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	02.07.2024					& EMZ Terminals	
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 2024
Date						+	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W2-1 JZ-500	++Container-292W1-1 JZ-500	++Container-291W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/687.7
=		2			++Container-XE	N	N					&EFS/687.8
=	2				++Container-XE	N	N		-XES	N		&EFS/688.1

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	02.07.2024					& EMZ Terminals	
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 2025
Date						+	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W2-1 JZ-500	++Container-293W1-1 JZ-500	++Container-292W3-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/688.3
=		2			++Container-XE	N	N					&EFS/688.4
=	2				++Container-XE	N	N					&EFS/688.6

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W2-1 JZ-500	++Container-290W1-1 JZ-500	++Container-293W3-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N	⌟				&EFS/688.7
=		GNYE			++Container-XE	PE	PE	,				&EFS/687.2
=	GNYE				++Container-XE	PE	PE	,				&EFS/687.3

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Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02 Battery Container 1	
Date	02.07.2024					& EMZ Terminals	
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 2027
Date						+	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-291W2-1 JZ-500	++Container-291W1-1 JZ-500	++Container-290W3-1 JZ-500	Cable name / Cable type	Strip =UNIT_02++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE	,				&EFS/687.4
=		GNYE			++Container-XE	PE	PE	,				&EFS/687.6
=	GNYE				++Container-XE	PE	PE	,				&EFS/687.7

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_02++ASC+-687XT1	20240809_V0.7	= UNIT_02	Battery Container 1
Date	02.07.2024							& EMZ	Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_02++ASC+-687XT1

Function text	++Container-292W3-1 JZ-500	++Container-292W2-1 JZ-500	++Container-292W1-1 JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE					&EFS/687.9
=		GNYE			++Container-XE	PE	PE					&EFS/688.2
=	GNYE				++Container-XE	PE	PE					&EFS/688.3

Editor	Freqcon_JD	
Date	02.07.2024	
Proved by		
Date		

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

Klemmenplan =UNIT_02++ASC+-687XT1

20240809_V0.7

10354_23A2007

=	UNIT_02	Battery Container 1
&	EMZ	Terminals
++	ASC	auxillary cabinet
+		

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W3-1	++Container-293W2-1	++Container-293W1-1	Cable name	Strip =UNIT_02++ASC+-687XT1						Cable name												Page / column
	1Z-500	1Z-500	1Z-500	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE	,															&EFS/688.4
=		GNYE			++Container-XE	PE	PE	,															&EFS/688.6
=	GNYE				++Container-XE	PE	PE	,															&EFS/688.7

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Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_02	Battery Container 1	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2030
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-690XT1						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
Container Internal Lighting						L	1	,	-690F1	2													&EFS/690.1
=						1	2	,	-690F2	2													&EFS/690.3
Container Sockets						1	3	,	-690F3	2													&EFS/690.5
230V AC for crane 2						1	4	,	-690F4	2													&EFS/690.7
230V AC for crane 3						1	5	,	-690F5	2													&EFS/690.8
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230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4						L	6	,	-636K1	14													&EFS/691.1
						L																	
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230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8						L	7	,	-636K2	14													&EFS/691.3
						L																	
								,															
								,															

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Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_02++ASC+-690XT1

Function text	Cable name	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Cable type	Page / column
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11				L	8		-636K3	14			&EFS/691.4
				L							
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11					9		-691F4	2			&EFS/691.5

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_02++ASC+-690XT1						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
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400V AC for Cooling Units							10	,	-691F4	4													&EFS/691.6
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Container Sockets						2	N	,	-690F2	N.													&EFS/690.4
230V AC for crane 1						2	N	,	-XES	N													&EFS/690.6
230V AC for crane 2						2	N	,	-XES	N													&EFS/690.7
230V AC for crane 3						2	N	,	-XES	N													&EFS/690.8
								,															
Container Sockets						PE	PE	,															&EFS/690.4
230V AC for crane 1						PE	PE	,															&EFS/690.6

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Terminal diagram

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Strip
=UNIT_02++ASC+-690XT1

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
230V AC for crane 2			PE	PE					&EFS/690.7
230V AC for crane 3			PE	PE					&EFS/690.8
Container Internal Lighting			N	N		-690F1	N.		&EFS/690.1
=			GND	PE					&EFS/690.2
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4			N	N		-XES	N		&EFS/691.1
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4			GND	PE					&EFS/691.2
			GND						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8			N	N					&EFS/691.3
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8			GND	PE					&EFS/691.3
			GND						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11			N	N					&EFS/691.4
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11			GND	PE					&EFS/691.4
			GND						
400V AC for Cooling Units				N					&EFS/691.6
=				PE					&EFS/691.6

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Customer:	Statron	
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Type:	BESS MSC-1000-620-8	
Product	BATTERY CONTAINER 2	
Circuit diagram No:	10354_23A2007	20240809_V0.7

Producer (company):	Freqcon GmbH	53412 ASC 53409
Project:	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Type:	BESS MSC-1000-620-8	
Project manager:	Freqcon_CP	

created on:	17.09.2019		
edited on:	09.08.2024	edited by: Freqcon_DG	total pages: 482

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	2015	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2016	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2017	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2018	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2019	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2020	Klemmenplan =UNIT_03++ASC+-369XT	02.07.2024	Freqcon_JD
	2021	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2022	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2023	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2024	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2025	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2026	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2027	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2028	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD

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FREQCON_INHALT_04_de_en

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&EMZ ++ASC		Terminals auxillary cabinet		
	2029	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2030	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2031	Klemmenplan =UNIT_03++ASC+-687XT1	02.07.2024	Freqcon_JD
	2032	Klemmenplan =UNIT_03++ASC+-690XT1	02.07.2024	Freqcon_JD
	2033	Klemmenplan =UNIT_03++ASC+-690XT1	02.07.2024	Freqcon_JD
	2034	Klemmenplan =UNIT_03++ASC+-690XT1	02.07.2024	Freqcon_JD
	2035	Klemmenplan =UNIT_03++ASC+-690XT1	02.07.2024	Freqcon_JD

SPECIFICATION

TERMINAL STRIP

-XE1	MAIN POWER SUPPLY 600V AC
-XE2	DC POWER SUPPLY 1000V DC
-XE	MAIN POWER SUPPLY 400V AC
-X1	MAIN POWER 400V/230V AC
-X2	LIGHT CABINET 230V AC
-X3	CONTROL VOLTAGE 24V DC
-14X1	CONTROL VOLTAGE 24V DC (TO DC CONTACTORS)
-X5	LOW-VOLTAGE SIGNALS
-XDC0	24V DC POWER SUPPLY
-XDC1-4	CONTROL VOLTAGE 24V DC (UPS)
-XT	TRANSFER TERMINAL BLOCK 24V DC / 230V AC

WIRING COLOR

L1 / L2 / L3	=	BLACK
N	=	LIGHT BLUE (IEC) / GREY (UL)
PE	=	YELLOW-GREEN
EXTERNAL VOLTAGE	=	ORANGE
CONTROL VOLTAGE 24 V DC	=	DARK BLUE
ANALOG SIGNALS	=	WHITE

PLACE

+CTRL	=	Control cabinet
+CON	=	Converter cabinet
+IND	=	Inductor cabinet
+CIR	=	Circuit breaker cabinet
+COSY	=	Cooling System
+FAN	=	External fan

previous page: &EAB/6

next page: 6a

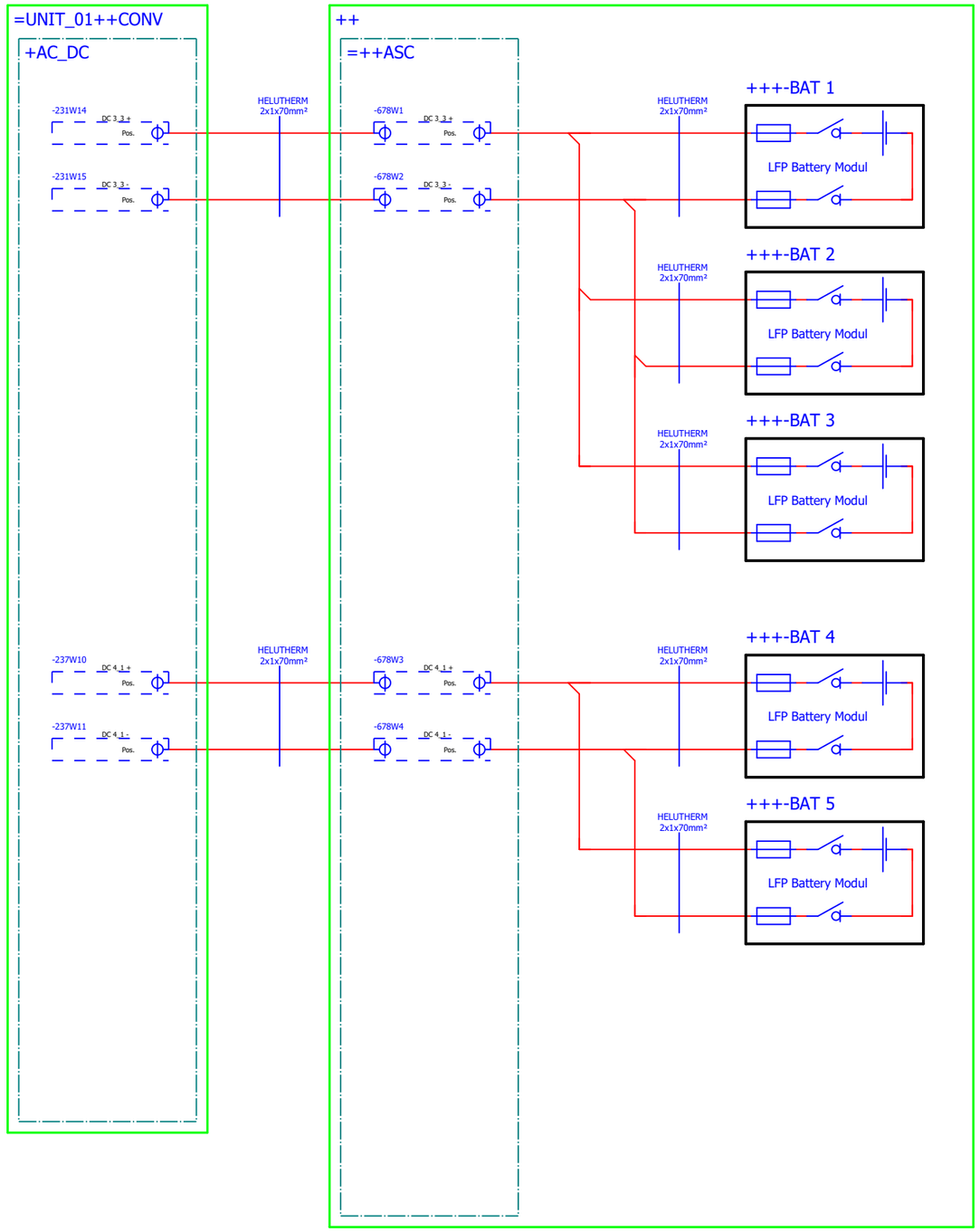
SPECIFICATION of grounding

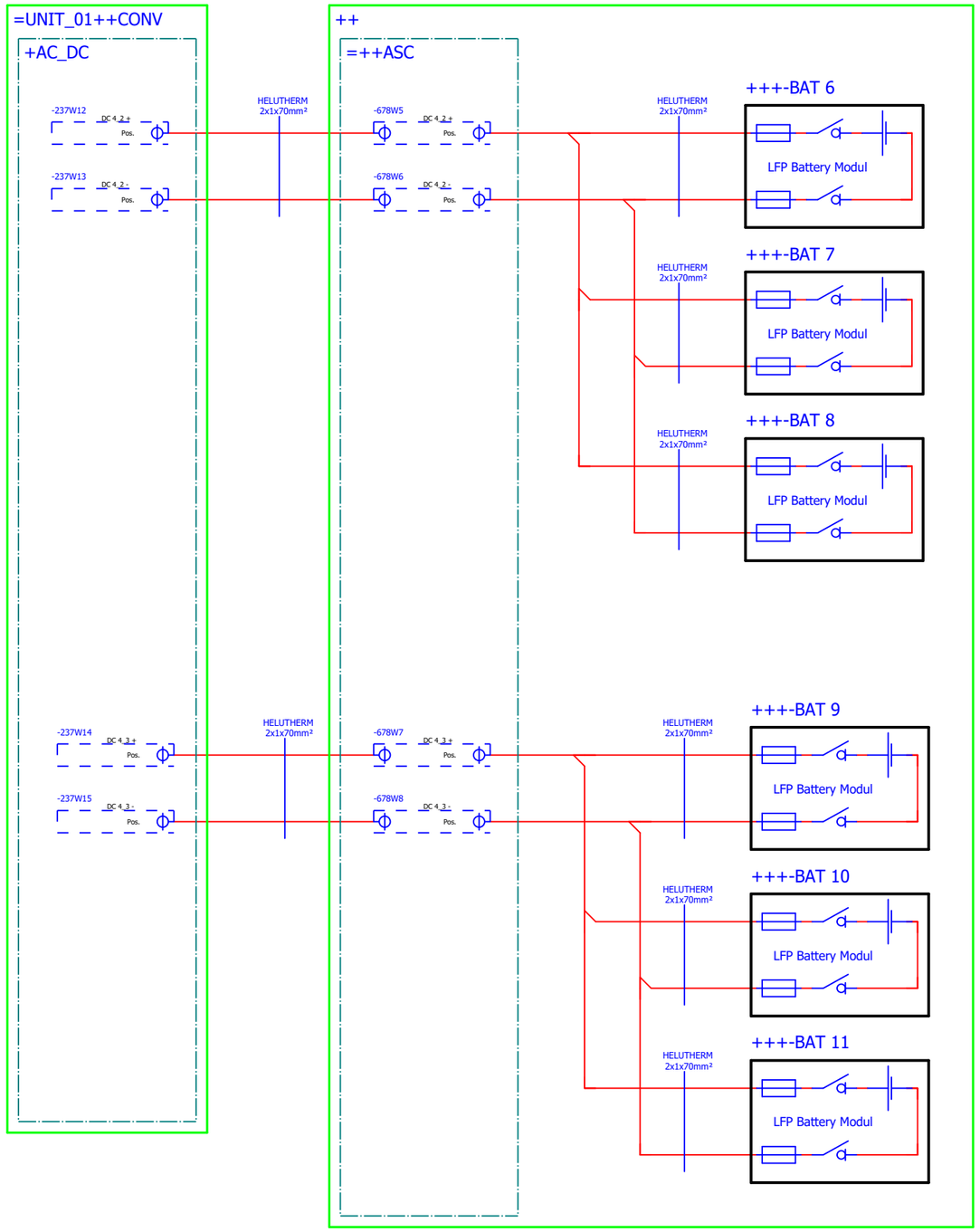
	from frame to			
1	**roof & side walls & doors**	**EVD_1**	**Flachband**	**2x25 mm²**
2	**frame**	**EVD_2**	**Flachband**	**2x25 mm²**
3	**base**	**EVD_3**	**Flachband**	**2x25 mm²**
4	**Mounting plate & partitions**	**EVD_4**	**H07-V-K**	**2x25 mm²**
5	**inductors**	**EVD_5**	**H07-V-k**	**2x25 mm²**
6	**Powerstack**	**EVD_6**	**H07-V-K**	**2x25 mm²**
7	**DC Switch & Fuse**	**EVD_7**	**H07-V-K**	**2x25 mm²**
8	**AC Filter**	**EVD_8**	**H07-V-K**	**2x25 mm²**
9	**circuit-breaker**	**EVD_9**	**H07-V-K**	**2x25 mm²**
10	**Freqcon_Fast_Disconektor**	**EVD_10**	**H07-V-K**	**2x25 mm²**
11	**Freqcon_Rectifier_Modul**	**EVD_11**	**H07-V-K**	**2x25 mm²**
12	**capacitor banks**	**EVD_12**	**H07-V-K**	**2x25 mm²**
13	**water distributor**	**EVD_13**	**H07-V-K**	**2x25 mm²**
14	**SPARE**	**EVD_14**	**H07-V-K**	**2x25 mm²**
15	**SPARE**	**EVD_15**	**H07-V-K**	**2x25 mm²**
16	**SPARE**	**EVD_16**	**H07-V-K**	**2x25 mm²**
17	**SPARE**	**EVD_17**	**H07-V-K**	**2x25 mm²**
18	**SPARE**	**EVD_18**	**H07-V-K**	**2x25 mm²**
	from door to			
19	**PROFINET IRT IGBT Interface**	**EVD_19**	**H07-V-K**	**1,5 mm²**
20	**HMI**	**EVD_20**	**H07-V-K**	**1,5 mm²**
21	**SPARE**	**EVD_21**	**H07-V-K**	**??? mm²**
22	**SPARE**	**EVD_22**	**H07-V-K**	**??? mm²**

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Single line diagram





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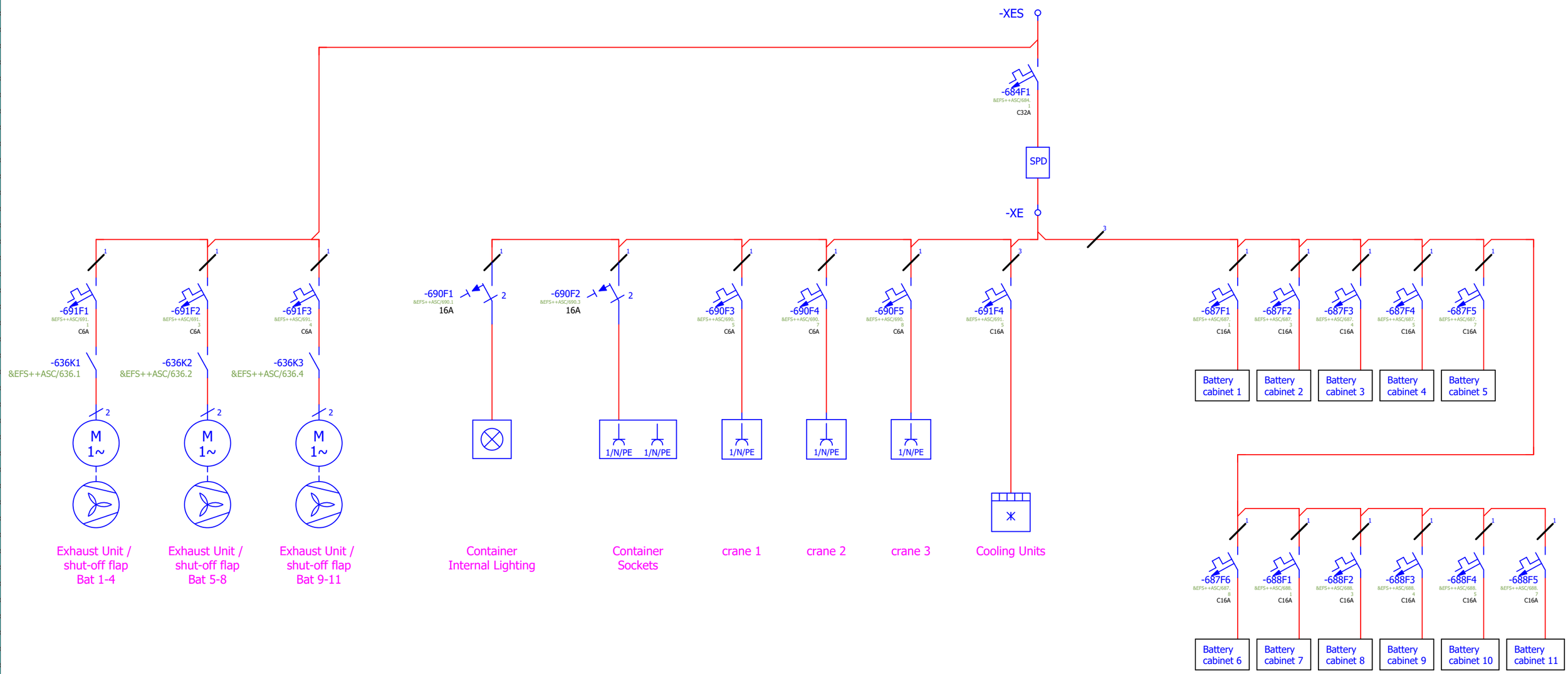
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Editor	Freqcon_JD			Statron	FREQCON	SYSTEMS OVERVIEW	20240809_V0.7	= UNIT_03 Battery Container 2
Date	18.06.2024	Norm						& EFA Single line diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ page: 1a
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Single line diagram

Control circuit

++ASC



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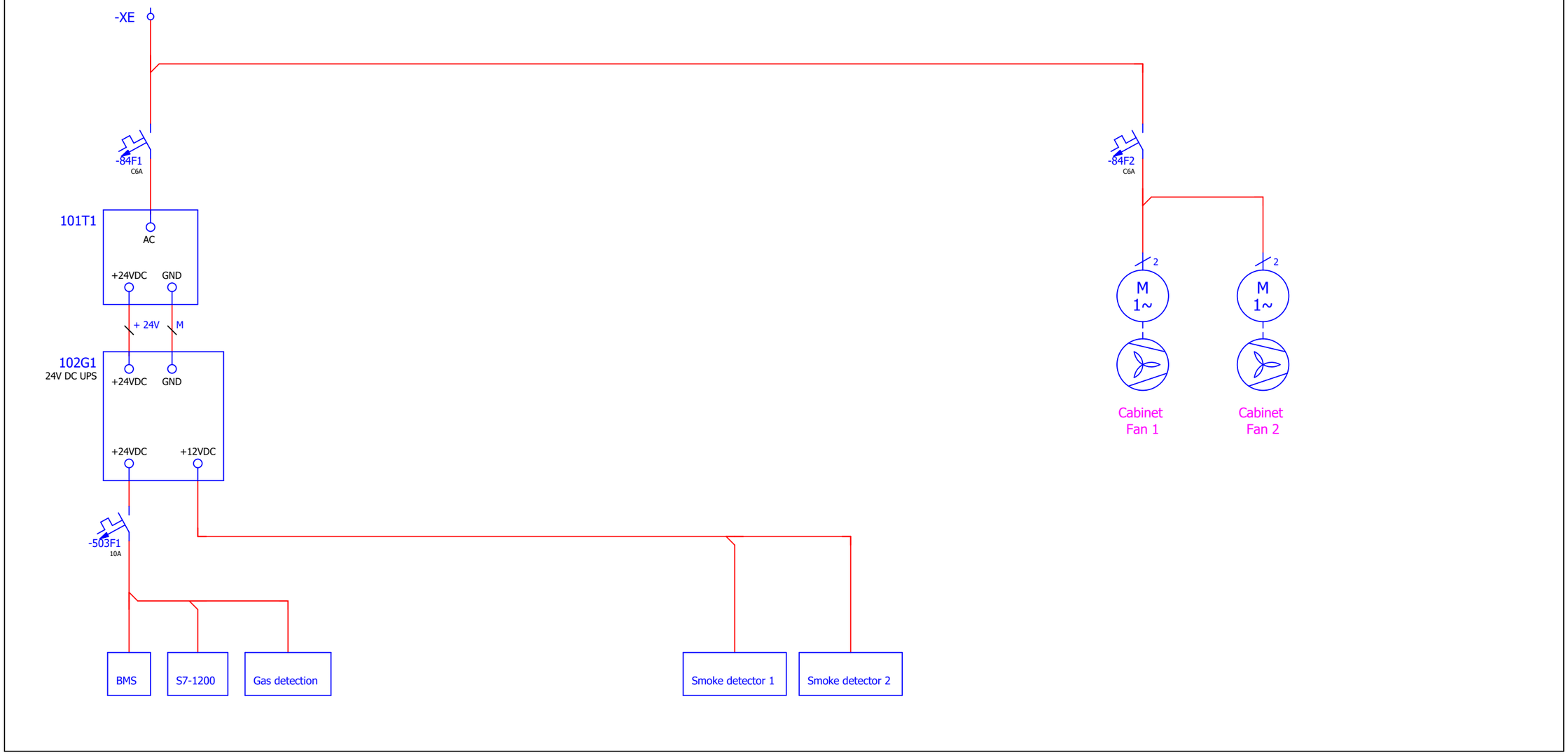
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Single line diagram

Control circuit

Battery Cabinet

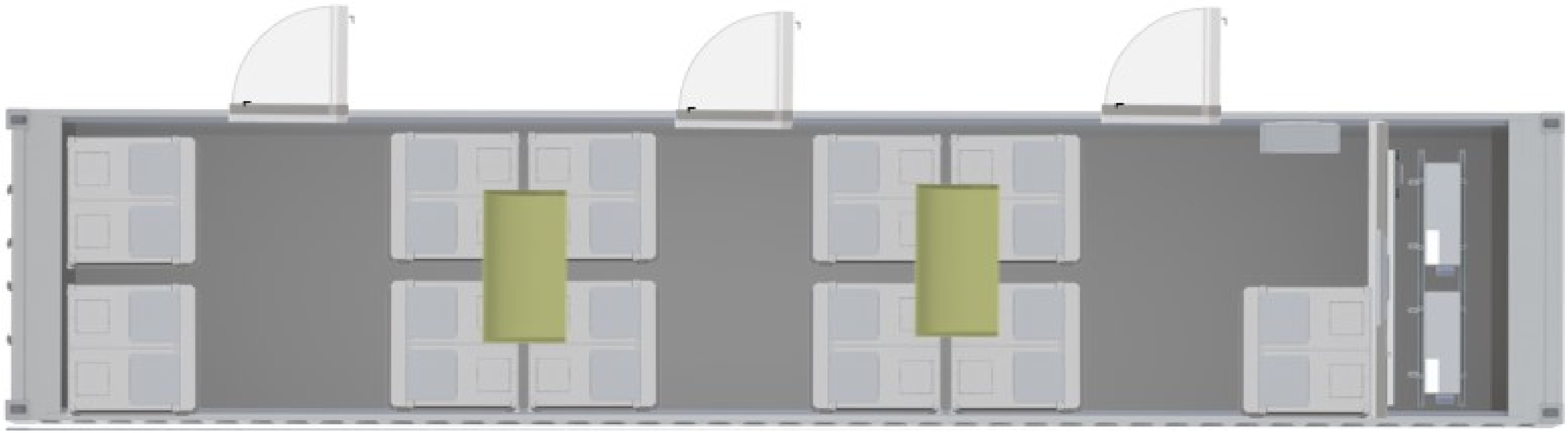


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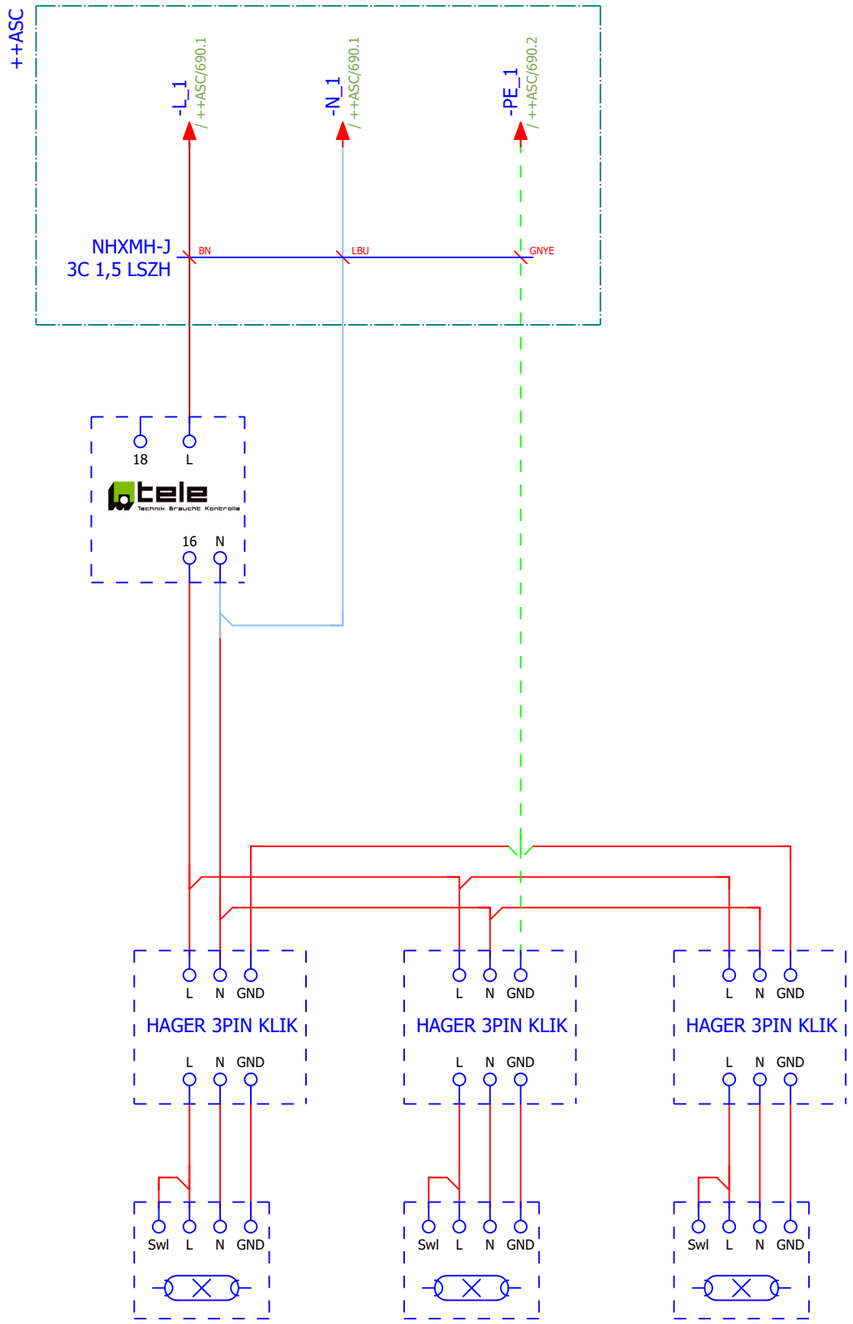
0	1	2	3	4	5	6	7	8	9



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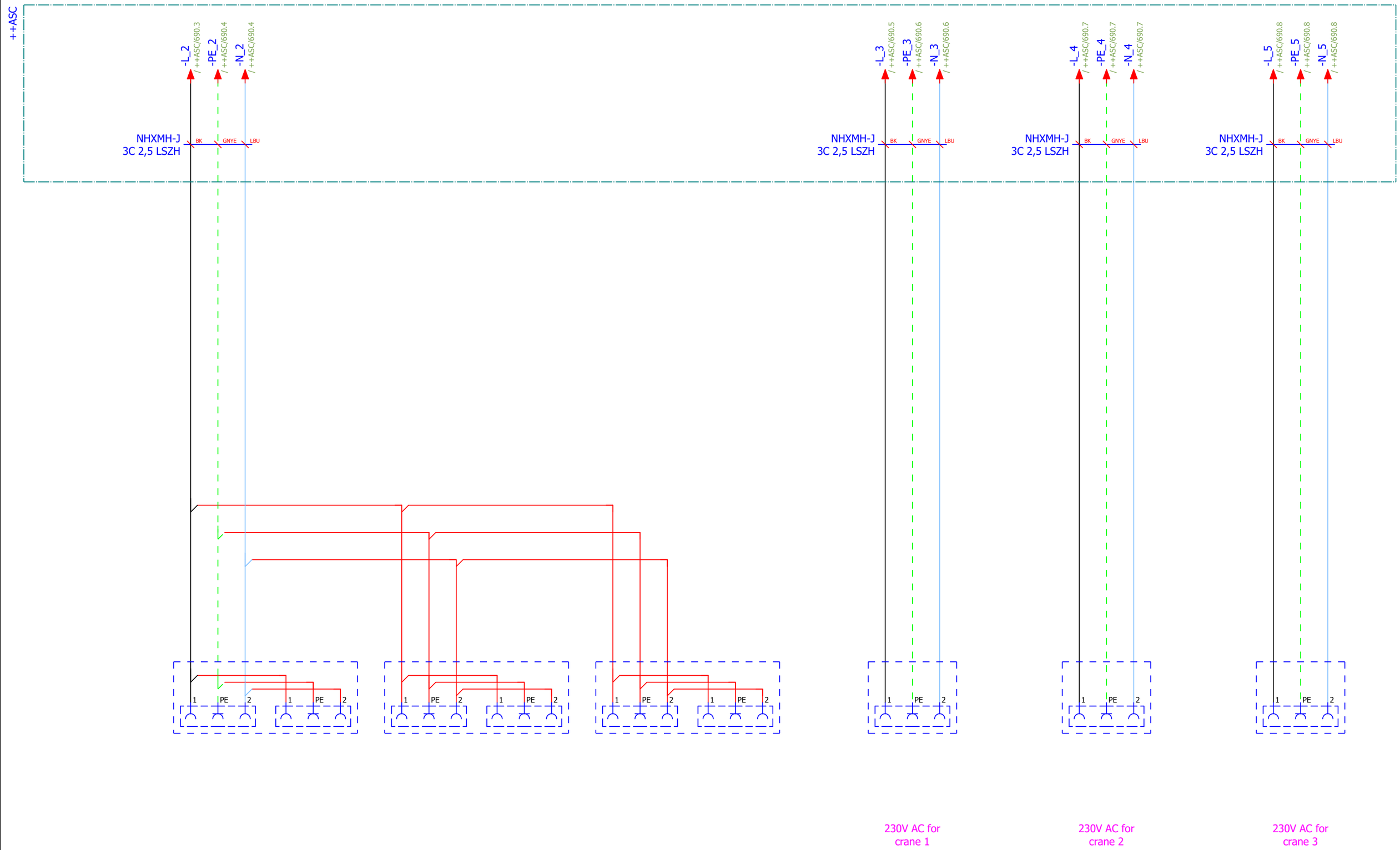
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Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 191
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++ASC

-L_6 / ++ASC/691.1
-N_6 / ++ASC/691.1
-PE_6 / ++ASC/691.2

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 1-4

-L_6 / ++ASC/691.1
-N_6 / ++ASC/691.1
-PE_6 / ++ASC/691.2

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 1-4

-L_7 / ++ASC/691.3
-N_7 / ++ASC/691.3
-PE_7 / ++ASC/691.3

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 5-8

-L_7 / ++ASC/691.3
-N_7 / ++ASC/691.3
-PE_7 / ++ASC/691.3

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 5-8

-L_8 / ++ASC/691.4
-N_8 / ++ASC/691.4
-PE_8 / ++ASC/691.4

NHXMH-J
3C 1,5 LSZH
BK LBU GNYE

L N GND
13A fused
Spur K983ALM
L N GND

1 2
M
1~
PE

BELDEN 9842
LSZH
WH BU WH BU

Junction Box
next to fan motor

230V AC for
Exhaust Unit
Battery cabinets 9-11

-L_8 / ++ASC/691.4
-N_8 / ++ASC/691.4
-PE_8 / ++ASC/691.4

L N GND
13A fused
Spur K983ALM
L N GND

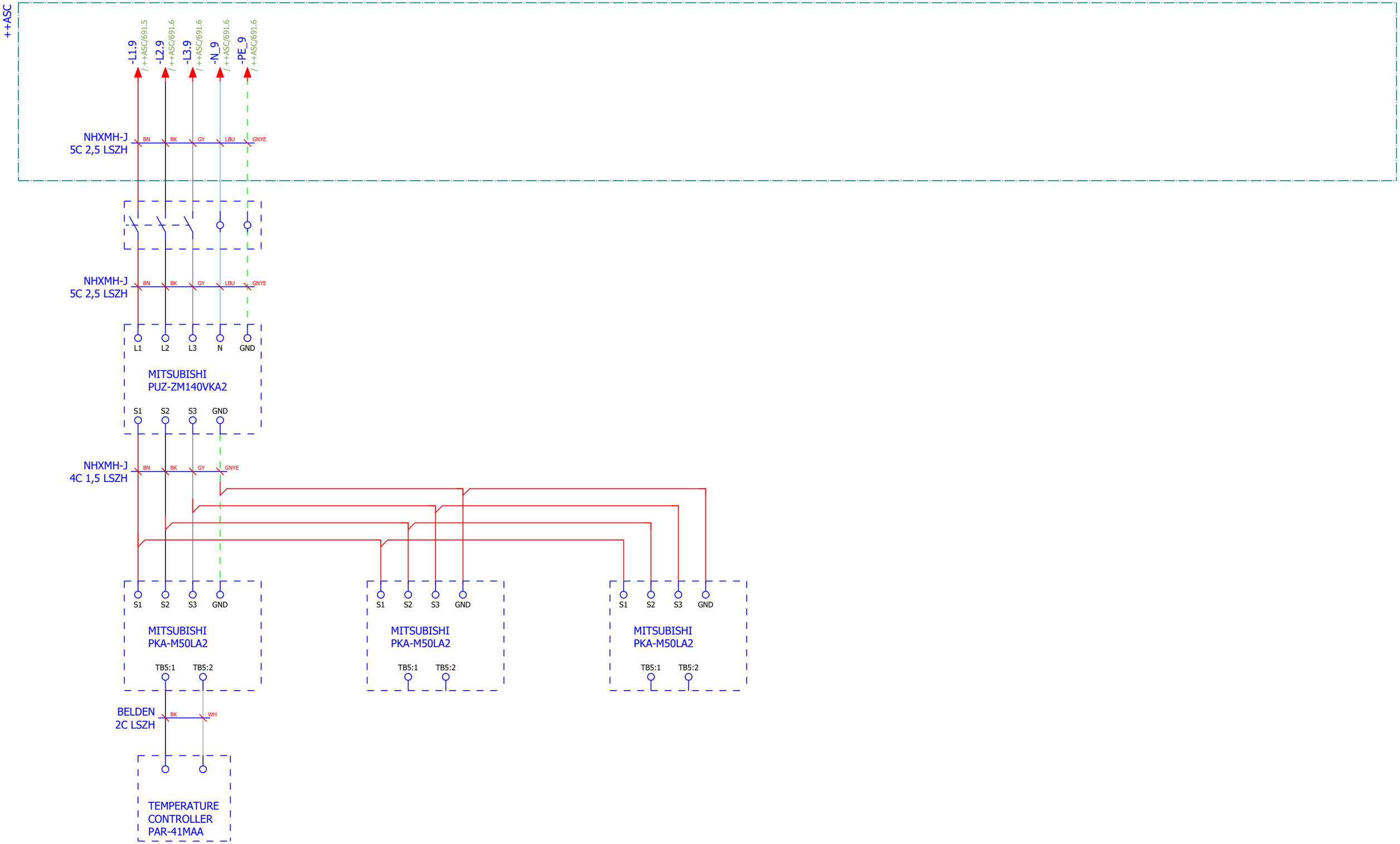
1 2
M
1~
PE

230V AC for
shut-off flap
Battery cabinets 9-11

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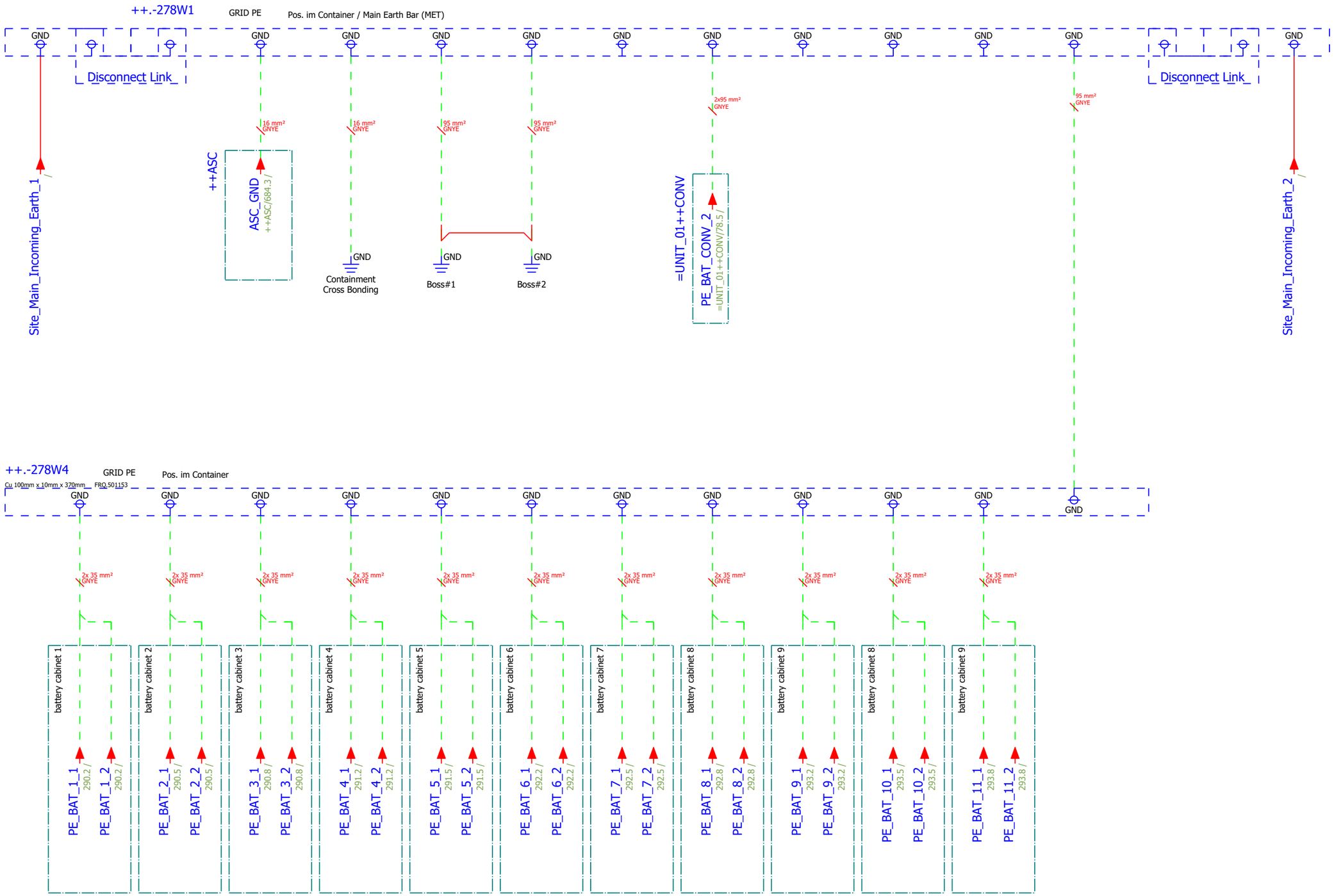


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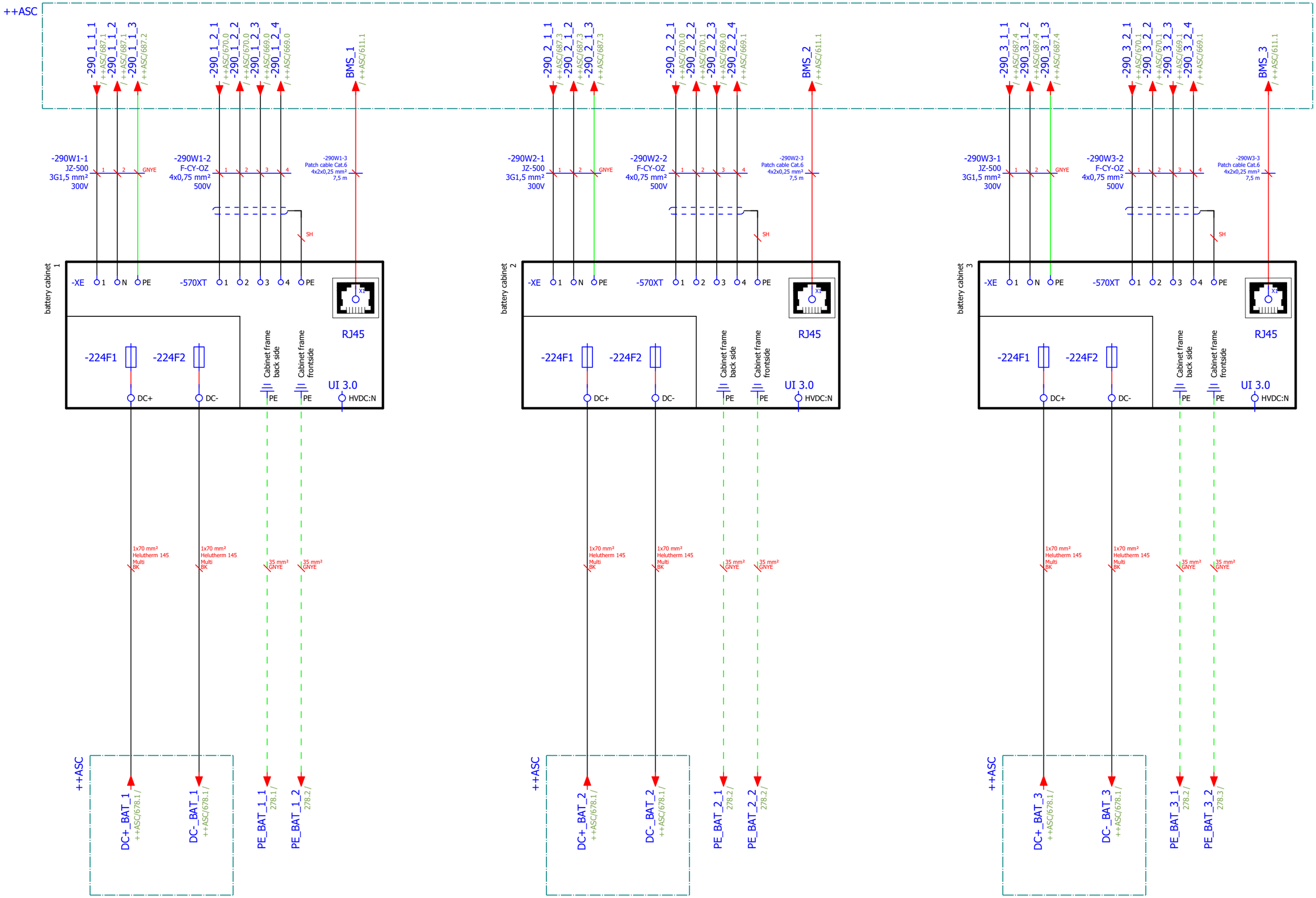
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Busbars PE



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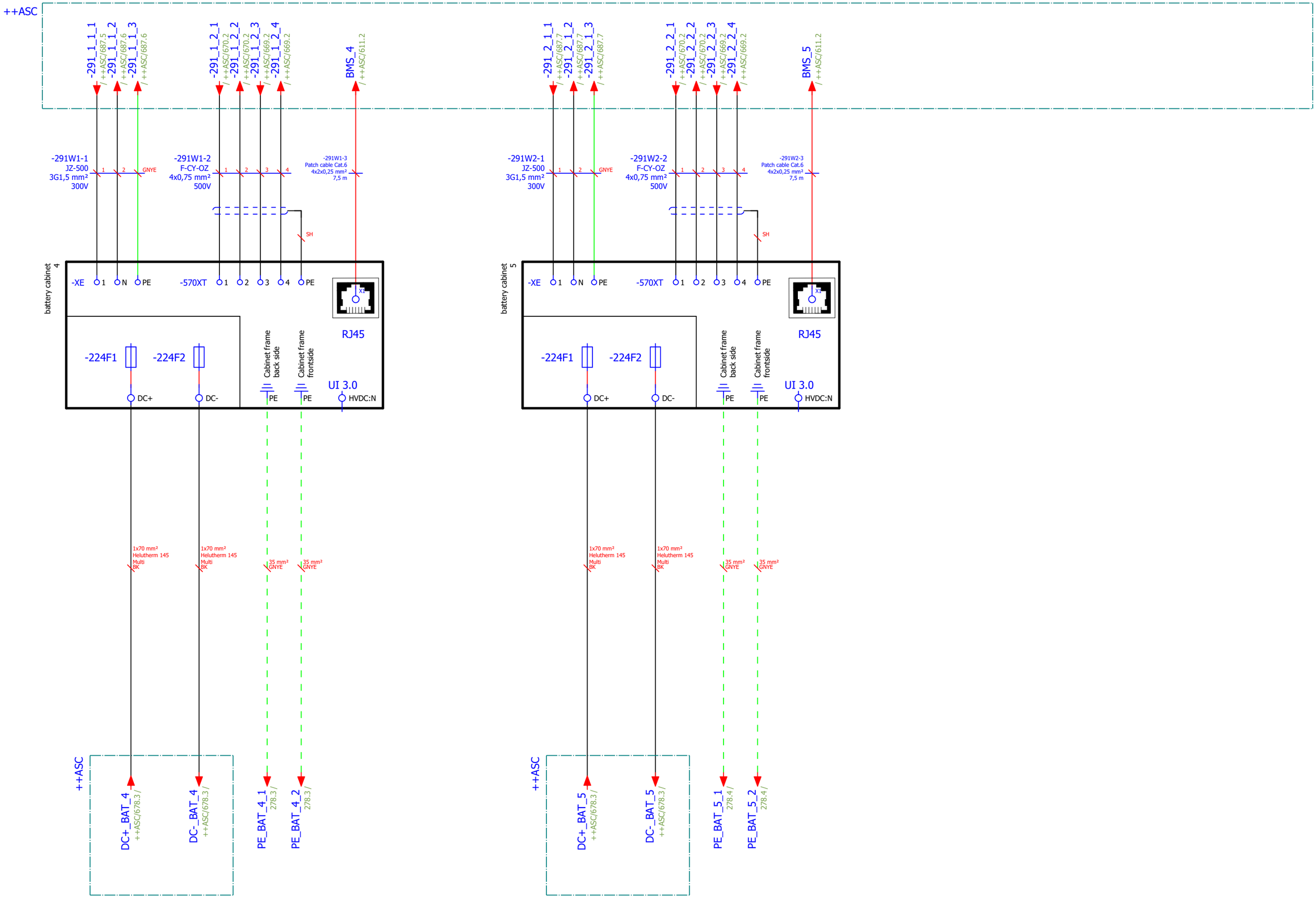
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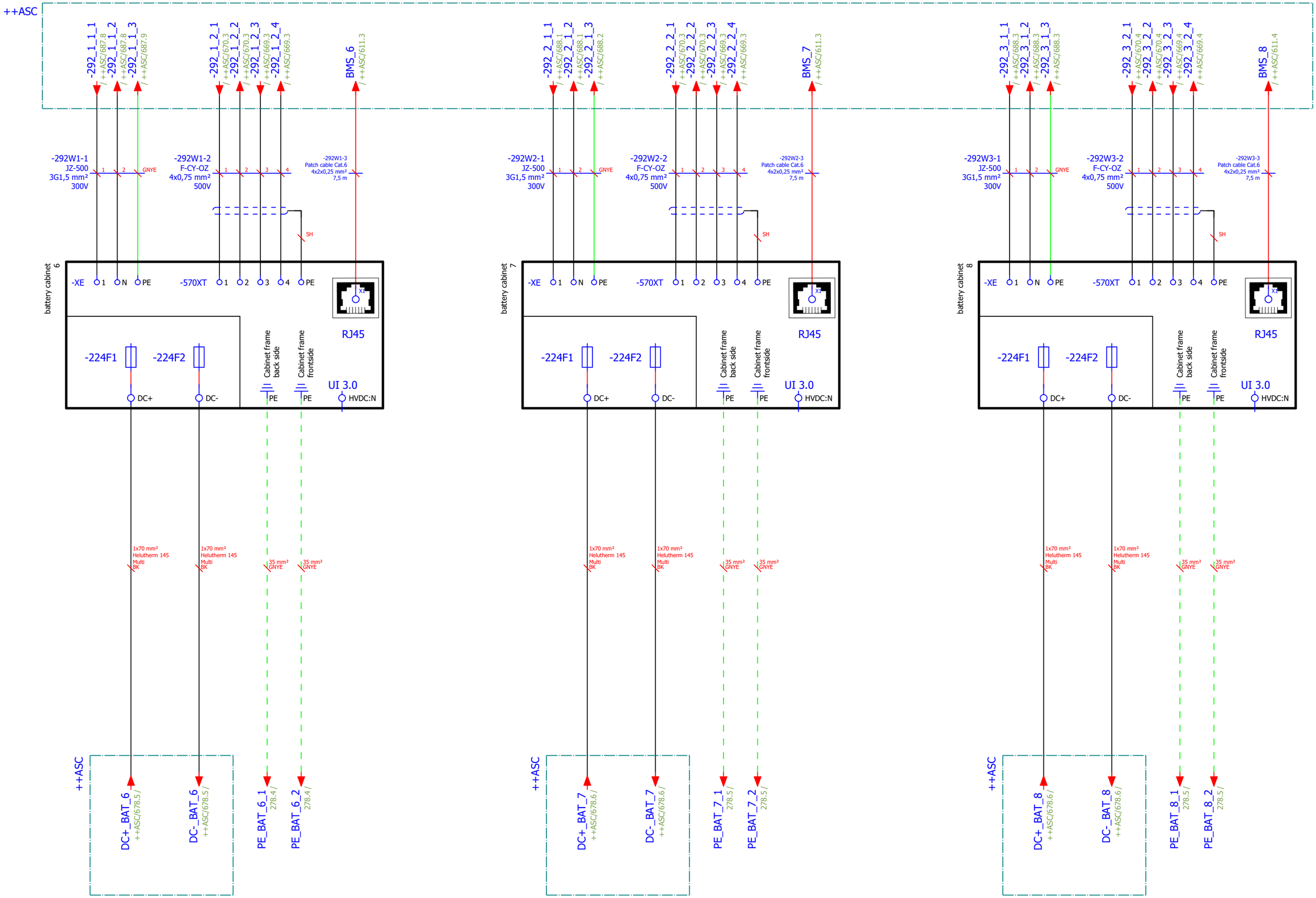
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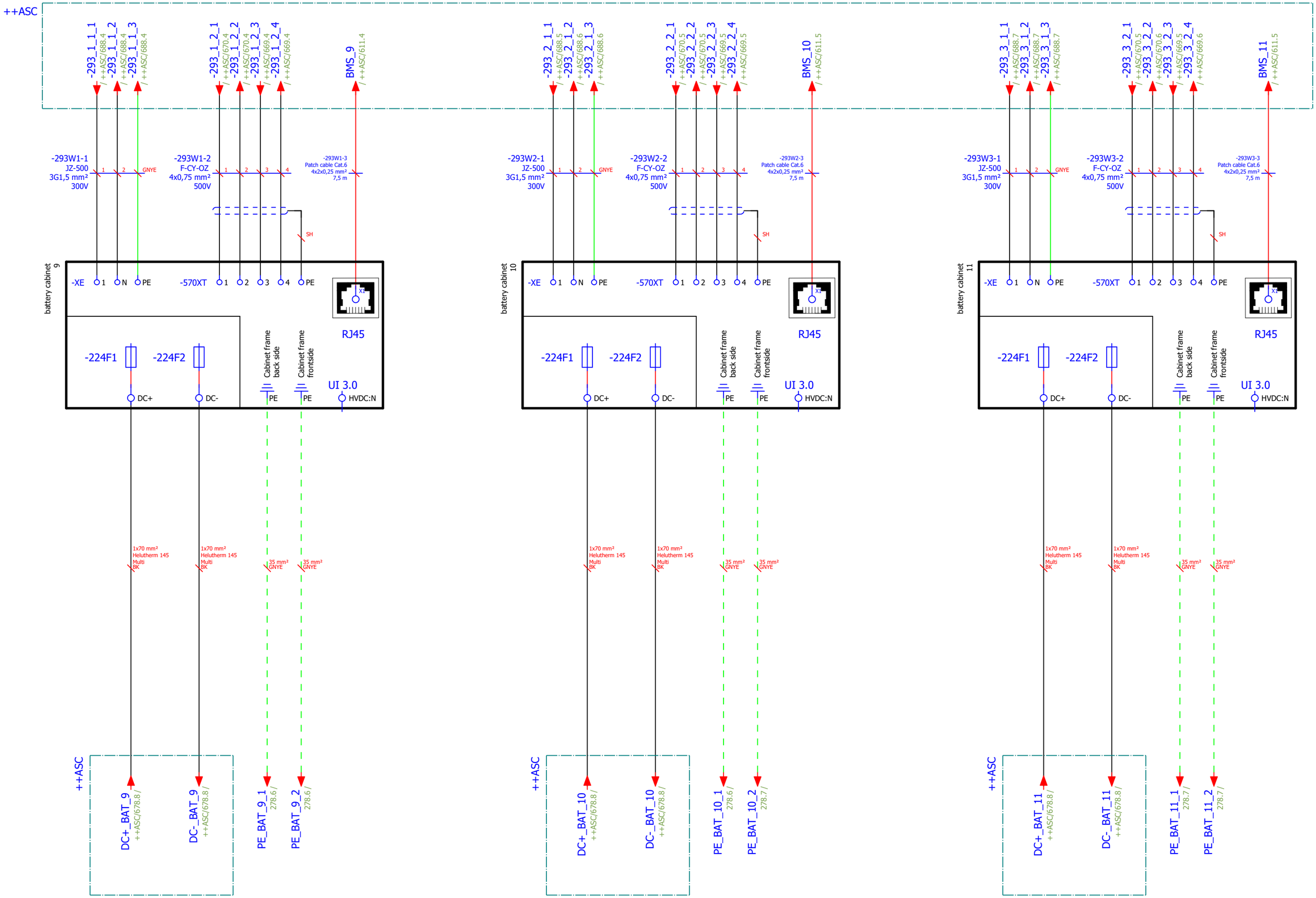
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691.9 / 3L1.3
691.9 / 3L2.3
691.9 / 3L3.3

6 mm² BK
6 mm² BK
6 mm² BK

-101Q1
2,2...3,2A
set 3,0A
3RV2011-1DA25
3RV2917-5AA00

1 3 5 13 21
2 4 6 14 22
I> I> I>
/601.7

-1PE2 / 603.4

1,5 mm² BK
1,5 mm² BK
1,5 mm² BK
1,5 mm² GNYE

-101T1
20 A
set voltage: 26 V DC

L1 L2 L3 PE
QUINT-PS/3AC/24DC/20/CO
AC AC AC
3
DCOK
I<IN
+ +' - -' -'' 13 14

L+ L-
4 mm² GNYE
4 mm² BU
4 mm² BU/WH

21L+1 602.2 /
21M1 602.2 /
-1PE1 603.4 /

-1L+1
603.2 /
0,75 mm² BU

0,75 mm² BU
0,75 mm² BU

1
DI0
+-DI_21
/621.4
E60.0
-101T1:14
400VAC Power Supply 24V DC OK

2
DI1
/621.5
E60.1
-101Q1:14
fuse 24V DC power supply unit

-1L+2
603.2 /
0,75 mm² BU
*2

-101Q1
/601.2
13
14
*2

*2
The single conductor must be placed in the protective tube

400VAC Power Supply 24V DC OK

fuse 24V DC power supply unit

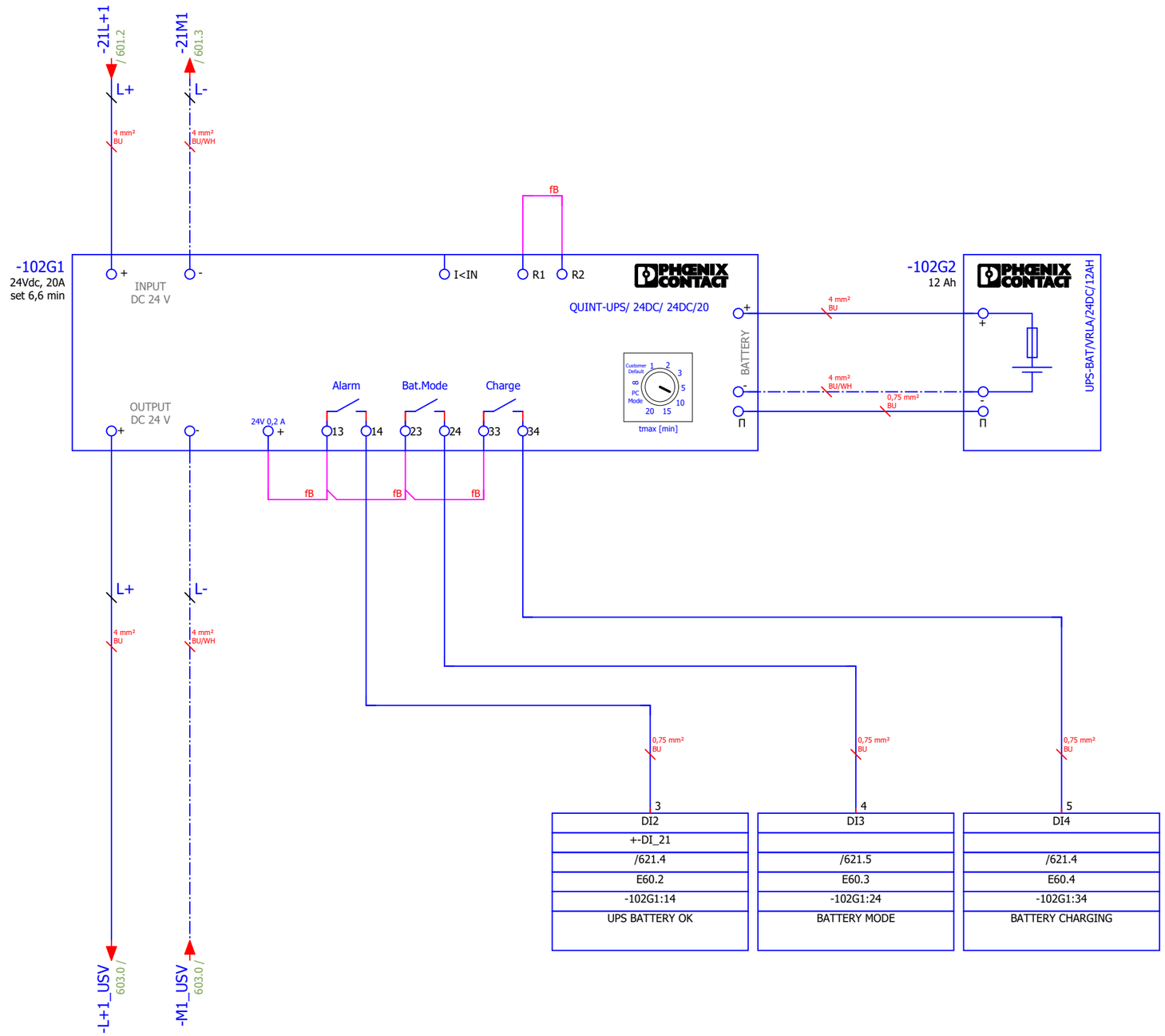
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Power supply unit from 400V AC

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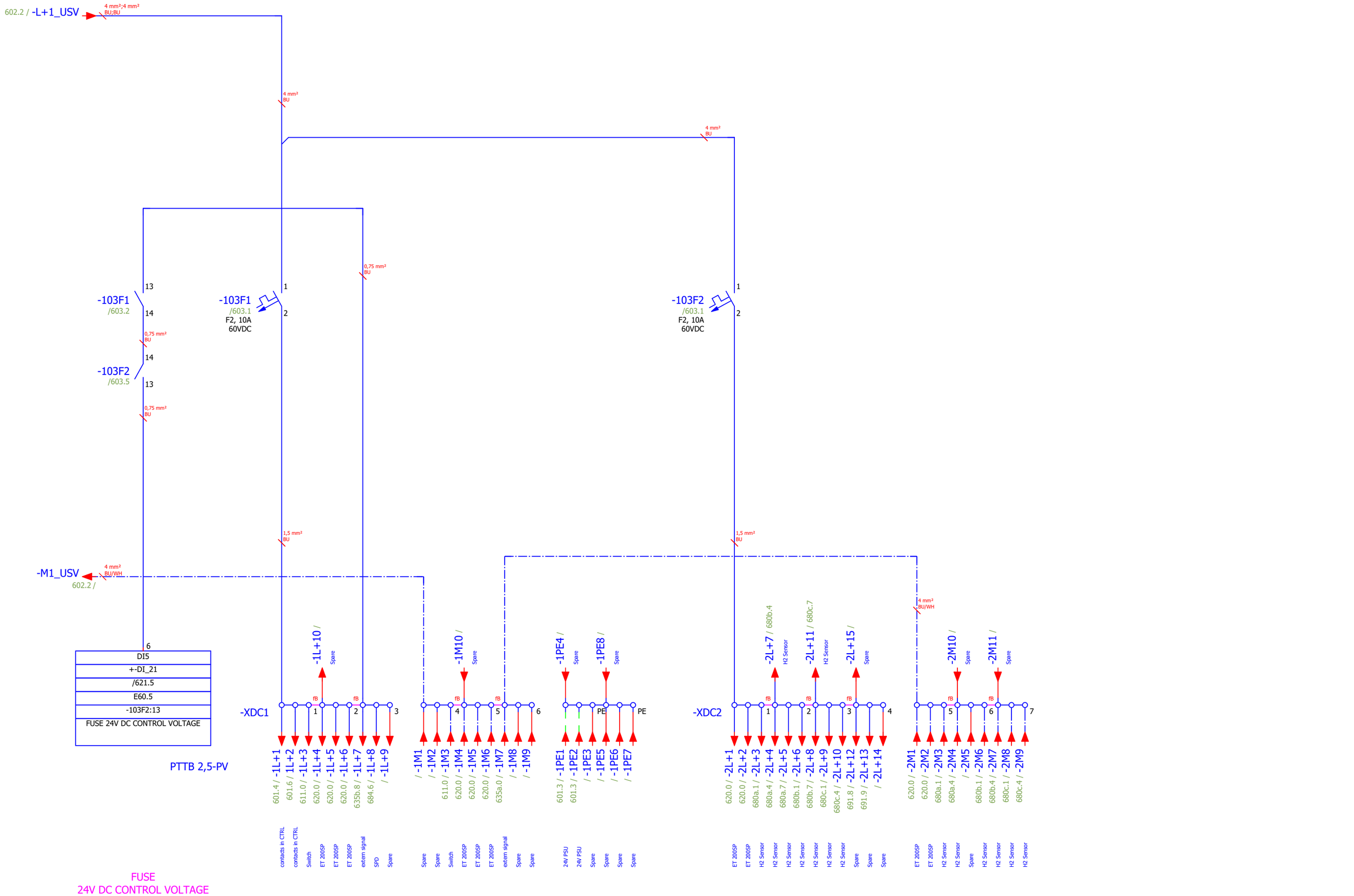
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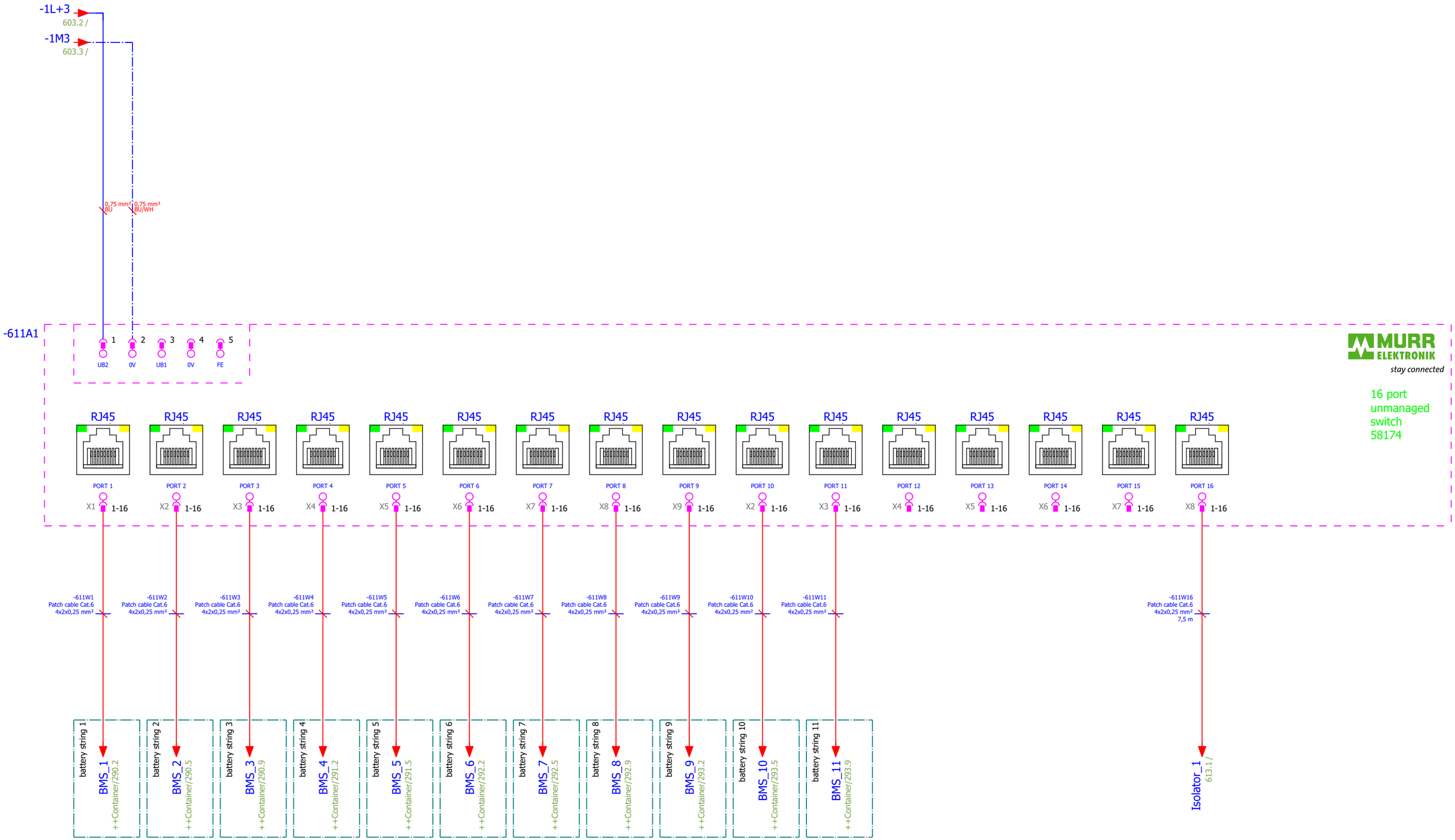
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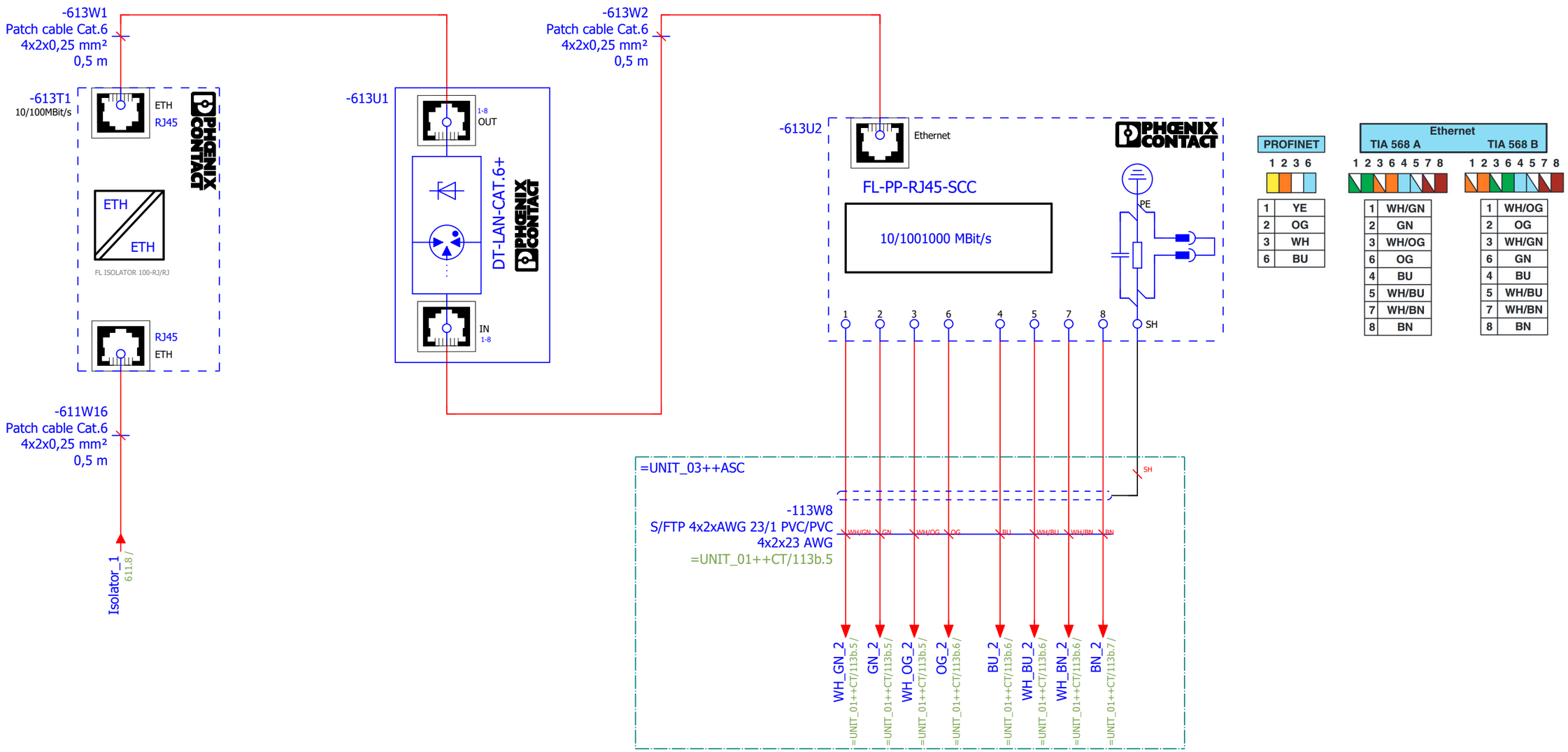
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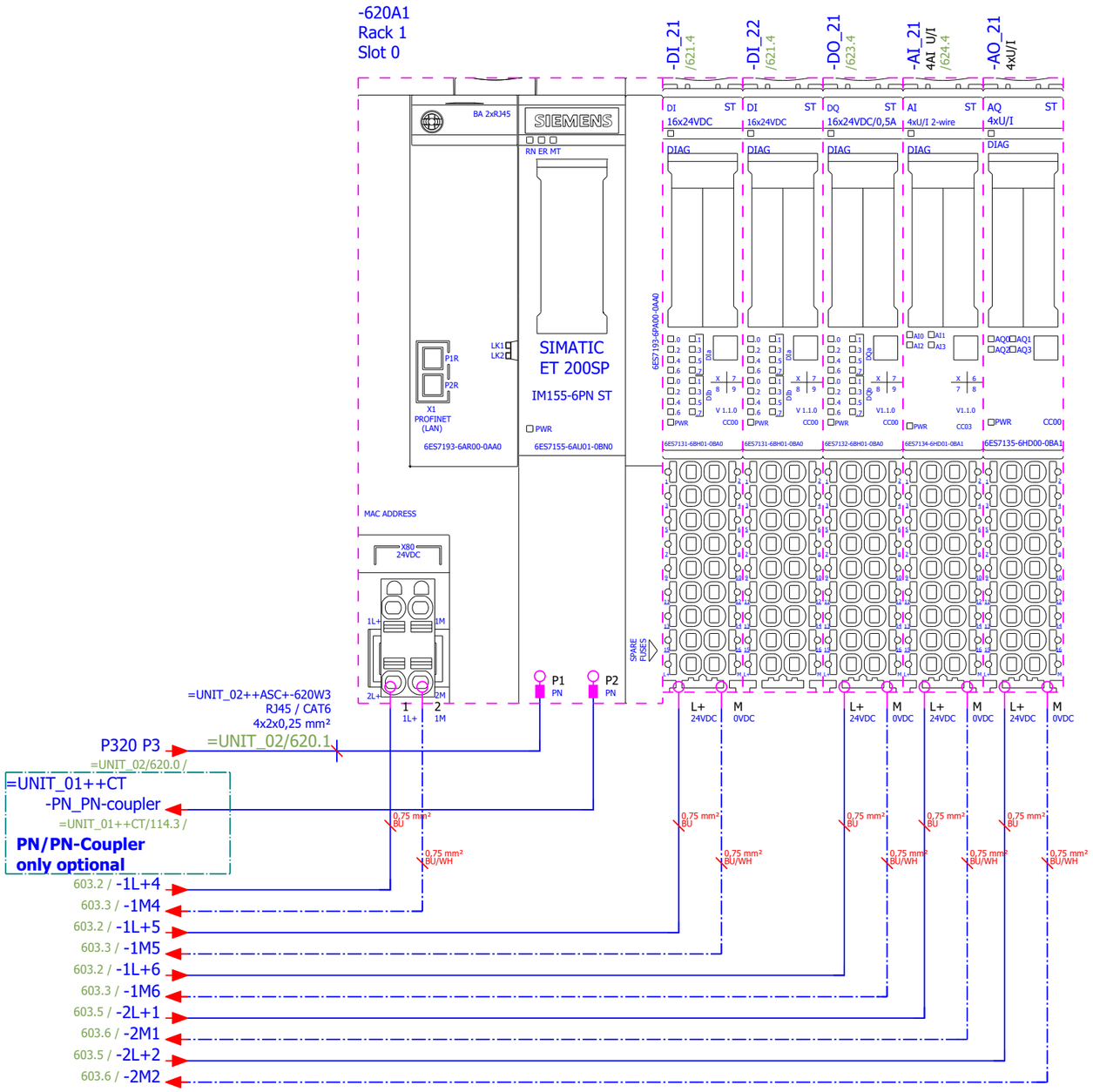
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Date								+	

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-DI_21

/620.3

400VAC Power Supply 24V DC OK	/601.5	DI0	1	E60.0	E60.1	2	DI1	/601.7	fuse 24V DC power supply unit
UPS BATTERY OK	/602.5	DI2	3	E60.2	E60.3	4	DI3	/602.6	BATTERY MODE
BATTERY CHARGING	/602.7	DI4	5	E60.4	E60.5	6	DI5	/603.1	FUSE 24V DC CONTROL VOLTAGE
Gassensor OK BAT 1-4	/680a.7	DI6	7	E60.6	E60.7	8	DI7	/680b.7	Gassensor OK BAT 5-8
Gassensor OK BAT 9-11	/680c.7	DI8	9	E61.0	E61.1	10	DI9	/635b.8	Shut-down to BESS
FUSE AND LIGHTNING PROTECTION	/684.8	DI10	11	E61.2	E61.3	12	DI11	/691.8	Fuse Exhaust Unit
Fuse Cooling Units	/691.9	DI12	13	E61.4	E61.5	14	DI13		
		DI14	15	E61.6	E61.7	16	DI15		
	/620.3	24VDC	L+			M	0VDC	/620.3	

-DI_22

/620.3

DI0	1	E60.0	E60.1	2	DI1
DI2	3	E60.2	E60.3	4	DI3
DI4	5	E60.4	E60.5	6	DI5
DI6	7	E60.6	E60.7	8	DI7
DI8	9	E61.0	E61.1	10	DI9
DI10	11	E61.2	E61.3	12	DI11
DI12	13	E61.4	E61.5	14	DI13
DI14	15	E61.6	E61.7	16	DI15
24VDC	L+			M	0VDC

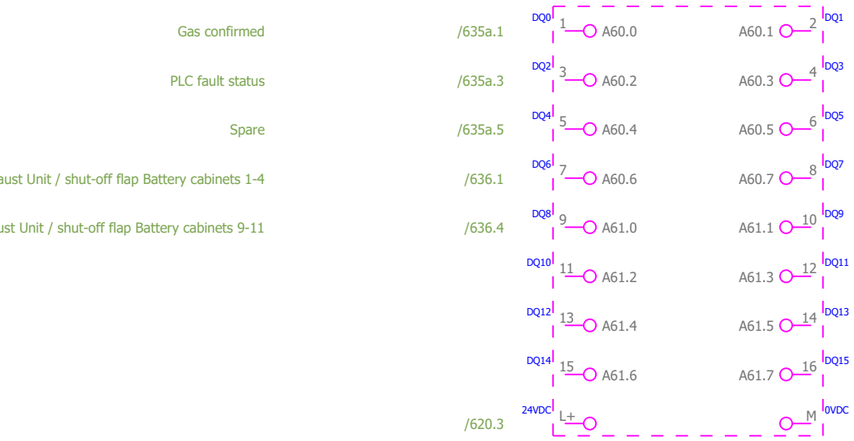
previous page: 620

next page: 623

0	1	2	3	4	5	6	7	8	9

-DO_21

/620.3



Gas confirmed	/635a.1				/635a.2	Smoke confirmed
PLC fault status	/635a.3				/635a.4	Thermal runaway
Spare	/635a.5				/635a.6	Spare
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4	/636.1				/636.2	230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11	/636.4					
	/620.3				/620.4	

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next page: 624

Editor	Freqcon_JD			Statron	FREQCON	ET200SP DIGITAL OUTPUTS DO_21	20240809_V0.7	= UNIT_03	Battery Container 2
Date	14.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482

-AI_21

/620.4



gas concentration BAT 1-4 /680a.2

gas concentration BAT 9-11 /680c.2

gas concentration BAT 1-4 /680a.2

gas concentration BAT 9-11 /680c.2

/620.4

/680b.2 gas concentration BAT 5-8

/680b.2 gas concentration BAT 5-8

/620.4

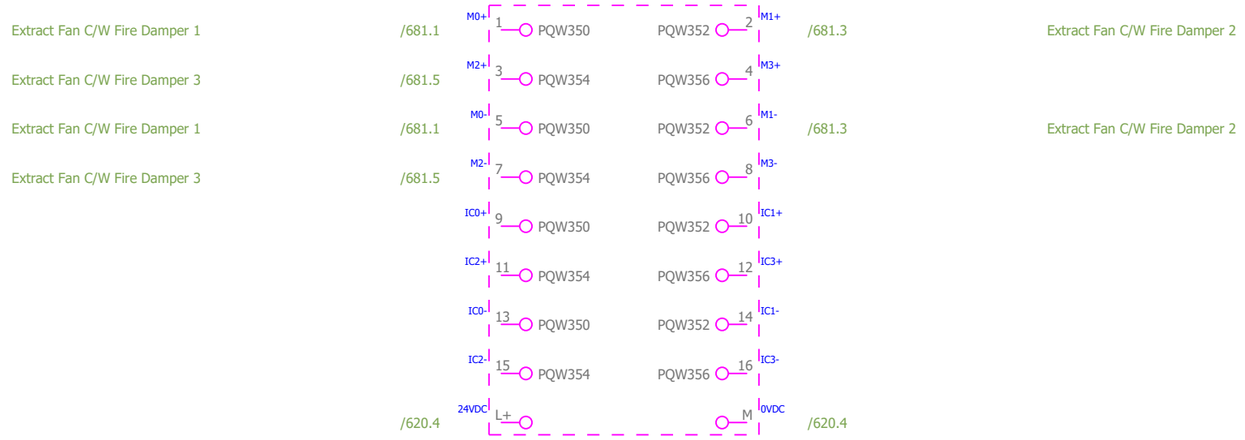
previous page: 623

next page: 625

Editor	Freqcon_JD			Statron	FREQCON	ET200SP ANALOG INPUTS AI_21	20240809_V0.7	= UNIT_03 Battery Container 2
Date	14.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet page: 624
Date								+ total: 482

-AO_21

/620.4



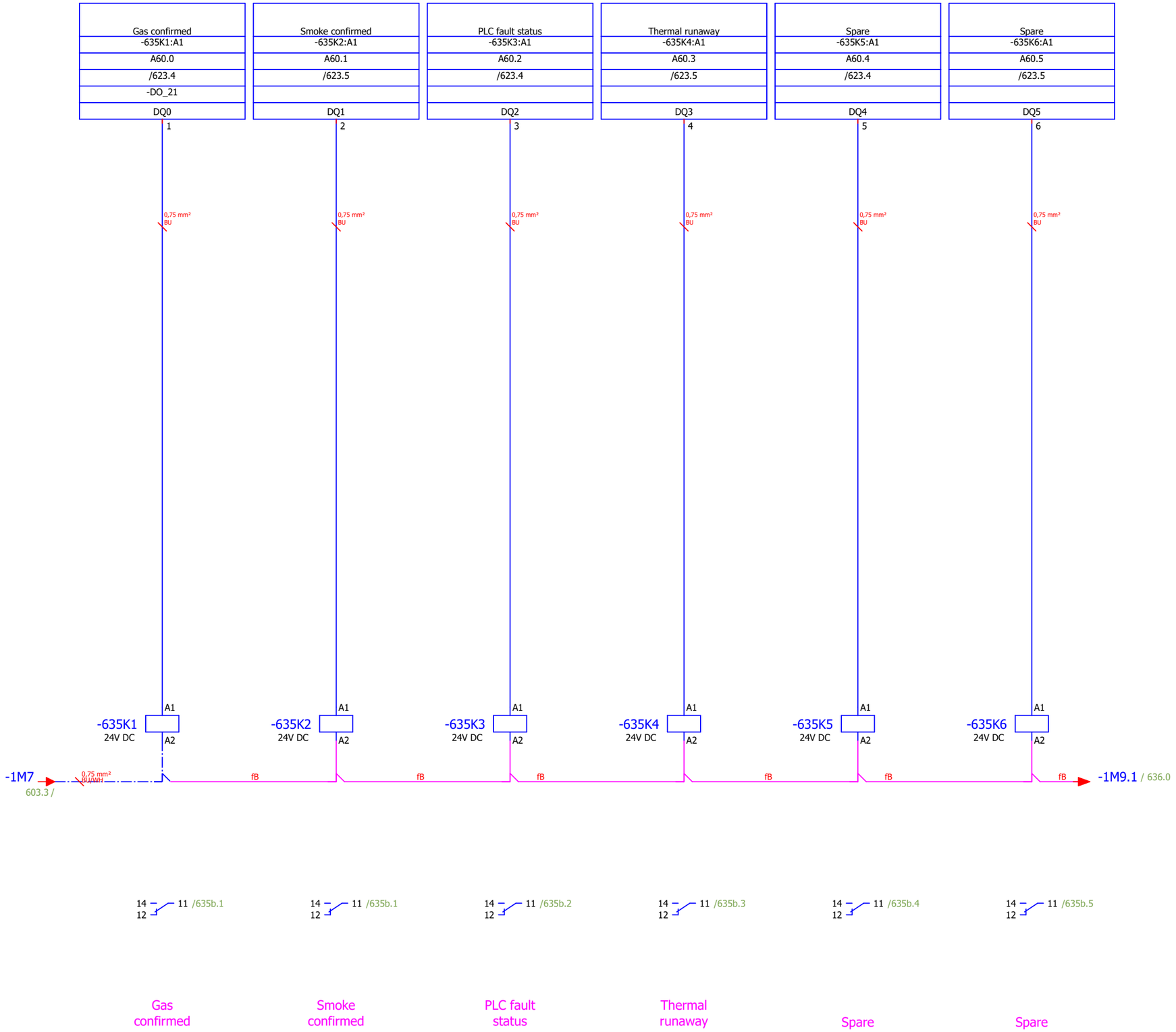
previous page: 624

next page: 635a

Editor	Freqcon_JD			Statron	FREQCON	ET200SP ANALOG OUTPUTS AO_21	20240809_V0.7	= UNIT_03	Battery Container 2
Date	14.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

page: 625
total: 482

0	1	2	3	4	5	6	7	8	9



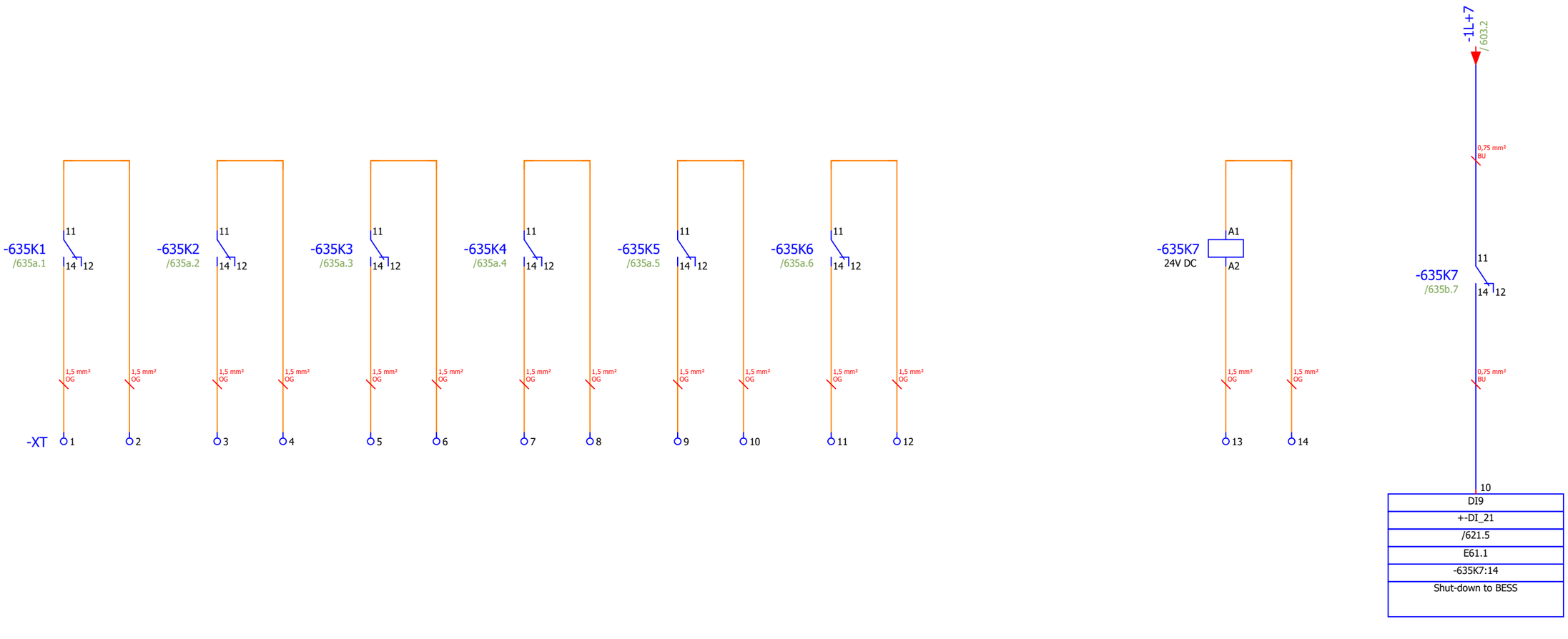
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next page: 635b

Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS COMMUNICATION	20240809_V0.7	= UNIT_03	Battery Container 2
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482



Gas confirmed FGS

Smoke confirmed FGS

PLC fault status SIS

Thermal runaway SIS

Spare

Spare

Shut-down to BESS

Shut-down to BESS

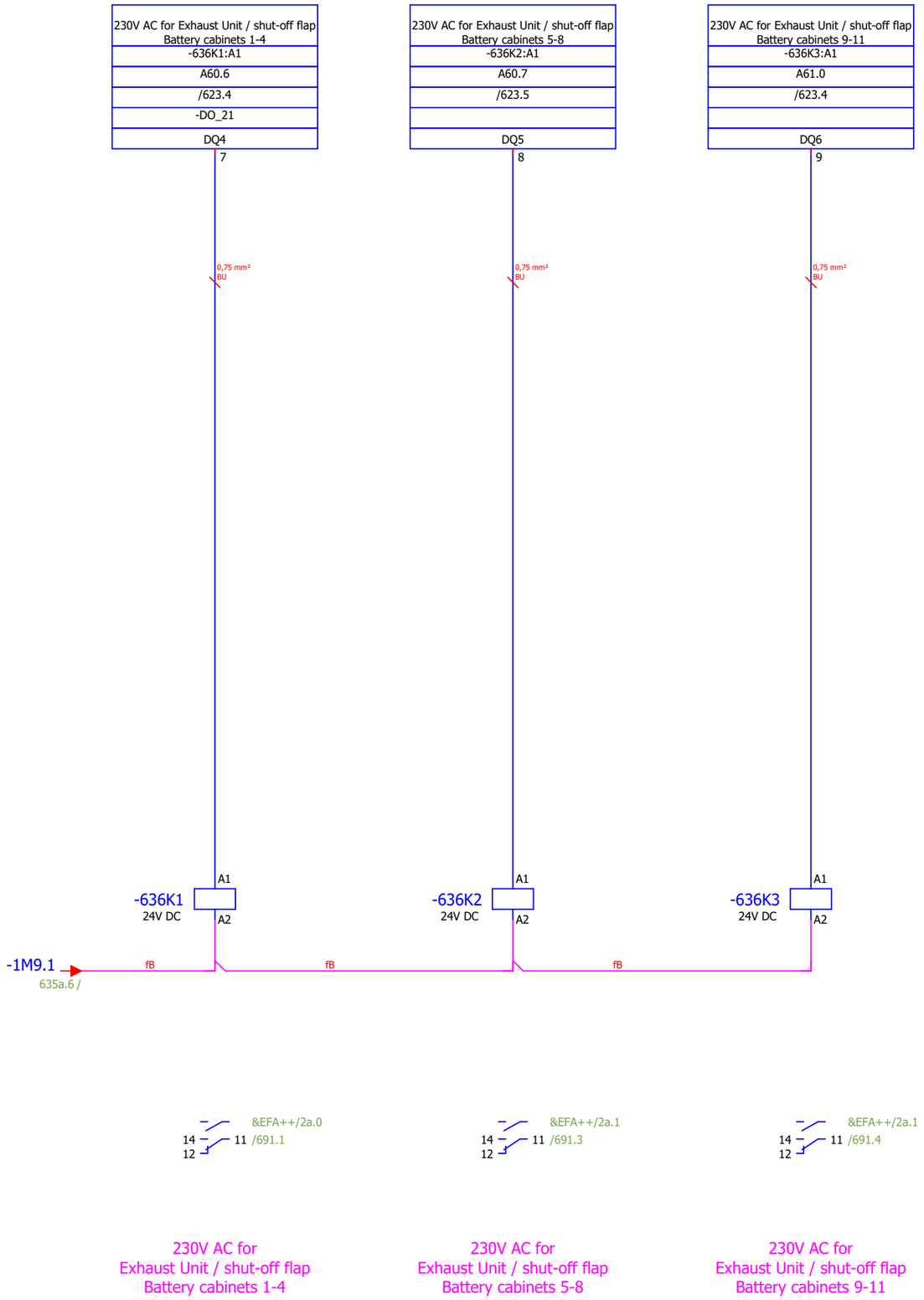
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next page: 636

Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS COMMUNICATION	20240809_V0.7	= UNIT_03	Battery Container 2
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

page: 635b

total: 482

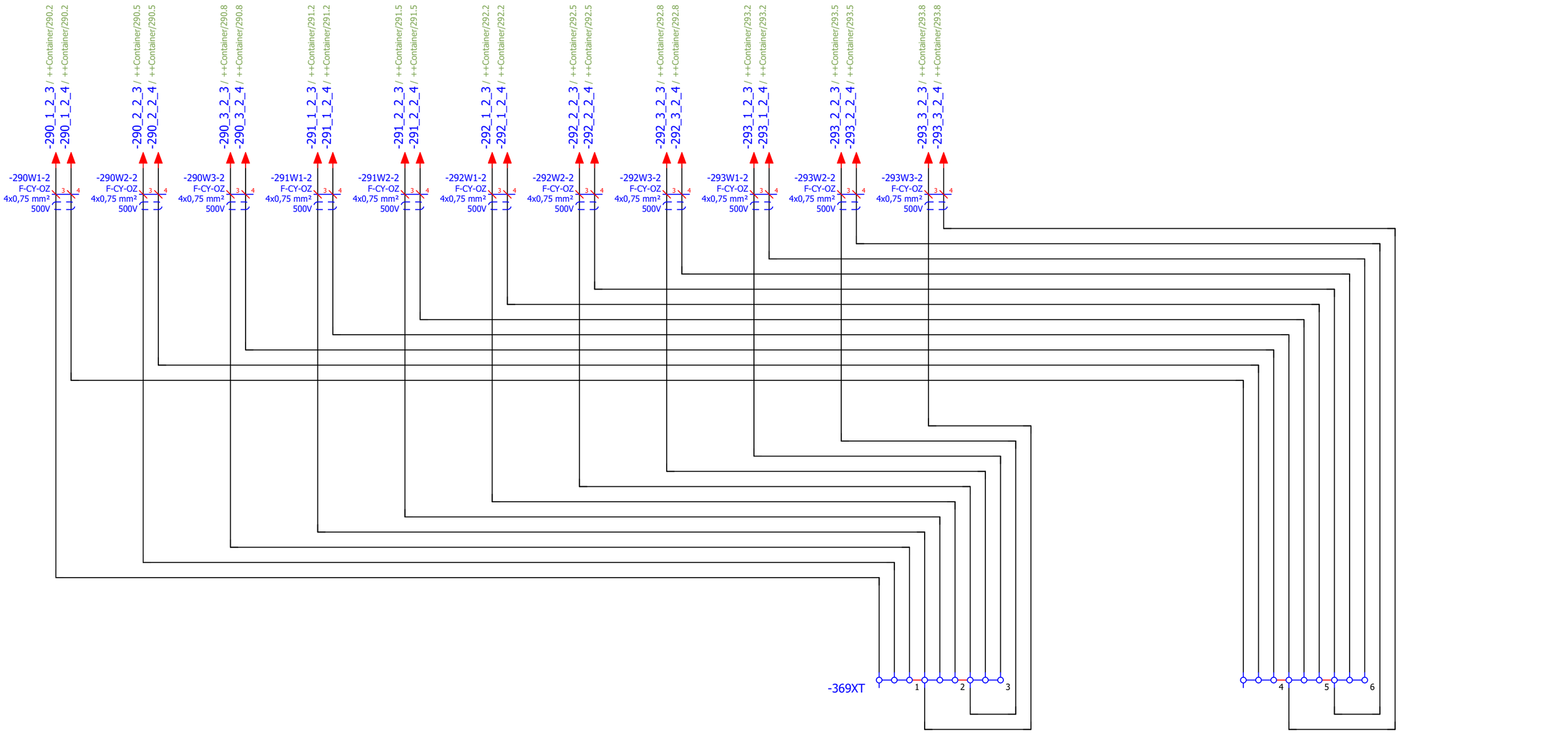


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Editor	Freqcon_JD			Statron	FREQCON	OUTPUTS FIRE DAMPER	20240809_V0.7	= UNIT_03	Battery Container 2
Date	18.06.2024							& EFS	Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482



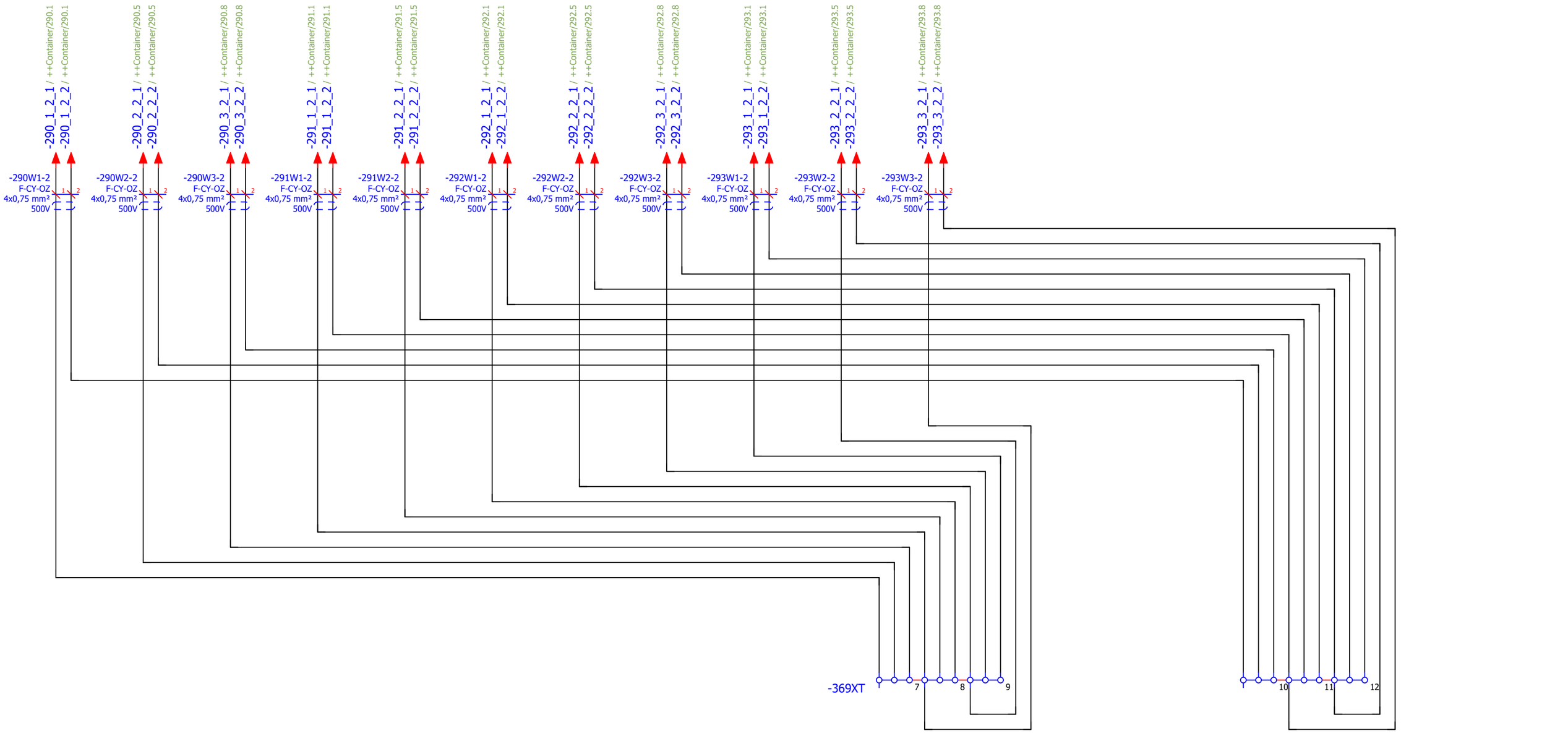
battery cabinet smoke detector
potential-free contacts
customer

battery cabinet smoke detector
potential-free contacts
customer

previous page: 636

next page: 670

Editor	Freqcon_JD			Statron	FREQCON	SMOKE POTENTIAL-FREE CONTACTS	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 669
Date								+	total: 482



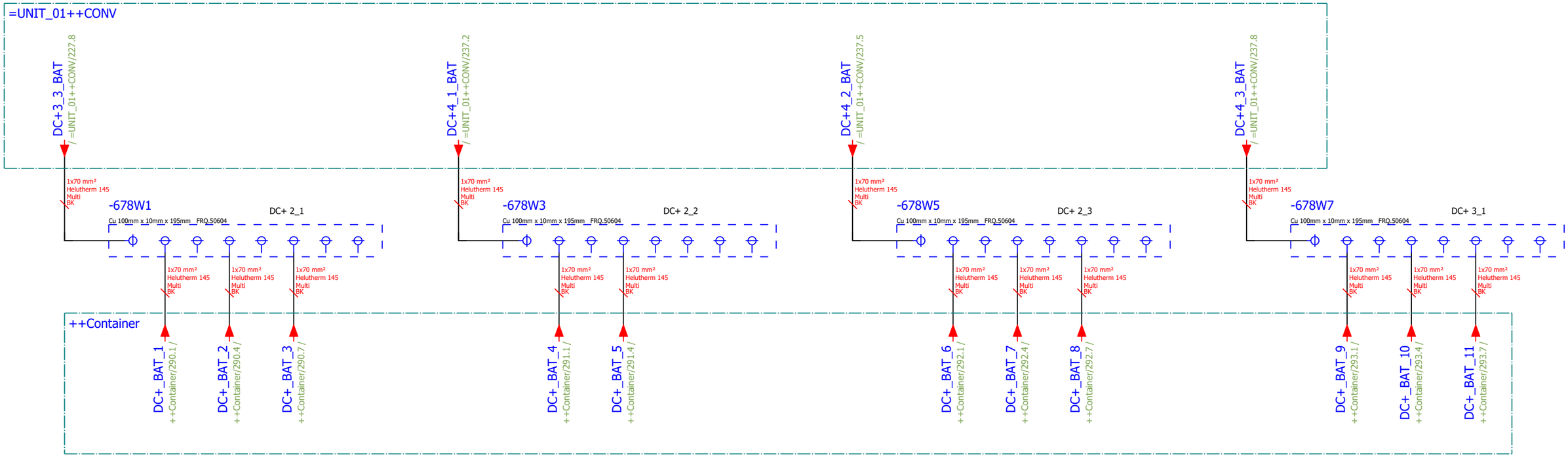
battery cabinet gas
potential-free contacts
customer

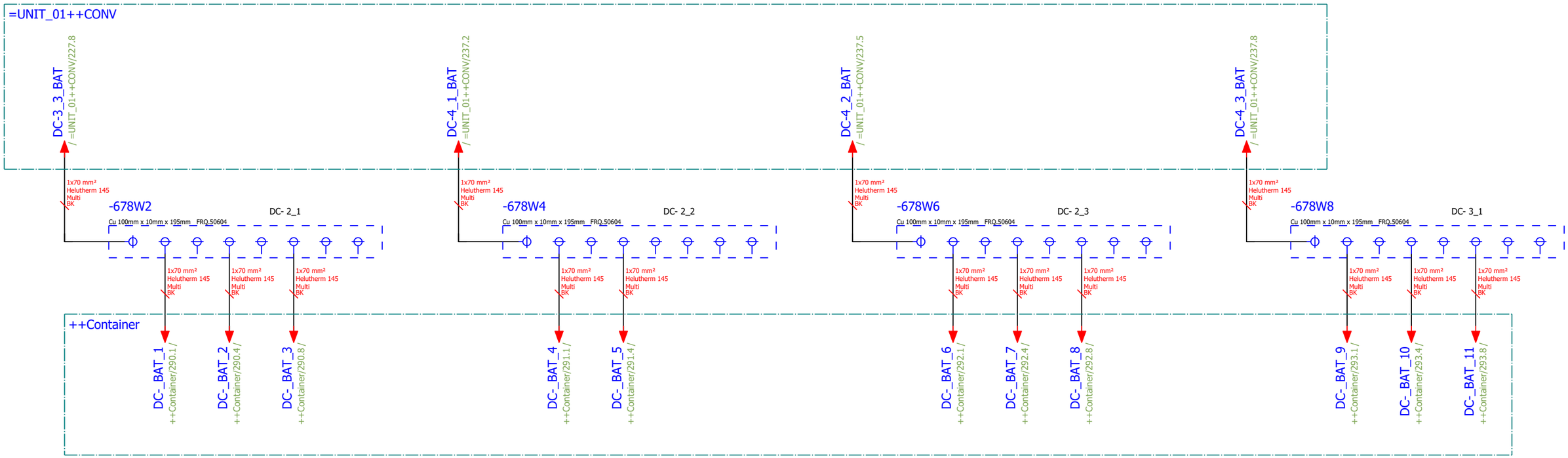
battery cabinet gas
potential-free contacts
customer

previous page:
669

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678

Editor	Freqcon_JD			Statron	FREQCON	GAS POTENTIAL-FREE CONTACTS	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 670
Date								+	total: 482

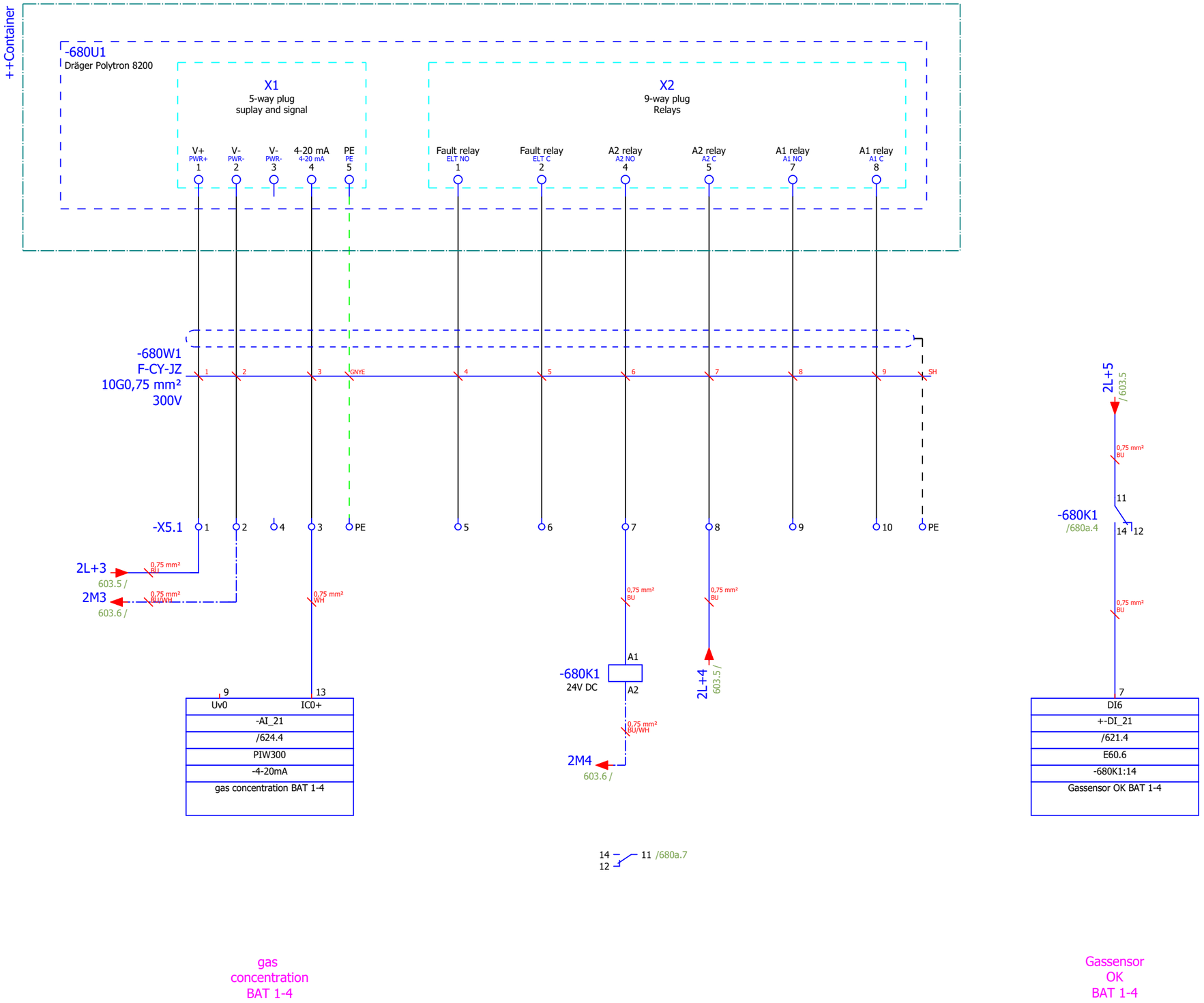




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next page: 680a

Editor	Freqcon_JD			Statron	FREQCON	DC BATTERY CABINETS	20240809_V0.7	= UNIT_03	Battery Container 2	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 678
Date								+		total: 482



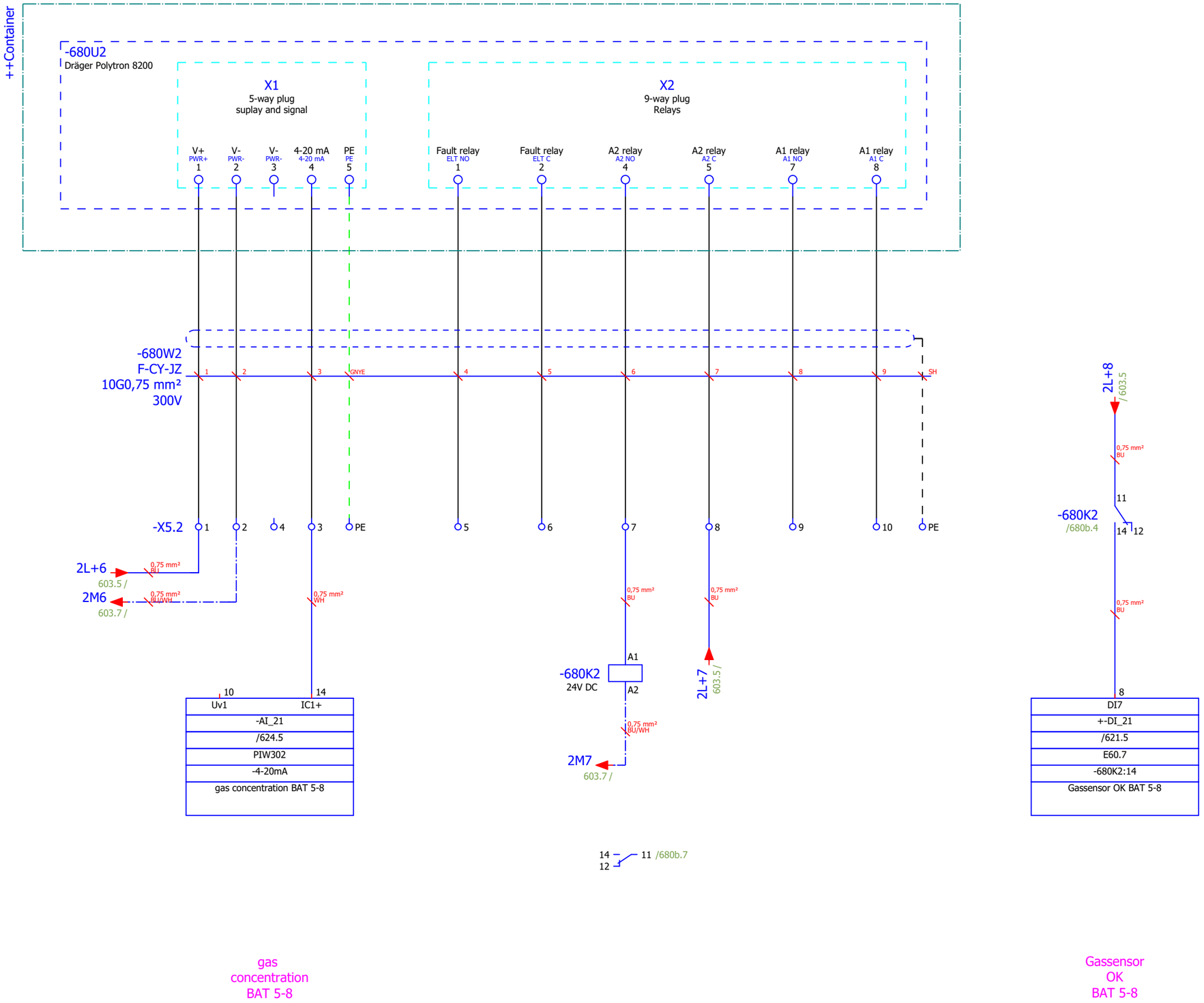
gas concentration BAT 1-4

Gassensor OK BAT 1-4

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Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 1-4	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 680a
Date								+	total: 482



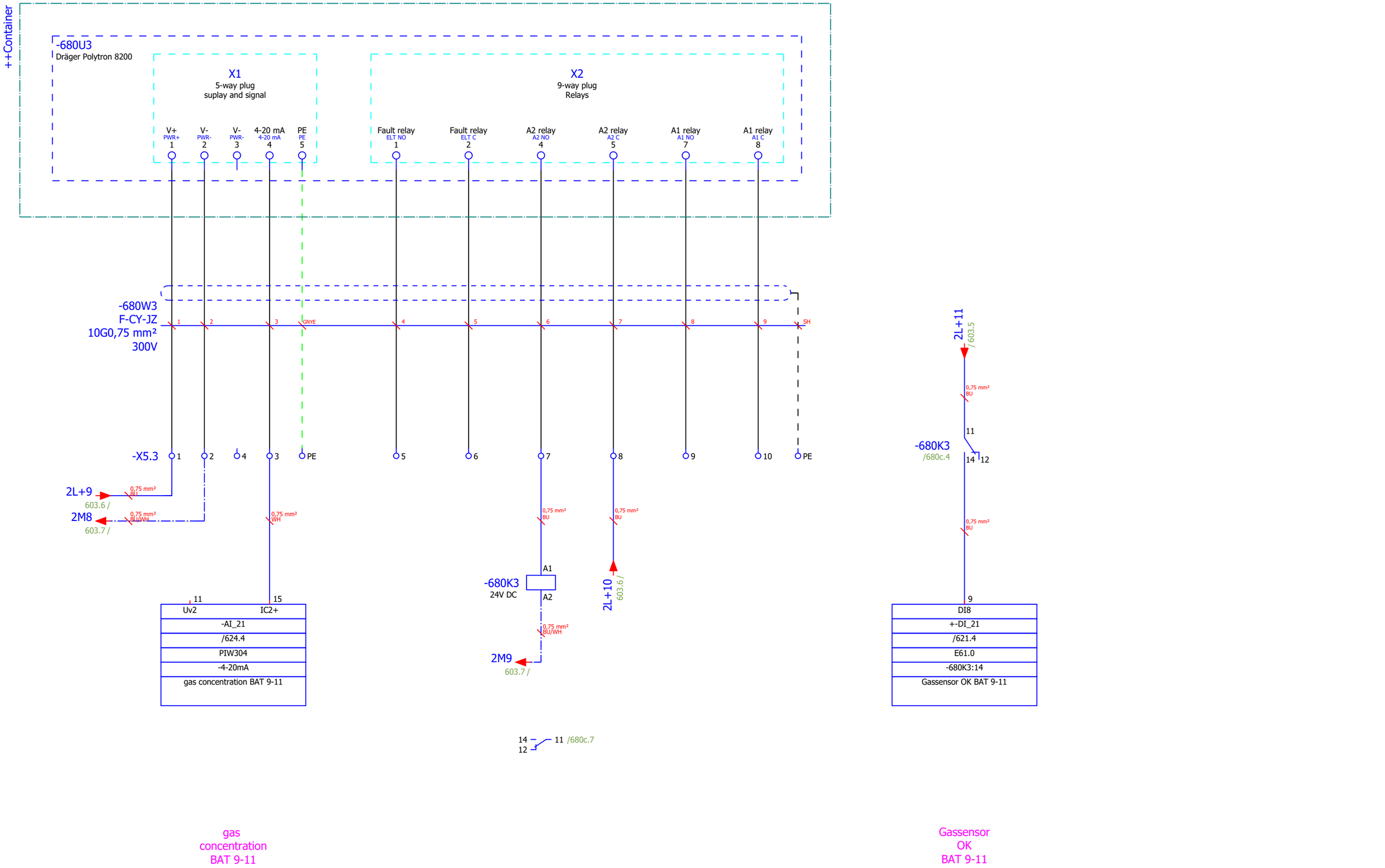
gas concentration BAT 5-8

Gassensor OK BAT 5-8

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next page: 680c

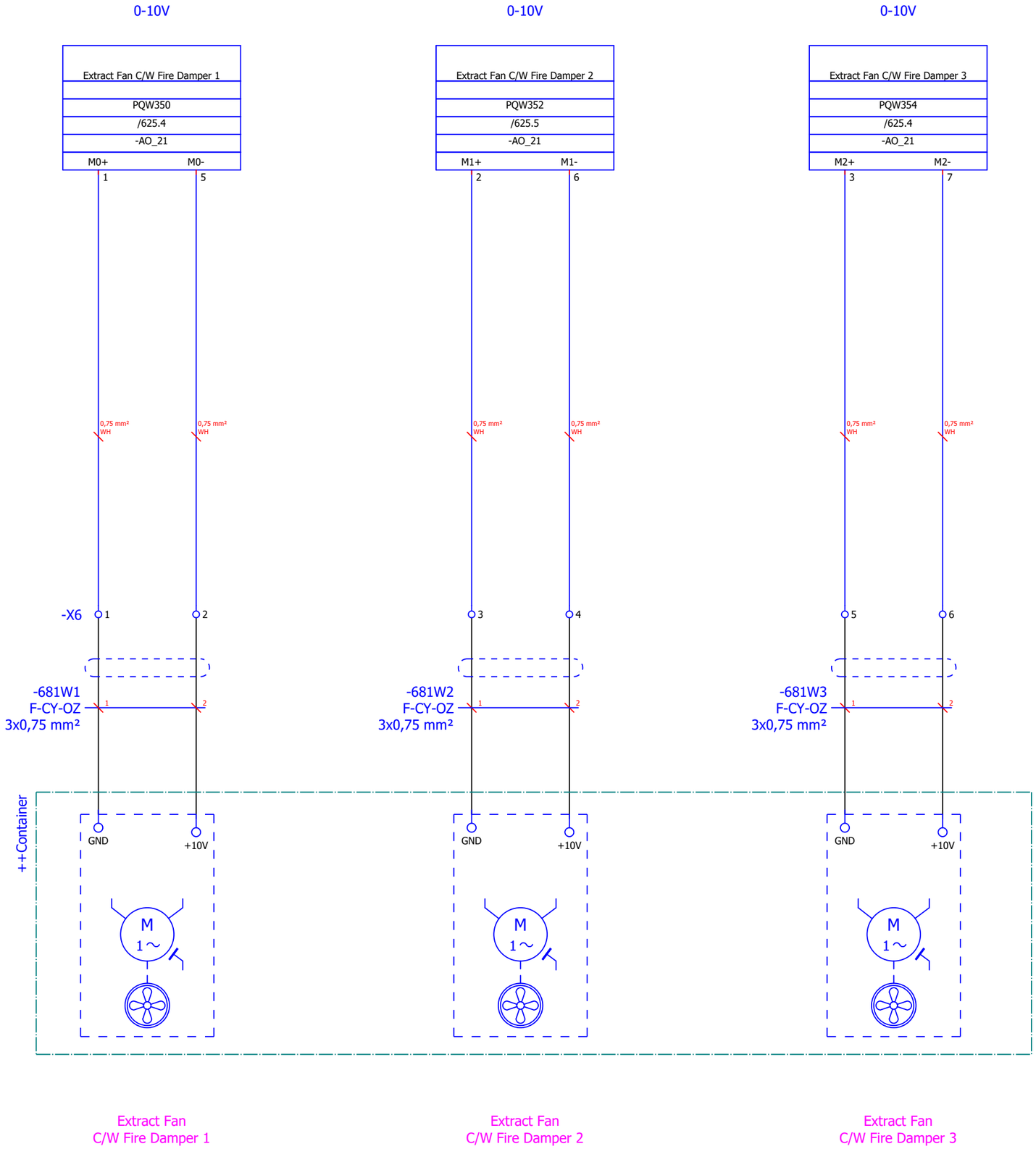
Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 5-8	20240809_V0.7	= UNIT_03 Battery Container 2
Date	18.06.2024							& EFS Circuit diagram
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet page: 680b
Date								+ total: 482



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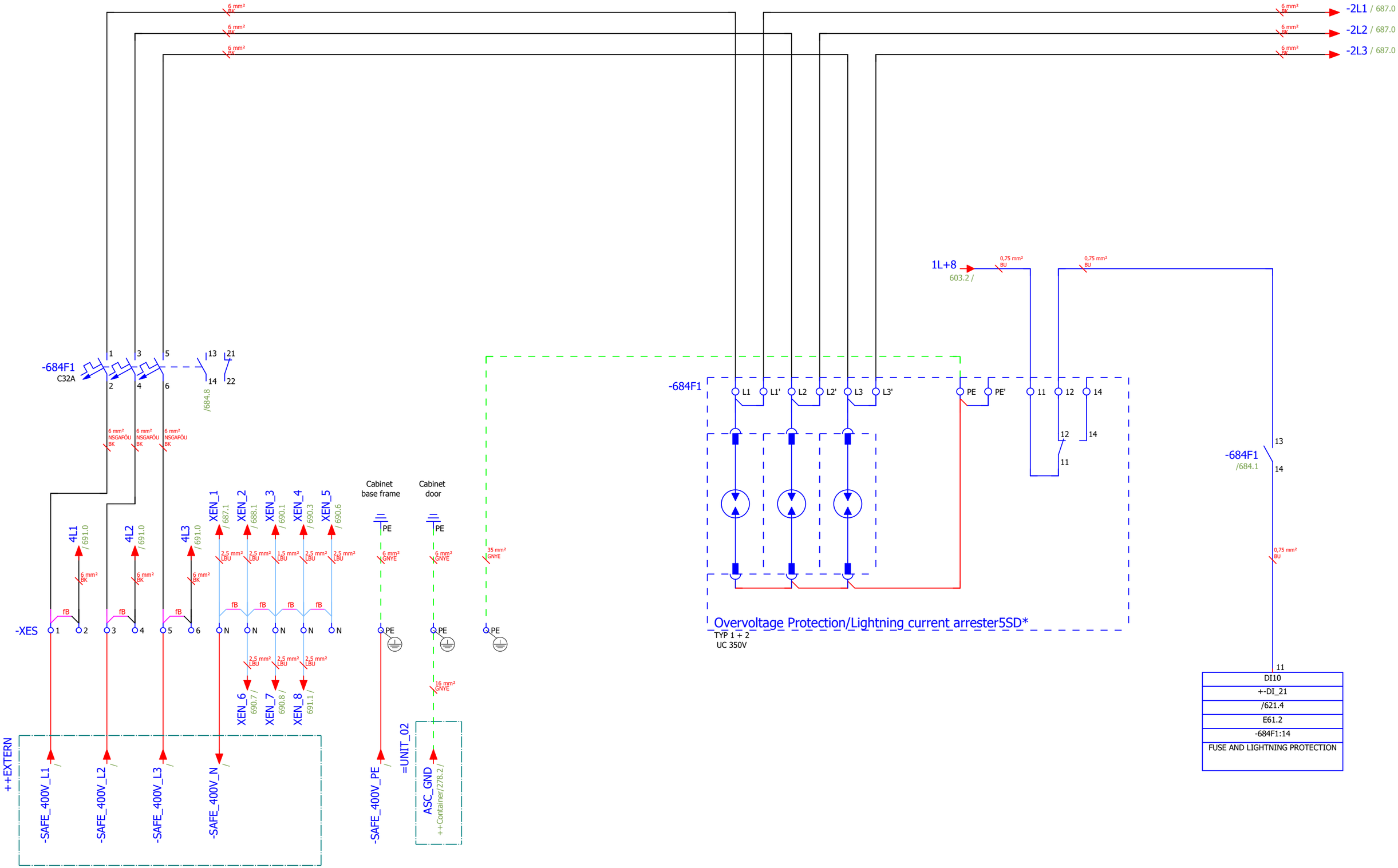
Editor	Freqcon_JD			Statron	FREQCON	STATIONARY GAS DETECTOR BAT 9-11	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 680c
Date								+	total: 482



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684

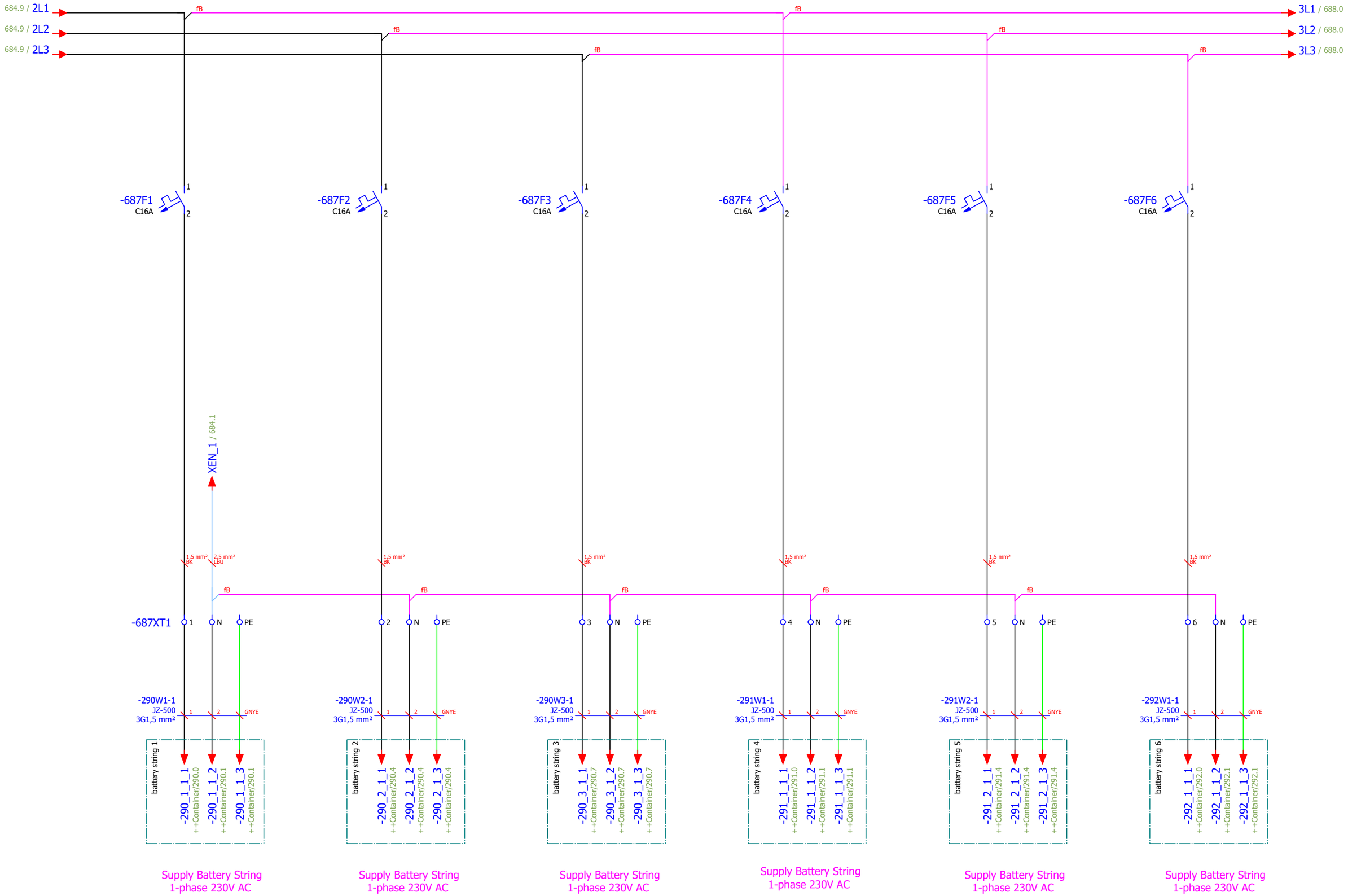
Editor	Freqcon_JD			Statron	FREQCON	EXTRACT FAN FIRE DAMPER	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 681
Date								+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	AUXILIARY SUPPLY 400V AC	20240809_V0.7	= UNIT_03	Battery Container 2	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 684
Date								+		total: 482



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Editor	Freqcon_JD			Statron	FREQCON	AUXILIARY SUPPLY 400V / 230V AC DISTRIBUTION	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 687
Date								+	total: 482

687.9 / 3L1 fB
687.9 / 3L2 fB
687.9 / 3L3 fB

3L1.1 / 690.0
3L2.1 / 690.0
3L3.1 / 690.0

-688F1 C16A 1 2
-688F2 C16A 1 2
-688F3 C16A 1 2
-688F4 C16A 1 2
-688F5 C16A 1 2

XEN_2 / 684.1

1,5 mm² BK
2,5 mm² LBU

-687XT1 7 N PE
-687XT1 8 N PE
-687XT1 9 N PE
-687XT1 10 N PE
-687XT1 11 N PE

-292W2-1 JZ-500 3G1,5 mm² 1 2 GNYE
-292W3-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W1-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W2-1 JZ-500 3G1,5 mm² 1 2 GNYE
-293W3-1 JZ-500 3G1,5 mm² 1 2 GNYE

battery string 7
-292_2_1_1 ++Container/292.4
-292_2_1_2 ++Container/292.4
-292_2_1_3 ++Container/292.4

battery string 8
-292_3_1_1 ++Container/292.7
-292_3_1_2 ++Container/292.7
-292_3_1_3 ++Container/292.7

battery string 9
-293_1_1_1 ++Container/293.0
-293_1_1_2 ++Container/293.1
-293_1_1_3 ++Container/293.1

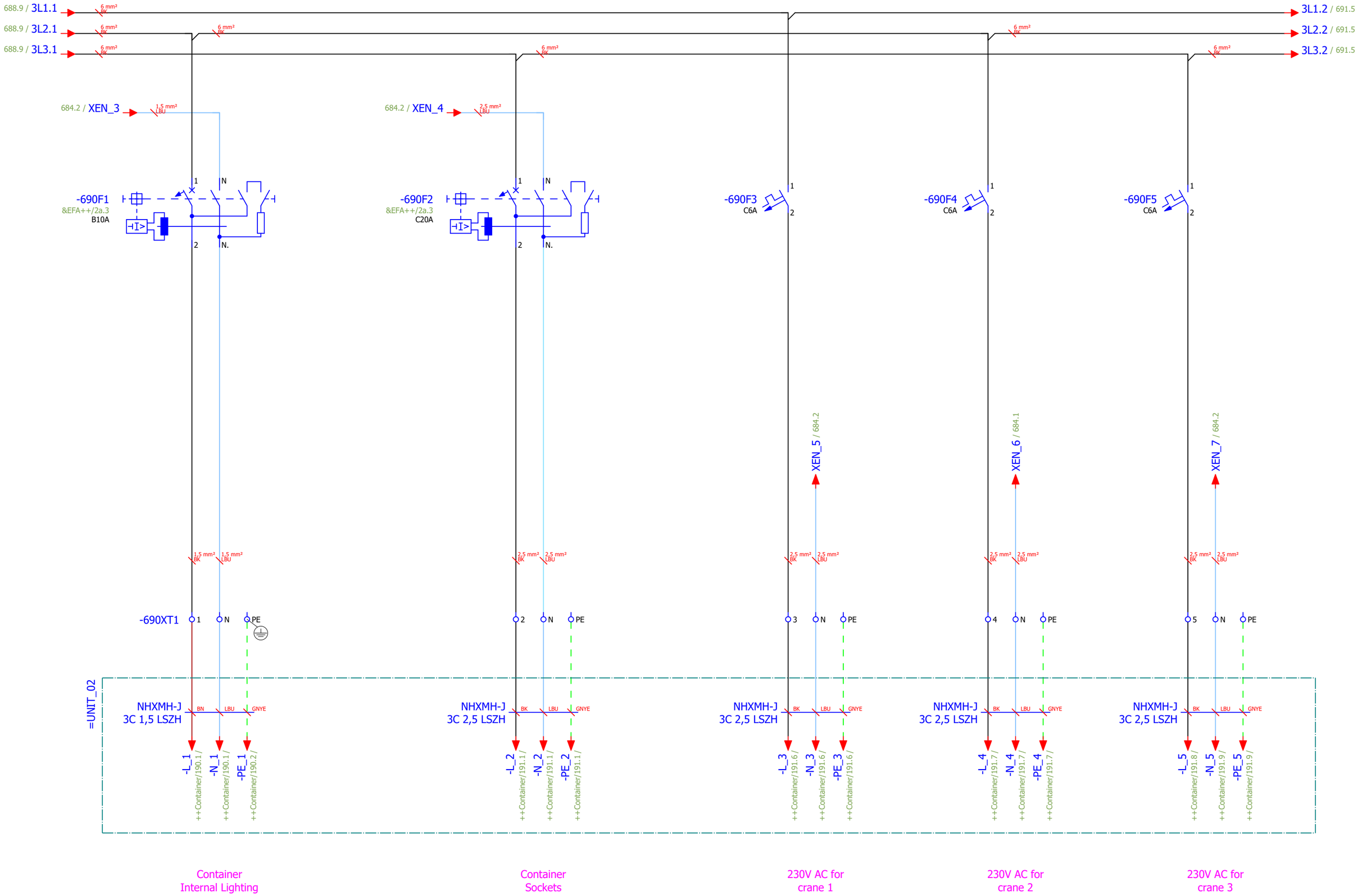
battery string 10
-293_2_1_1 ++Container/293.4
-293_2_1_2 ++Container/293.4
-293_2_1_3 ++Container/293.4

battery string 11
-293_3_1_1 ++Container/293.7
-293_3_1_2 ++Container/293.7
-293_3_1_3 ++Container/293.7

Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC
Supply Battery String 1-phase 230V AC

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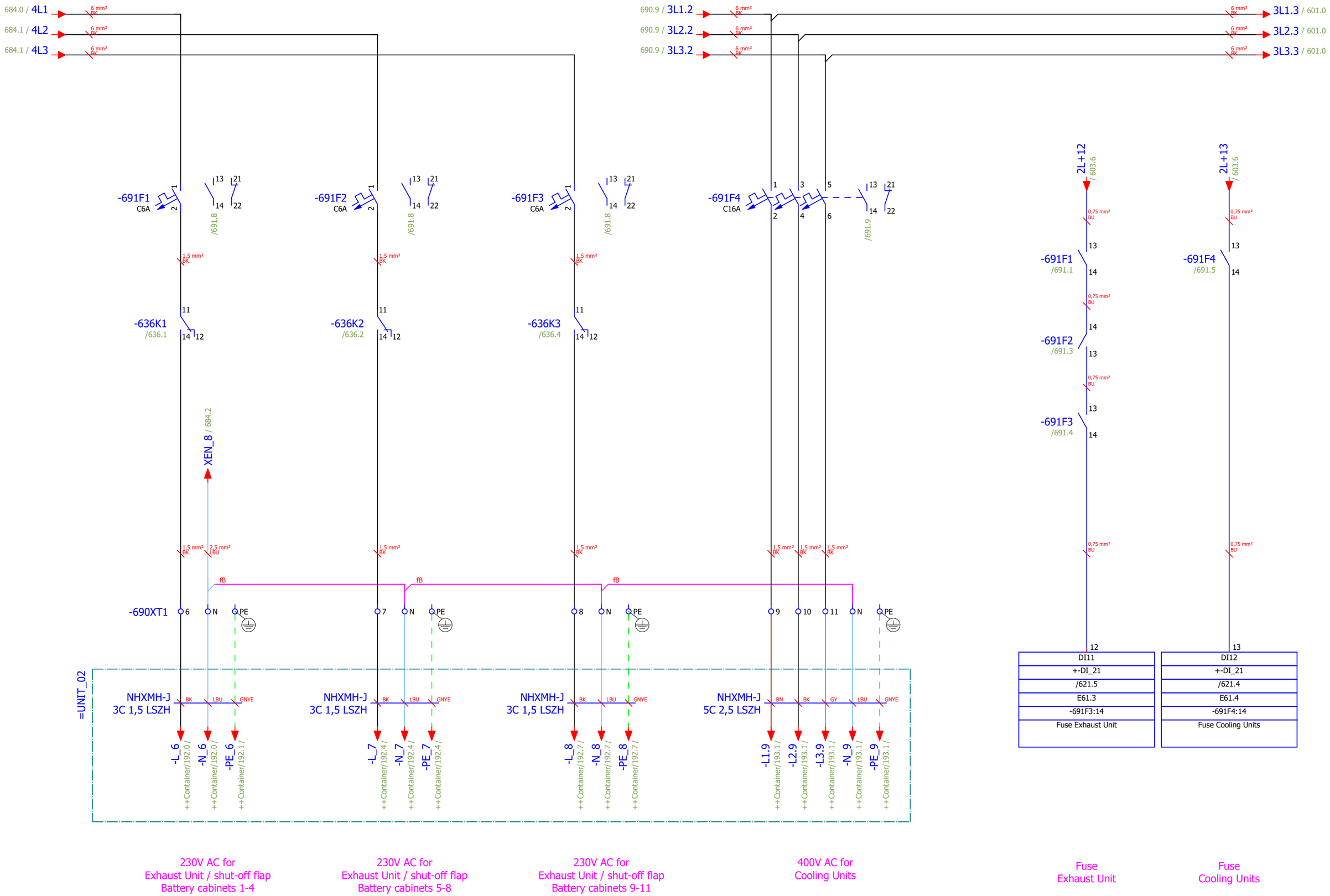
Editor	Freqcon_JD			Statron	FREQCON	AUXILIARY SUPPLY 400V / 230V AC DISTRIBUTION	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore				++ ASC auxillary cabinet	page: 688
Date							10354_23A2007	+	total: 482



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Editor	Freqcon_JD			Statron	FREQCON	CONTAINER COOLING / LIGHTNING	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	18.06.2024							& EFS Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet	page: 690
Date								+	total: 482



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next page: &EPC++Container/1

Editor	Freqcon_JD			Statron	FREQCON	CONTAINER COOLING / LIGHTNING	20240809_V0.7	= UNIT_03	Battery Container 2	
Date	18.06.2024							& EFS	Circuit diagram	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet	page: 691
Date								+		total: 482

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-680U1 &EFS++ASC/680a.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	
-680U2 &EFS++ASC/680b.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	
-680U3 &EFS++ASC/680c.1	1	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321	

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&EFS++ASC/691

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++ASC/1

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-101Q1 &EFS/601.2	1	MOTOR PROTECTION S00, A-release 2.2...3.2 A, N-release 42 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1DA25	Siemens	501432	
-101T1 &EFS/601.2	1	Power supply QUINT-PS/3AC/24DC/20/CO, with protective coating	2320924	Phoenix Contact	501573	
-102G1 &EFS/602.2	1	Uninterruptible power supply QUINT-UPS/ 24DC/ 24DC/20	2320238	Phoenix Contact	501598	
-102G2 &EFS/602.6	1	Energy storage UPS-BAT/VRLA/24DC/12AH	2320322	Phoenix Contact	501229	
-103F1 &EFS/603.2	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	
-103F2 &EFS/603.5	1	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086	
-369XT &EFS/669.5...&EFS/669.8;&EFS/670.5...&EFS/670.8	12	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-369XT &EFS/669.5;&EFS/669.7;&EFS/670.5;&EFS/670.7	4	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	
-369XT &EFS/669.5	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-611A1 &EFS/611.0	1	TREE 16 TX Metall 2GE 14 FE - Unmanaged Gigabit Switch - 16 Ports/	58174	Murrelektronik	10286	
-613T1 &EFS/613.1	1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464	
-613T1 &EFS/613.1	1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395	
-613U1 &EFS/613.3	1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791	
-613U2 &EFS/613.5	1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214	
-620A1 &EFS/620.1	1	SIMATIC ET 200SP, PROFINET Interface-Module, IM 155-6 PN ST, bundle of Server module + Busadapter	6ES7155-6AA01-0BN0	Siemens	501554	
-635K1 &EFS/635a.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K1 &EFS/635a.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-635K2 &EFS/635a.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K2 &EFS/635a.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	

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Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-635K3 &EFS/635a.3	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K3 &EFS/635a.3	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-635K4 &EFS/635a.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K4 &EFS/635a.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-635K5 &EFS/635a.5	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K5 &EFS/635a.5	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-635K6 &EFS/635a.6	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-635K6 &EFS/635a.6	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-635K7 &EFS/635b.7	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K1 &EFS/636.1	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K1 &EFS/636.1	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-636K2 &EFS/636.2	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K2 &EFS/636.2	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-636K3 &EFS/636.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-636K3 &EFS/636.4	1	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803	
-680K1 &EFS/680a.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-680K2 &EFS/680b.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-680K3 &EFS/680c.4	1	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726	
-684F1 &EFS/684.5	1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-684F1 &EFS/684.1	1	CIRCUIT BREAKER 400V, 10KA, 3-POLE, C, 32A	5SY4332-7	Siemens	505272	
-684F1 &EFS/684.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-687F1 &EFS/687.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F1 &EFS/687.1	1	PIN BUS BAR SHOCKHAZARD SAFETY, 16QMM 3 PHASE+HS	5ST3712	Siemens	10274	
-687F1 &EFS/687.1	2	End cap for pin busbars 2 - 3-phase	5ST3750	Siemens	503570	
-687F2 &EFS/687.3	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F3 &EFS/687.4	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F4 &EFS/687.5	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F5 &EFS/687.7	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687F6 &EFS/687.8	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-687XT1 &EFS/687.1;&EFS/687.2;...&EFS/687.7;&EFS/687.8;&EFS/688.1;&EFS/688.2;...&EFS/688.5;&EFS/688.7	11	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-687XT1 &EFS/687.1	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-687XT1 &EFS/687.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-687XT1 &EFS/687.1;&EFS/687.2;&EFS/687.4;&EFS/687.6;...&EFS/687.8;&EFS/688.1;&EFS/688.3;&EFS/688.4;&EFS/688.6;&EFS/688.7	11	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	
-687XT1 &EFS/687.1	1	Plug-in bridge FBS 10-5	3030213	Phoenix Contact	500547	
-687XT1 &EFS/688.1	1	Plug-in bridge FBS 5-5	3030190	Phoenix Contact	500545	
-687XT1 &EFS/687.2;...&EFS/687.4;&EFS/687.6;&EFS/687.7;&EFS/687.8;&EFS/688.2;...&EFS/688.4;&EFS/688.6;&EFS/688.7	11	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-688F1 &EFS/688.1	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F2 &EFS/688.3	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-688F3 &EFS/688.4	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F4 &EFS/688.5	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-688F5 &EFS/688.7	1	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569	
-690F1 &EFS/690.1	1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, B-char, In: 10 A, Un AC: 230 V	5SU1354-6KK10	Siemens	10440	
-690F2 &EFS/690.3	1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, C-char, In: 20 A, Un AC: 230 V	5SU1354-7KK20	Siemens	10441	
-690F3 &EFS/690.5	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690F4 &EFS/690.7	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690F5 &EFS/690.8	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Feed-through terminal block Push-in PT 2,5 BU	3209523	Phoenix Contact	500584	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	35	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	7	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-690XT1 &EFS/690.1;&EFS/691.1;&EFS/691.3...&EFS/691.6	14	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-691F1 &EFS/691.1	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F1 &EFS/691.1	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-691F2 &EFS/691.3	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F2 &EFS/691.3	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-691F3 &EFS/691.4	1	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682	
-691F3 &EFS/691.4	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-691F4 &EFS/691.5	1	CIRCUIT BREAKER 10KA 3POL C16	5SY4316-7	Siemens	503340	X
-691F4 &EFS/691.5	1	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737	
-AI_21 &EFS/620.4	1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054	
-AI_21 &EFS/620.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-AO_21 &EFS/620.4	1	AQ 4XU/I ST	6ES7135-6HD00-0BA1	Siemens	504291	
-AO_21 &EFS/620.4	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-DI_21 &EFS/620.3	1	SIMATIC ET 200SP DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788	
-DI_21 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-DI_22 &EFS/620.3	1	SIMATIC ET 200SP DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788	
-DI_22 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787	
-DO_21 &EFS/620.3	1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397	
-DO_21 &EFS/620.3	1	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786	
-X5.1 &EFS/680a.2...&EFS/680a.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.1 &EFS/680a.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X5.1 &EFS/680a.2	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X5.1 &EFS/680a.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.1 &EFS/680a.2;&EFS/680a.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X5.2 &EFS/680b.2...&EFS/680b.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.2 &EFS/680b.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-X5.2 &EFS/680b.2	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X5.2 &EFS/680b.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.2 &EFS/680b.2;&EFS/680b.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X5.3 &EFS/680c.2...&EFS/680c.5	10	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X5.3 &EFS/680c.2	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X5.3 &EFS/680c.2	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X5.3 &EFS/680c.2	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-X5.3 &EFS/680c.2;&EFS/680c.6	2	Ground modular terminal block Push-in PT 2,5-PE	3209536	Phoenix Contact	500813	
-X6 &EFS/681.1;&EFS/681.3;&EFS/681.5	6	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-X6 &EFS/681.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-X6 &EFS/681.1	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-X6 &EFS/681.1	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	
-XDC1 &EFS/603.2;&EFS/603.3	6	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-XDC1 &EFS/603.2;&EFS/603.3	2	Plug-in bridge FBS 3-5	3030174	Phoenix Contact	503103	
-XDC1 &EFS/603.2	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XDC1 &EFS/603.2	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	
-XDC1 &EFS/603.4	2	Protective conductor double-level terminal block Push-in PTTB 2,5-PE	3210596	Phoenix Contact	501389	
-XDC2 &EFS/603.5...&EFS/603.7	7	Double-level terminal block Push-in PTTB 2,5-PV	3210583	Phoenix Contact	501385	
-XDC2 &EFS/603.5	1	Plug-in bridge FBS 4-5	3030187	Phoenix Contact	500801	

Parts list

Freqcon-mit_FRQ-Nr_ABAS_de_en

Equipment identifier Schematic / position	Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.	subordinated part
-XDC2 &EFS/603.5	1	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XDC2 &EFS/603.5	1	End cover D-PTTB 2,5	3211634	Phoenix Contact	500505	
-XDC2 &EFS/603.6	1	Plug-in bridge FBS 2-5	3030161	Phoenix Contact	505211	
-XDC2 &EFS/603.6	1	Plug-in bridge FBS 3-5	3030174	Phoenix Contact	503103	
-XES &EFS/684.0;&EFS/684.1	6	Feed-through terminal block Push-in PT 6	3211813	Phoenix Contact	501388	
-XES &EFS/684.0;&EFS/684.1	3	Plug-in bridge FBS 2-8	3030284	Phoenix Contact	502068	
-XES &EFS/684.0	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XES &EFS/684.0	1	End cover D-PT 6	3212044	Phoenix Contact	500503	
-XES &EFS/684.1;&EFS/684.2	5	Feed-through terminal block Push-in PT 6 BU	3211819	Phoenix Contact	500585	
-XES &EFS/684.1	1	Plug-in bridge FBS 5-8	3030310	Phoenix Contact	504375	
-XES &EFS/684.2;&EFS/684.3	3	Ground modular terminal block Push-in PT 6-PE	3211822	Phoenix Contact	500725	
-XT &EFS/635b.1...&EFS/635b.5;&EFS/635b.7	14	Feed-through terminal block Push-in PT 2,5	3209510	Phoenix Contact	500583	
-XT &EFS/635b.1	1	End cover D-ST 2,5	3030417	Phoenix Contact	500506	
-XT &EFS/635b.1	2	End clamp CLIPFIX 35-5	3022276	Phoenix Contact	500588	
-XT &EFS/635b.1	1	Terminal strip marker carrier KLM 3	0811969	Phoenix Contact	501402	

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0	1	2	3	4	5	6	7	8	9

Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
3	Polytron 8000 Series Customized 4-20/HART mit Relais	8344800	Dräger	509321

Editor	Freqcon_JD			Statron	FREQCON	SUMMARIZED PARTS LIST	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	02.07.2024							& EPA Summarized part list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 1
Date								+	total: 482

Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
1	TREE 16 TX Metall 2GE 14 FE - Unmanaged Gigabit Switch - 16 Ports/	58174	Murrelektronik	10286
1	Network isolators - FL ISOLATOR 100-RJ/RJ	2313931	Phoenix Contact	501464
1	Uninterruptible power supply QUINT-UPS/ 24DC/ 24DC/20	2320238	Phoenix Contact	501598
1	Energy storage UPS-BAT/VRLA/24DC/12AH	2320322	Phoenix Contact	501229
1	Power supply QUINT-PS/3AC/24DC/20/CO, with protective coating	2320924	Phoenix Contact	501573
1	Surge protection device DT-LAN-CAT.6+	2881007	Phoenix Contact	504791
1	Patch panel, connection field: one RJ45 socket on 8 spring-cage connection terminals	2901642	Phoenix Contact	10214
13	Relay Module RIF-1-RPT-LDP-24DC/2X21AU	2903330	Phoenix Contact	500726
9	Plug-in bridge FBS 2-6 BU	3036932	Phoenix Contact	500803
1	0,5m Cat.6 PiMF-Patchcabel, green	PATCH-C6 05 GN	reichelt elektronik GmbH & Co. KG	504395
1	MOTOR PROTECTION S00, A-release 2.2...3.2 A, N-release 42 A, Spring-type terminal, auxiliary switches 1NO+1NC	3RV2011-1DA25	Siemens	501432
1	Combination arrester type 1+2, UC 350V AC, 3-pole, FM, for TNC systems	5SD7443-1	Siemens	504070
5	AUXILIARY SWITCH 1NO+1NC for 5SL, 5SY, 5SP	5ST3010	Siemens	500737
1	PIN BUS BAR SHOCKHAZARD SAFETY, 16QMM 3 PHASE+HS	5ST3712	Siemens	10274
2	End cap for pin busbars 2 - 3-phase	5ST3750	Siemens	503570
1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, B-char, In: 10 A, Un AC: 230 V	5SU1354-6KK10	Siemens	10440
1	RCBO elm, 10 kA, 1P+N, type A, 30 mA, C-char, In: 20 A, Un AC: 230 V	5SU1354-7KK20	Siemens	10441
2	Device circuit breaker 230VAC / 60VDC, 3kA, 1-pole, AS, F2, 10A	5SY1710-4	Siemens	10086

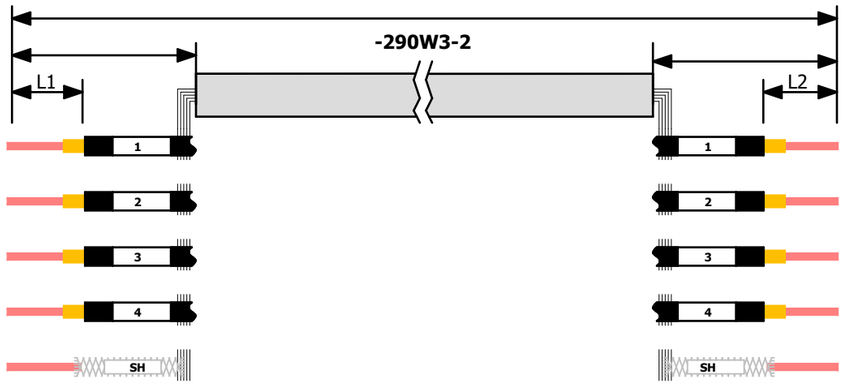
Summarized parts list

Freqcon_ABAS_de_en

Amount	Designation	Order number	Manufacturer / Supplier	Freqcon ERP No.
6	CIRCUIT BREAKER 10KA 1POL C6	5SY4106-7	Siemens	500682
11	CIRCUIT BREAKER 230/400V 10KA 1POL C16	5SY4116-7	Siemens	503569
1	CIRCUIT BREAKER 400V, 10KA, 3-POLE, C, 32A	5SY4332-7	Siemens	505272
2	SIMATIC ET 200SP DI 16x 24V DC ST, PU 1	6ES7131-6BH01-0BA0	Siemens	500788
1	DQ 16X24V DC/0,5A ST	6ES7132-6BH01-0BA0	Siemens	504397
1	ET 200SP, AI 4XU/I 2-WIRE ST, PU 1	6ES7134-6HD01-0BA1	Siemens	505054
1	AQ 4XU/I ST	6ES7135-6HD00-0BA1	Siemens	504291
1	SIMATIC ET 200SP, PROFINET Interface-Module, IM 155-6 PN ST, bundle of Server module + Busadapter	6ES7155-6AA01-0BN0	Siemens	501554
1	BASEUNIT TYPE A0, BU15-P16+A0+2B, bridged to the left	6ES7193-6BP00-0BA0	Siemens	500787
4	BASEUNIT TYPE A0, BU15-P16+A0+2D	6ES7193-6BP00-0DA0	Siemens	500786

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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

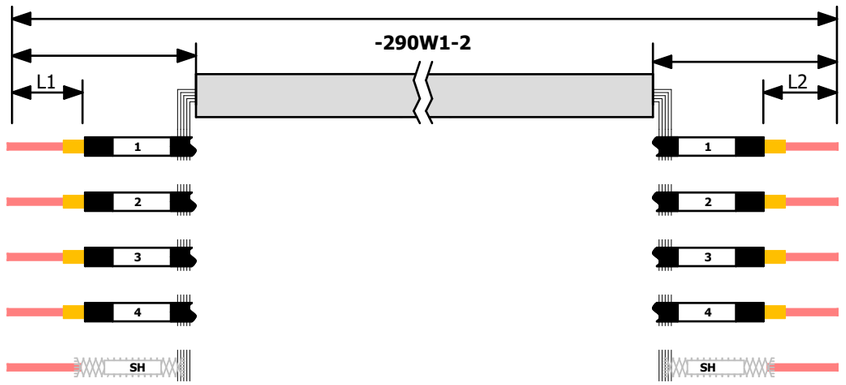


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	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:10	
			++ASC-369XT:1	
			++ASC-369XT:4	

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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

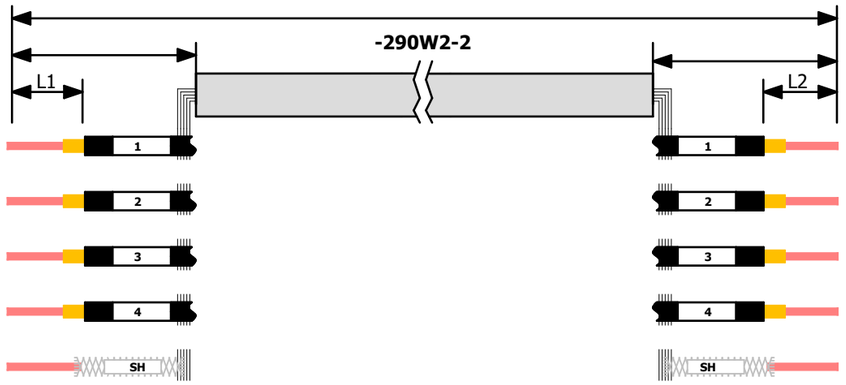


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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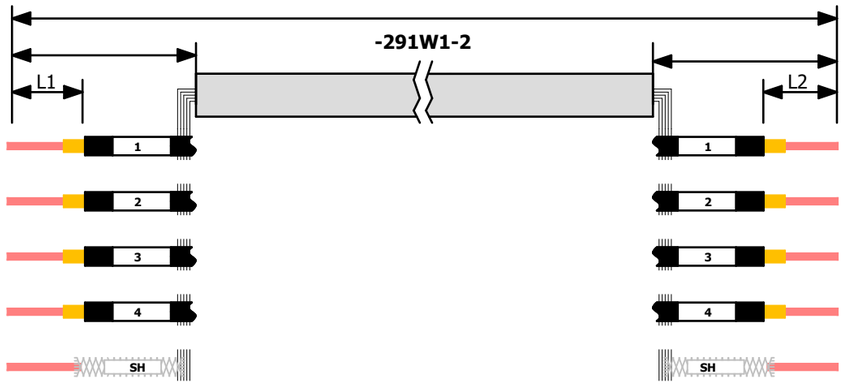
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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

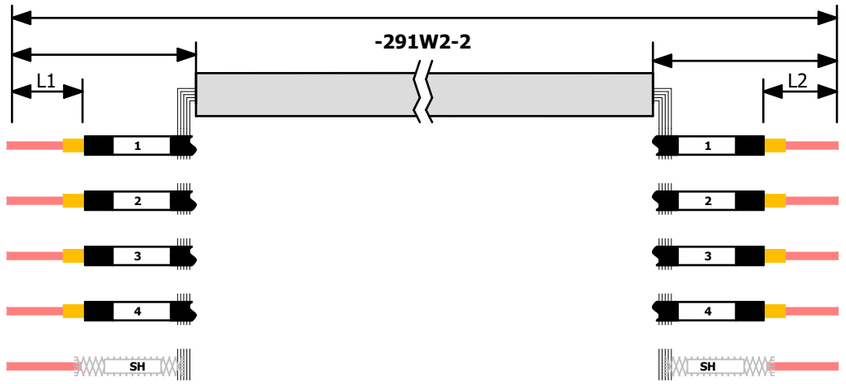


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
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	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

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Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

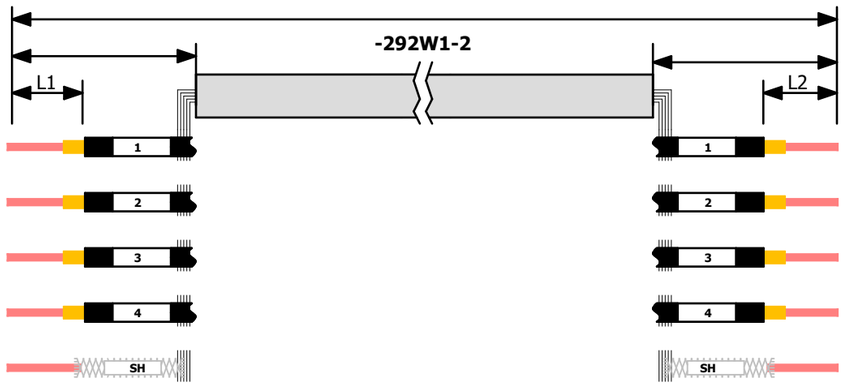


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
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			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

Cable name =UNIT_03++Container+-292W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

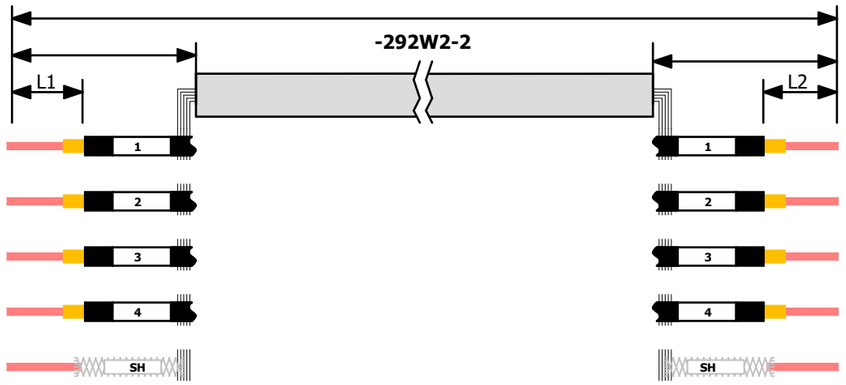
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:8	
			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

previous page: 1
next page: 3

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++Container+-292W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

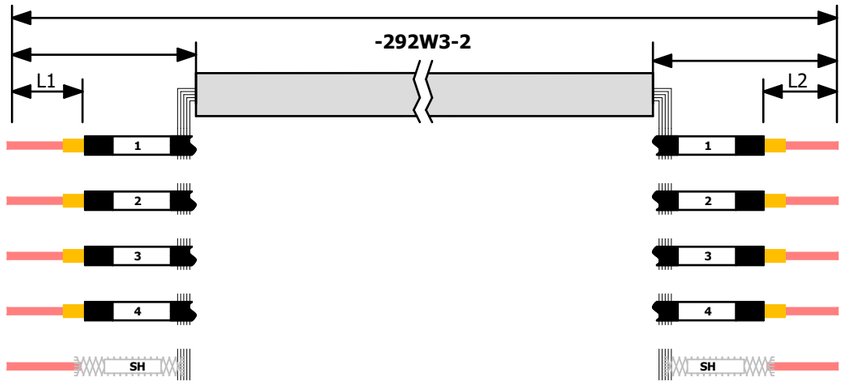


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_03++Container+-292W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

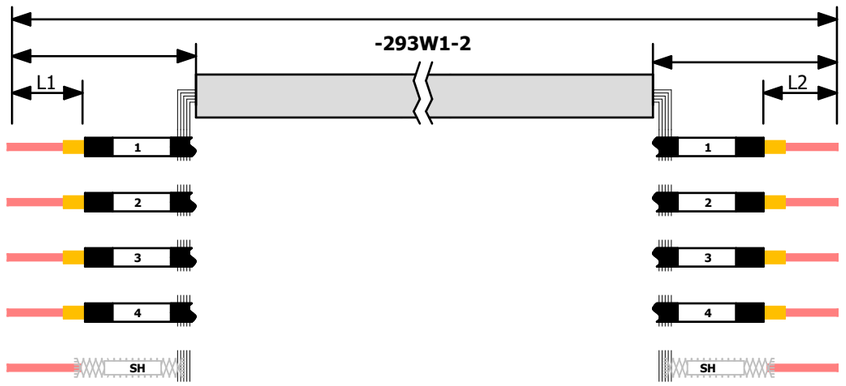


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_03++Container+-293W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

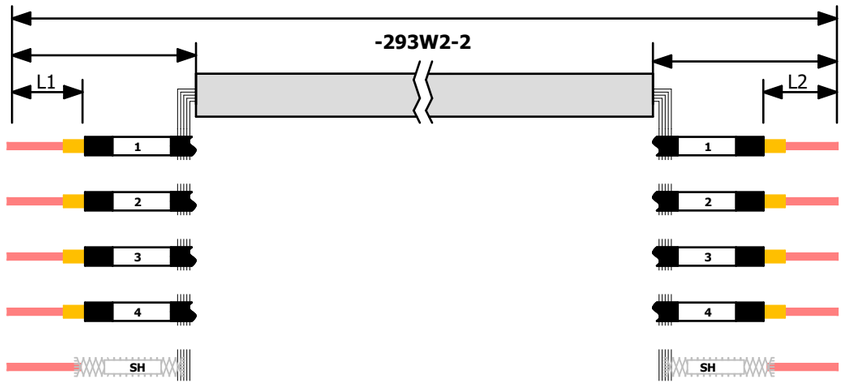
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

previous page: 2
next page: 4

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++Container+-293W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560

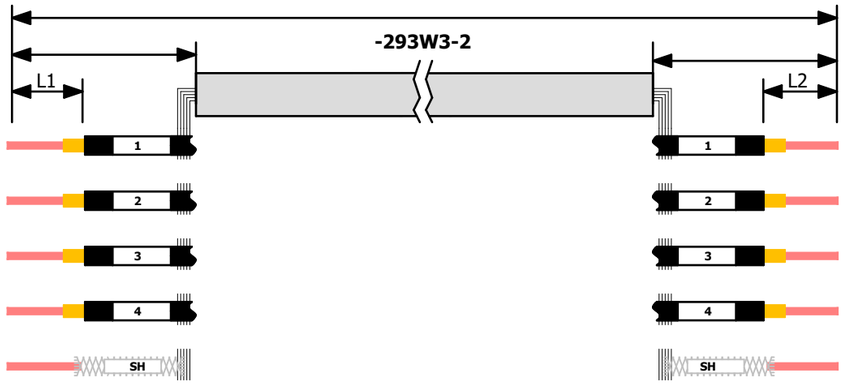


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:9	
			++ASC-369XT:12	
			++ASC-369XT:3	
			++ASC-369XT:6	

Cable name =UNIT_03++Container+-293W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-570XT:1			
	-570XT:2			
	-570XT:3			
	-570XT:4			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-369XT:8	
			++ASC-369XT:11	
			++ASC-369XT:2	
			++ASC-369XT:5	

Cable name =UNIT_03++Container+-290W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:1	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 4
Date								+	total: 482

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++Container+-290W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:2	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-290W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

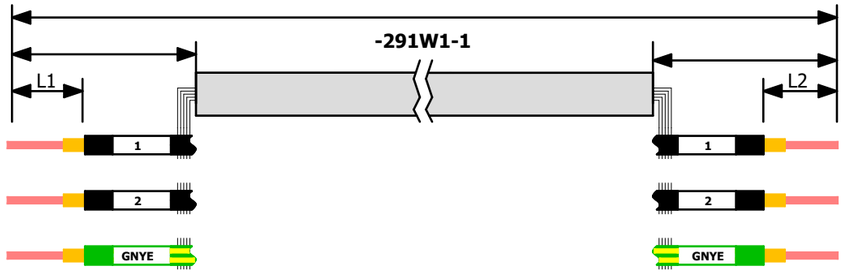


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:3	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-291W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

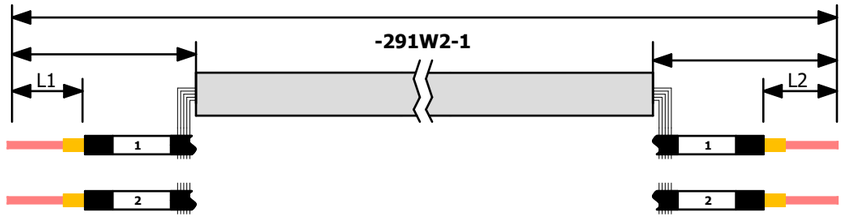


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:4	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			

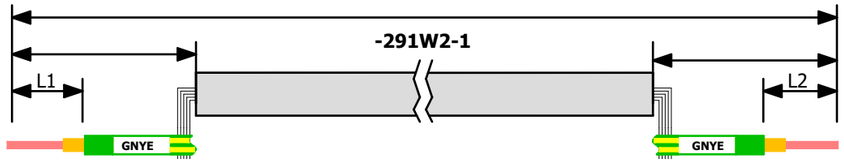
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:5	
			++ASC-687XT1:N	

previous page: 4
next page: 6

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++Container+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

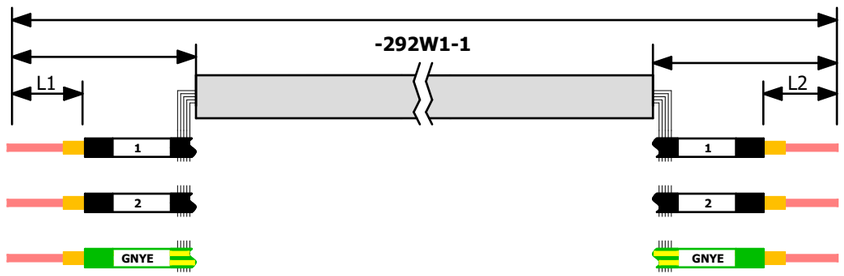


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

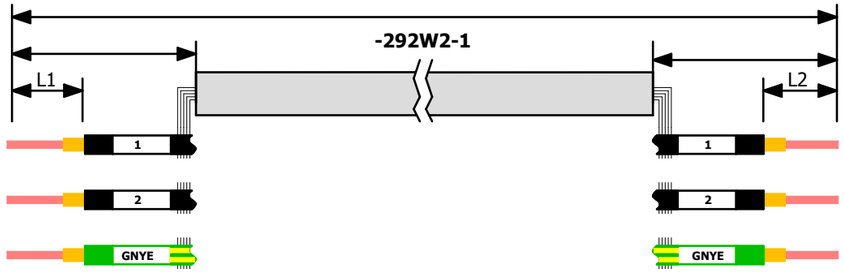


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:6	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-292W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

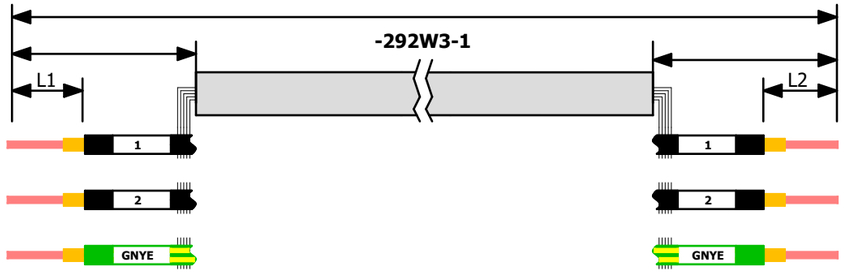


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:7	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-292W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:8	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

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next page: 7

FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++Container+-293W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:9	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-293W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

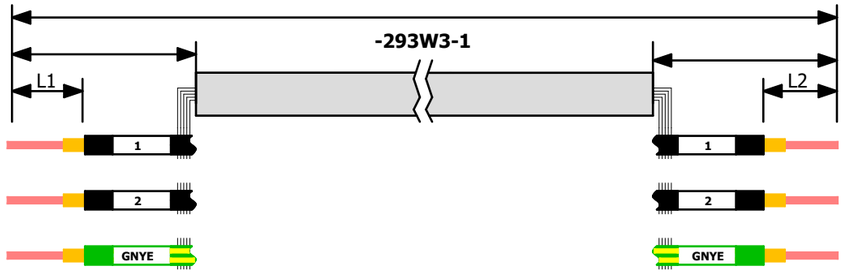


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:10	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-293W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts
Order number

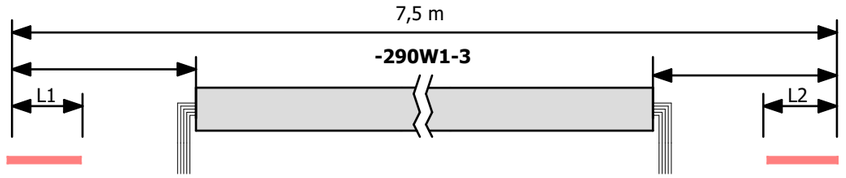


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-XE:1			
	-XE:N			
	-XE:PE			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-687XT1:11	
			++ASC-687XT1:N	
			++ASC-687XT1:PE	

Cable name =UNIT_03++Container+-290W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

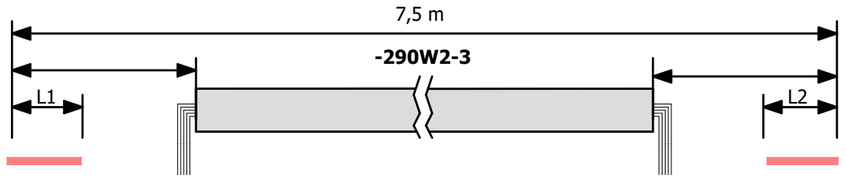
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X1:1-16	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	02.07.2024							& EMB Cable list	
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 7
Date								+	total: 482

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Cable name =UNIT_03++Container+-290W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

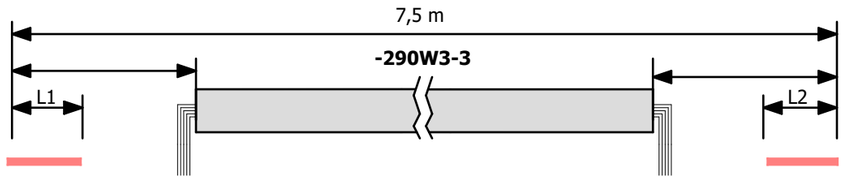


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X2:1-16	

Cable name =UNIT_03++Container+-290W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

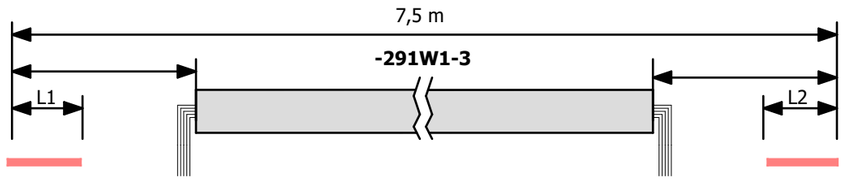


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X3:1-16	

Cable name =UNIT_03++Container+-291W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

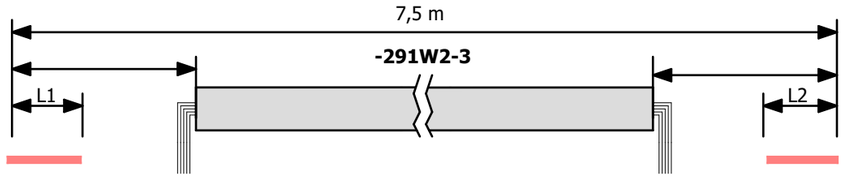


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X4:1-16	

Cable name =UNIT_03++Container+-291W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN

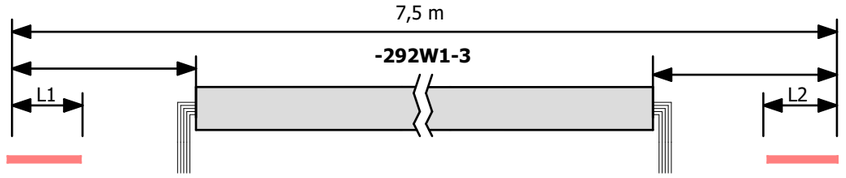


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X5:1-16	

Cable name =UNIT_03++Container+-292W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

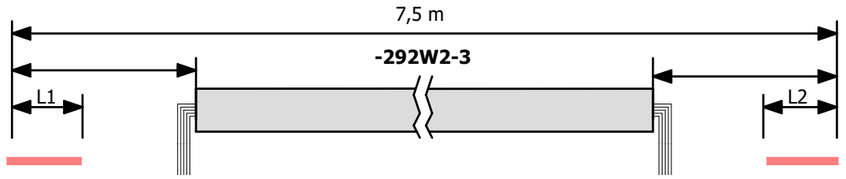
L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			++ASC-611A1:X6:1-16	

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ Container	page: 8
Date								+	total: 482

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Cable name =UNIT_03++Container+-292W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

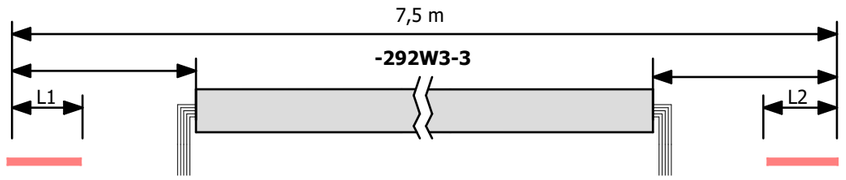
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X7:1-16	

Cable name =UNIT_03++Container+-292W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

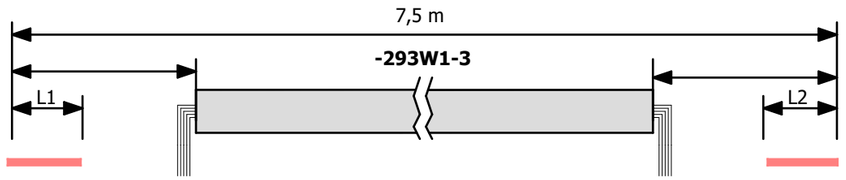
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X8:1-16	

Cable name =UNIT_03++Container+-293W1-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

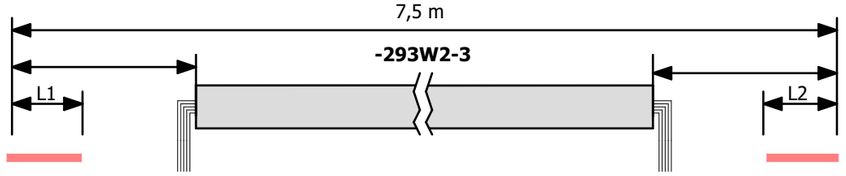
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X9:1-16	

Cable name =UNIT_03++Container+-293W2-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

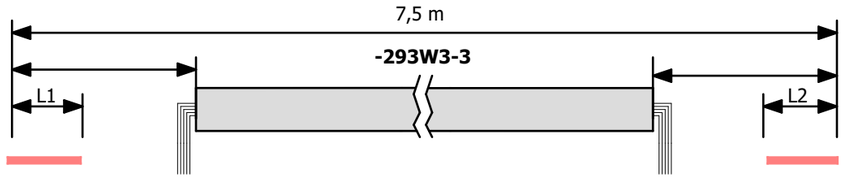
Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X2:1-16	

Cable name =UNIT_03++Container+-293W3-3
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 7,5 GN
Order number PATCH-C6 7,5 GN



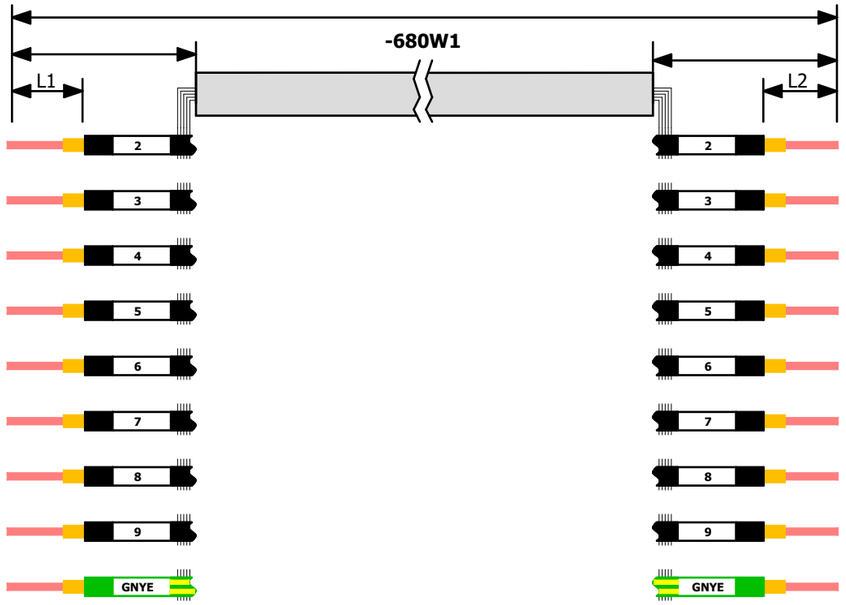
Mounting location:	Source	Function text source	wire end handling	L1 [mm]	L2 [mm]	wire end handling	Function text target	Target	Mounting location:
								++ASC-611A1:X3:1-16	

previous page: 8
next page: ++ASC/1

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Cable name =UNIT_03++ASC+-680W1
Cable type F-CY-JZ 10G0,75 mm²
Free conductors

Cable parts
Order number

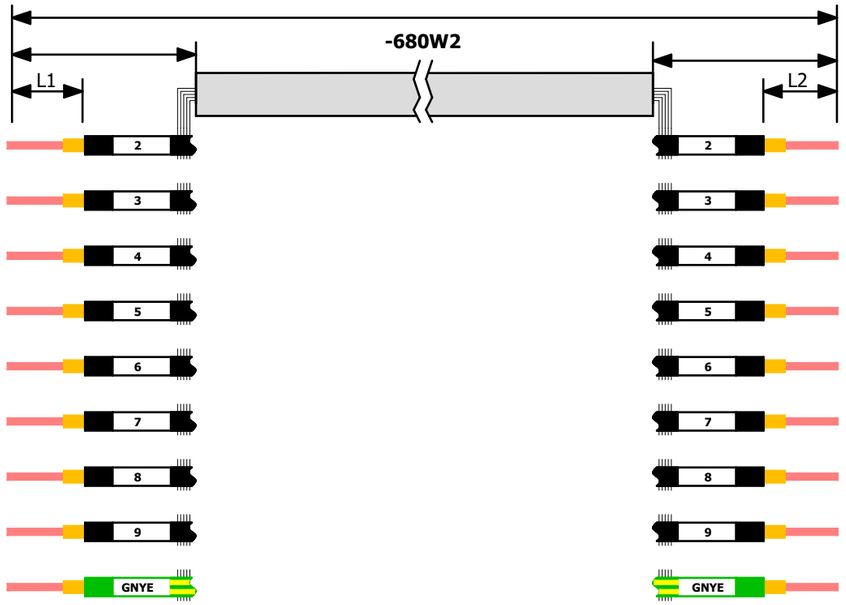


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.1:2	gas concentration BAT 1-4		
	-X5.1:3	=		
	-X5.1:5	=		
	-X5.1:6	=		
	-X5.1:7	=		
	-X5.1:8	=		
	-X5.1:9	=		
	-X5.1:10	=		
	-X5.1:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U1-X1:2	
		=	++Container-680U1-X1:4	
		=	++Container-680U1-X2:1	
		=	++Container-680U1-X2:2	
		=	++Container-680U1-X2:4	
		=	++Container-680U1-X2:5	
		=	++Container-680U1-X2:7	
		=	++Container-680U1-X2:8	
		=	++Container-680U1-X1:5	

Cable name =UNIT_03++ASC+-680W2
Cable type F-CY-JZ 10G0,75 mm²
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.2:2	gas concentration BAT 5-8		
	-X5.2:3	=		
	-X5.2:5	=		
	-X5.2:6	=		
	-X5.2:7	=		
	-X5.2:8	=		
	-X5.2:9	=		
	-X5.2:10	=		
	-X5.2:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U2-X1:2	
		=	++Container-680U2-X1:4	
		=	++Container-680U2-X2:1	
		=	++Container-680U2-X2:2	
		=	++Container-680U2-X2:4	
		=	++Container-680U2-X2:5	
		=	++Container-680U2-X2:7	
		=	++Container-680U2-X2:8	
		=	++Container-680U2-X1:5	

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++Container/9

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2

Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

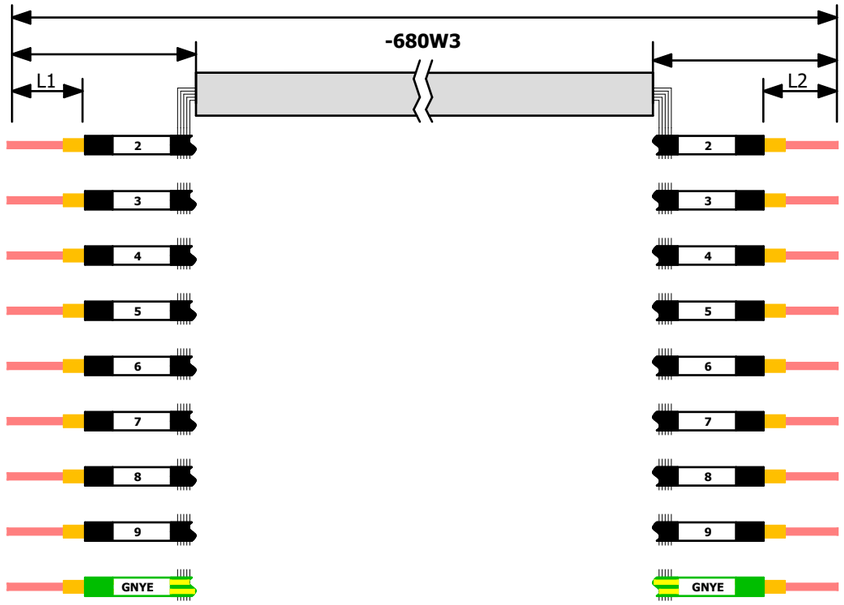
page: 1
total: 482

FRQ_Kabelplan_04_gro8_de_en

0	1	2	3	4	5	6	7	8	9

Cable name =UNIT_03++ASC+-680W3
Cable type F-CY-JZ 10G0,75 mm²
Free conductors 9

Cable parts
Order number

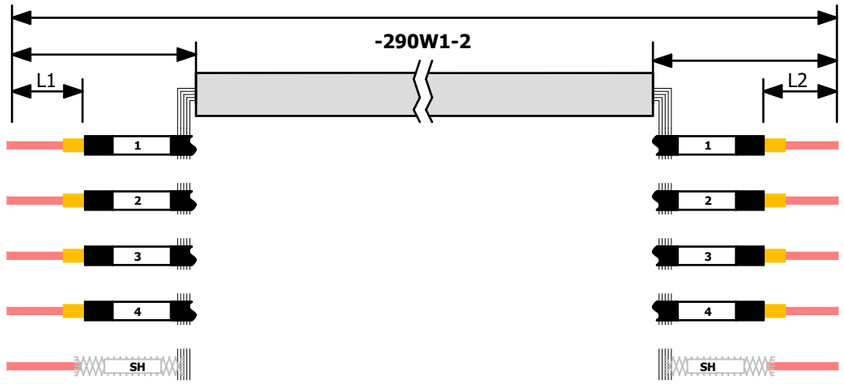


Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-X5.3:2	gas concentration BAT 9-11		
	-X5.3:3	=		
	-X5.3:5	=		
	-X5.3:6	=		
	-X5.3:7	=		
	-X5.3:8	=		
	-X5.3:9	=		
	-X5.3:10	=		
	-X5.3:PE	=		

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
		gas concentration	++Container-680U3-X1:2	
		=	++Container-680U3-X1:4	
		=	++Container-680U3-X2:1	
		=	++Container-680U3-X2:2	
		=	++Container-680U3-X2:4	
		=	++Container-680U3-X2:5	
		=	++Container-680U3-X2:7	
		=	++Container-680U3-X2:8	
		=	++Container-680U3-X1:5	

Cable name =UNIT_03++ASC+-290W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

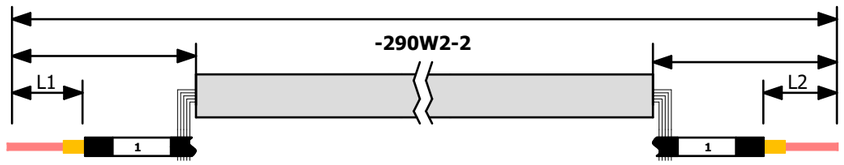


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-290W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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FRQ_Kabelplan_04_gro8_de_en

Cable name =UNIT_03++ASC+-290W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

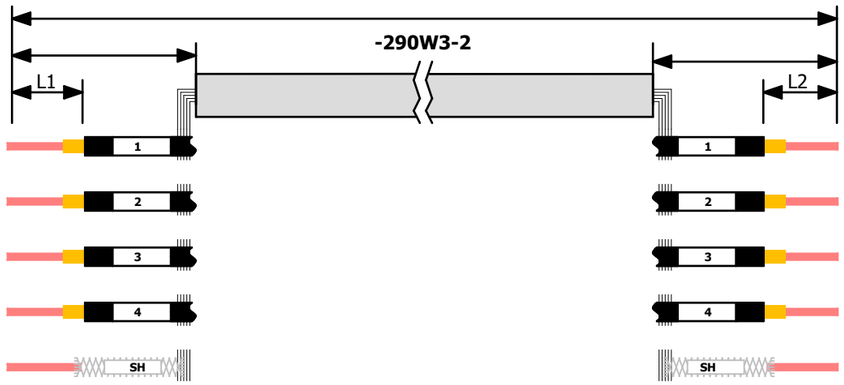


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-290W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

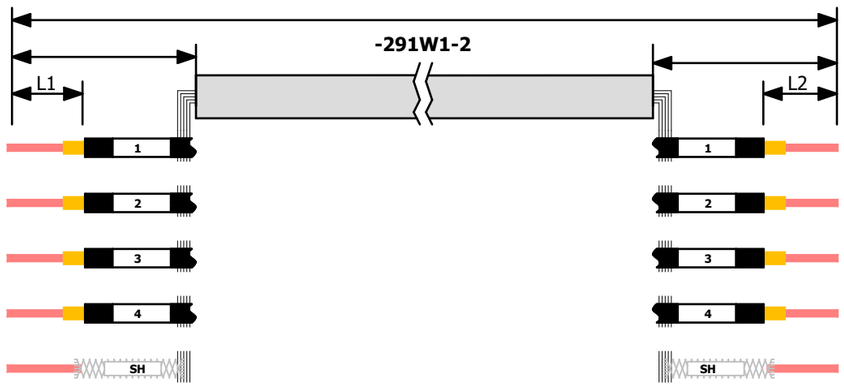


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-291W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



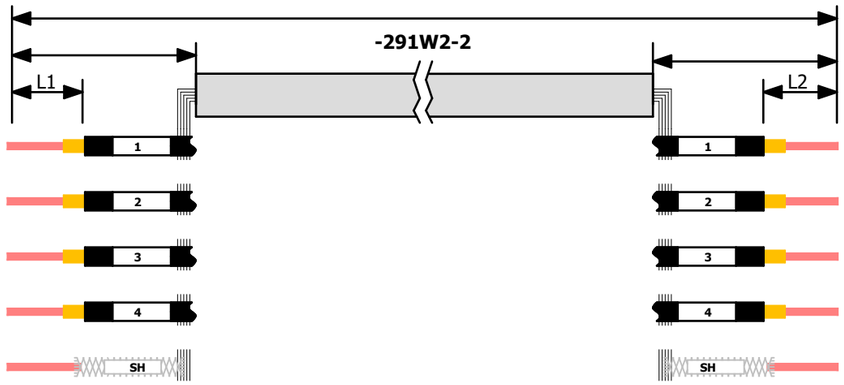
L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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Cable name =UNIT_03++ASC+-291W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

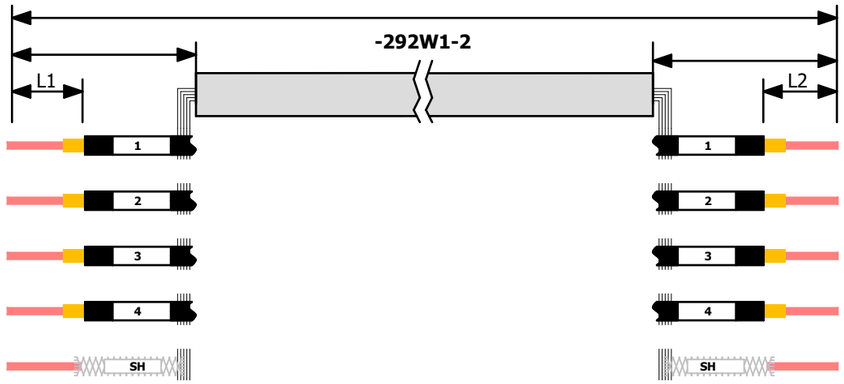


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-292W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

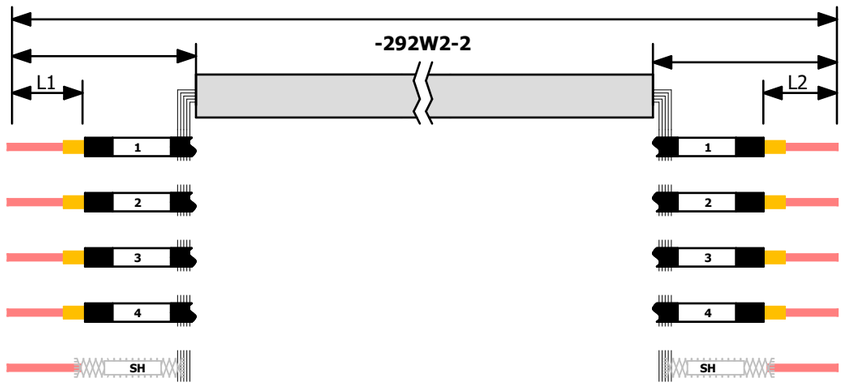


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-292W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

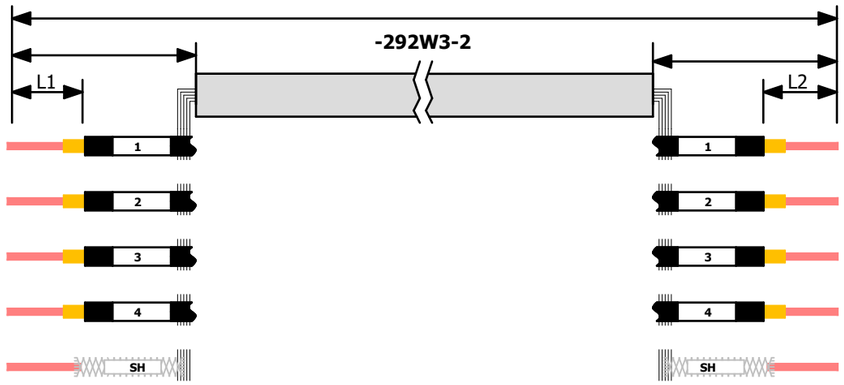
L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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Cable name =UNIT_03++ASC+-292W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

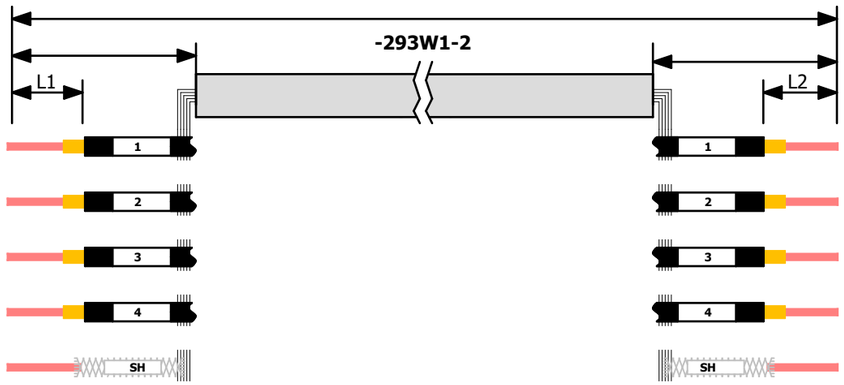


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-293W1-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

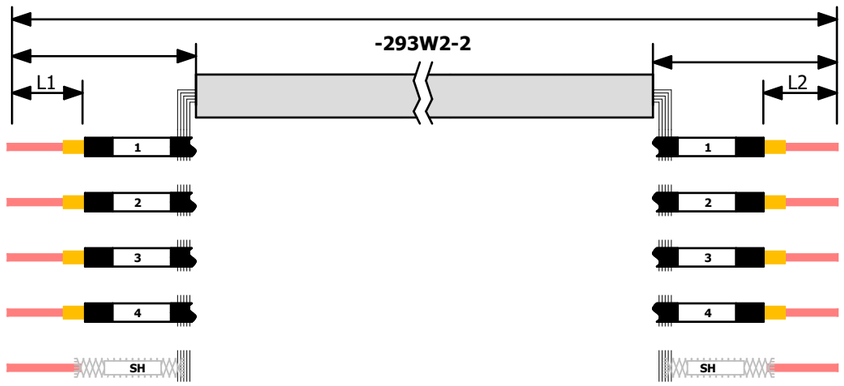


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-293W2-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

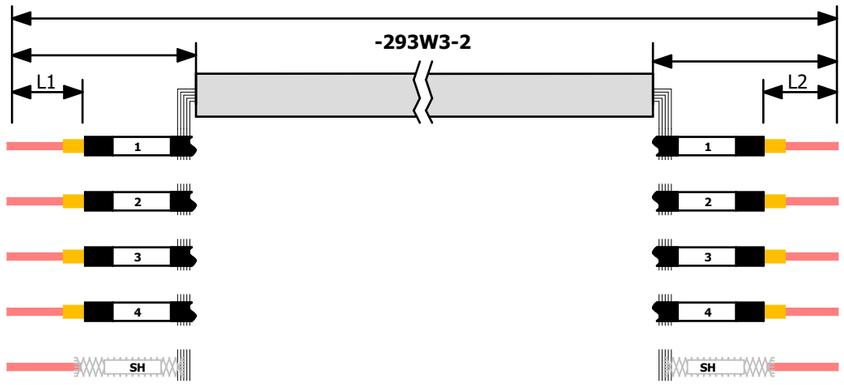
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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++ASC+-293W3-2
Cable type F-CY-OZ 4x0,75 mm²
Free conductors 4

Cable parts HELU.16560
Order number 16560

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

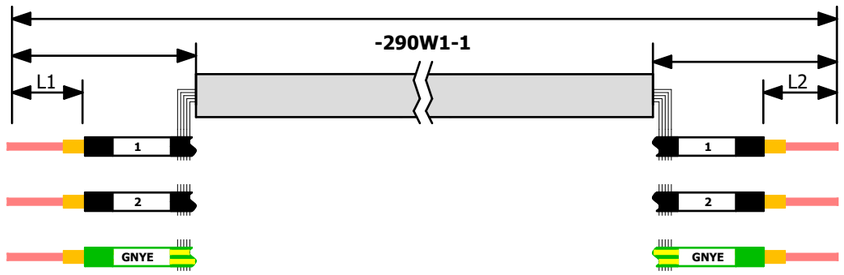


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-290W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

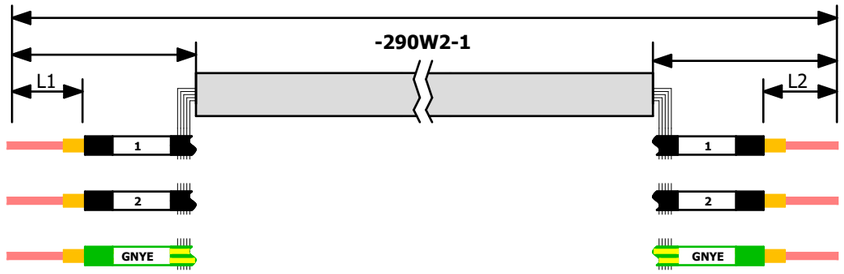


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-290W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++ASC+-290W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

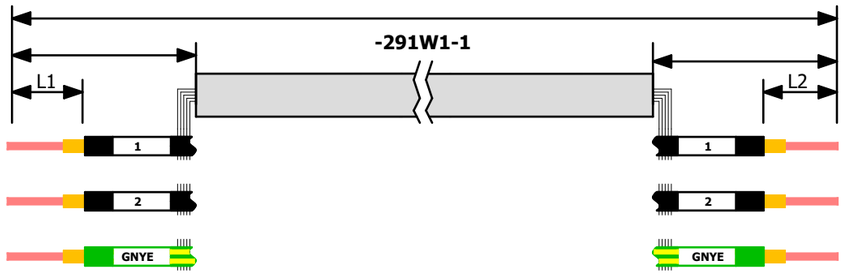


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-291W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

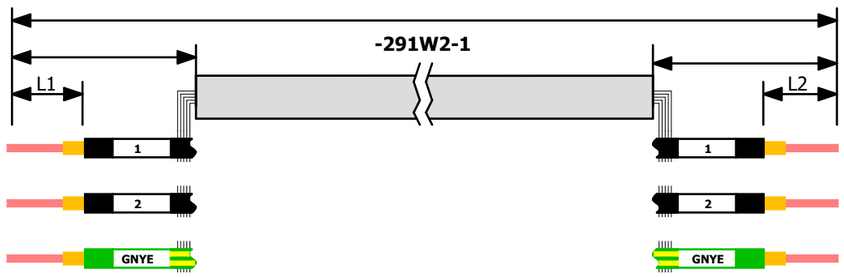


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-291W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

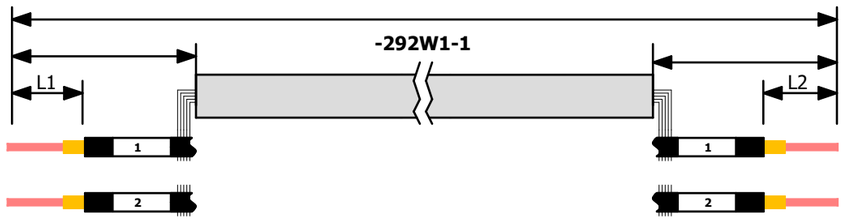


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

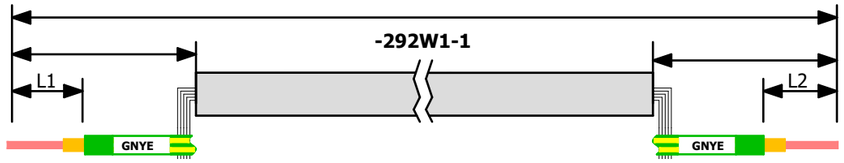
previous page: 6

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FRQ_Kabelplan_04_groß_de_en

Cable name =UNIT_03++ASC+-292W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

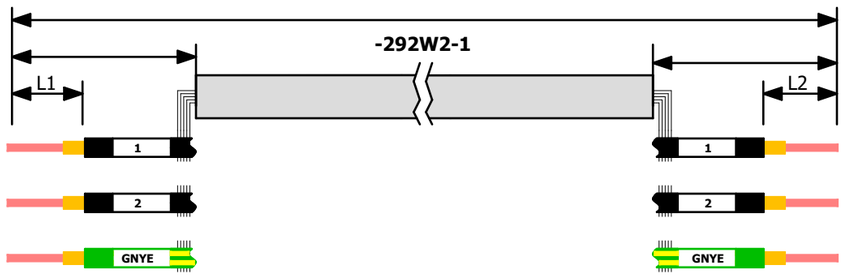


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-292W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

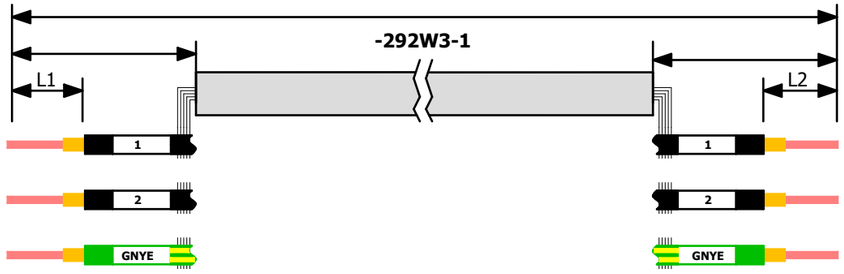


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-292W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091

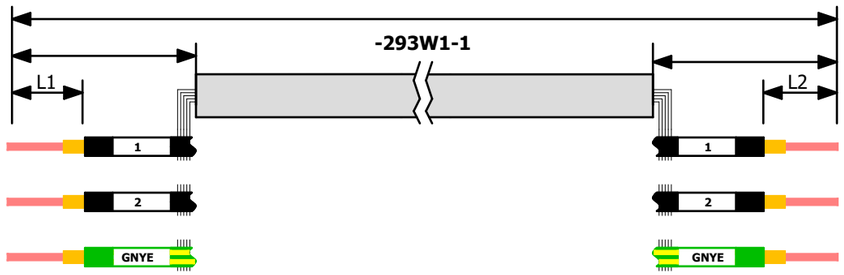


Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-293W1-1
Cable type JZ-500 3G1,5 mm²
Free conductors 3

Cable parts HELU.10091
Order number 10091



Mounting location:	Source	Function text source	wire end handling	L1 [mm]

L2 [mm]	wire end handling	Function text target	Target	Mounting location:

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Cable name =UNIT_03++ASC+-293W2-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]



L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-293W3-1
Cable type JZ-500 3G1,5 mm²
Free conductors

Cable parts HELU.10091
Order number 10091

Mounting location:	Source	Function text source	wire end handling	L1 [mm]

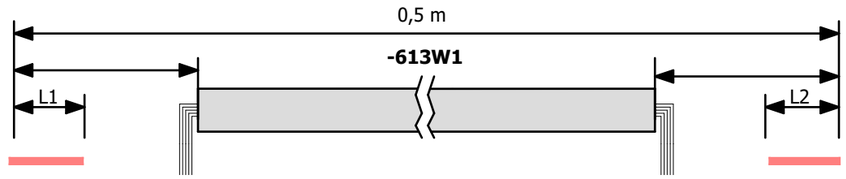


L2 [mm]	wire end handling	Function text target	Target	Mounting location:

Cable name =UNIT_03++ASC+-613W1
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-613T1:7			

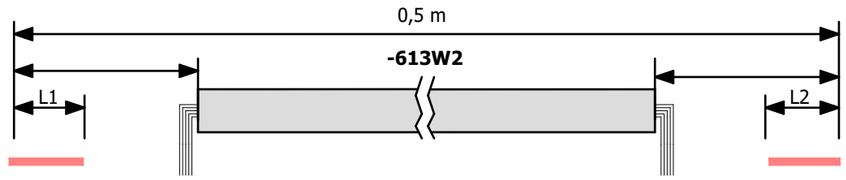


L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-613U1:OUT	

Cable name =UNIT_03++ASC+-613W2
Cable type Patch cable Cat.6 4x2x0,25 mm²
Free conductors

Cable parts REI.PATCH-C6 05 GN
Order number PATCH-C6 05 GN

Mounting location:	Source	Function text source	wire end handling	L1 [mm]
	-613U1:IN			



L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-613U2:8	

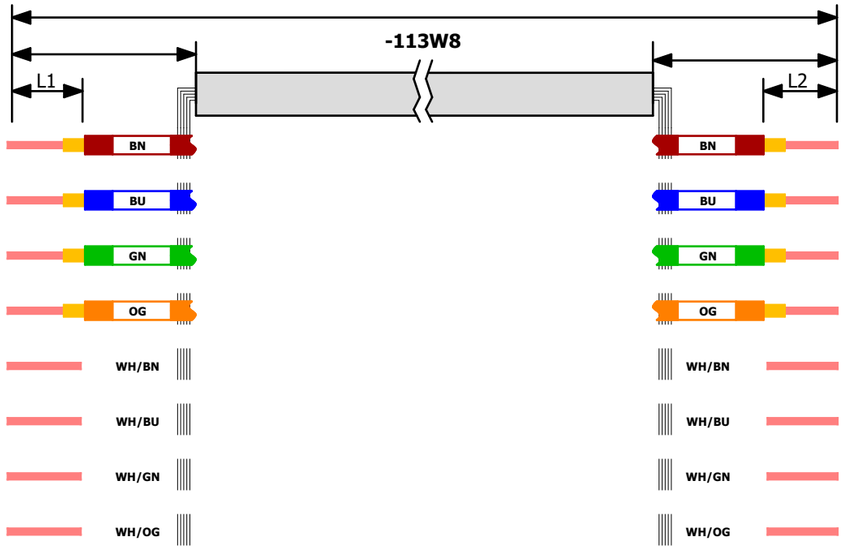
Editor	Freqcon_JD			Statron	FREQCON	CABEL LIST	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024							& EMB	Cable list
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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Cable name =UNIT_03++ASC+-113W8
Cable type S/FTP 4x2xAWG 23/1 PVC/PVC 4x2x23 AWG
Free conductors

Cable parts
Order number



Mounting location:	Source	Function text source	wire end handling	L1 [mm]
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:8			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:4			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:2			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:6			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:7			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:5			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:1			
Control cabinet 1	=UNIT_01++CT+CTRL_1.3-113U4:3			

L2 [mm]	wire end handling	Function text target	Target	Mounting location:
			-613U2:8	
			-613U2:4	
			-613U2:2	
			-613U2:6	
			-613U2:7	
			-613U2:5	
			-613U2:1	
			-613U2:3	

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Terminal-strip overview

F14_001

Terminal strip	Terminal strip definition text	Terminals					Graphical page of terminal diagrams
		first	last	Total PE	Total N	Total number	
-X5.1		1	PE	2	0	12	=UNIT_03&EMZ++ASC/2000
-X5.2		1	PE	2	0	12	=UNIT_03&EMZ++ASC/2001
-X5.3		1	PE	2	0	12	=UNIT_03&EMZ++ASC/2002
-X6		1	6	0	0	6	=UNIT_03&EMZ++ASC/2003
-XDC1		1	PE	2	0	14	=UNIT_03&EMZ++ASC/2004
-XDC2		1	7	0	0	14	=UNIT_03&EMZ++ASC/2005
-XE				0	0	1	=UNIT_03&EMZ++ASC/2006
-XES		1	6	3	5	14	=UNIT_03&EMZ++ASC/2007
-XT		1	14	0	0	14	=UNIT_03&EMZ++ASC/2008
-369XT		1	12	0	0	24	=UNIT_03&EMZ++ASC/2009
-687XT1		1	PE	11	11	33	=UNIT_03&EMZ++ASC/2021
-690XT1		1	PE	40	35	115	=UNIT_03&EMZ++ASC/2032

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&EMB/10

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Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-X5.1						Cable name	-680W1										Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-JZ											
gas concentration BAT 1-4					-XDC2	1	1	,	++Container-680U1-X1	1													&EFS/680a.2
=					-XDC2	5	2	,	++Container-680U1-X1	2		2											&EFS/680a.2
=					-AI_21	13	3	,	++Container-680U1-X1	4		3											&EFS/680a.2
=							4	,															&EFS/680a.2
=							5	,	++Container-680U1-X2	1		4											&EFS/680a.3
=							6	,	++Container-680U1-X2	2		5											&EFS/680a.3
=					-680K1	A1	7	,	++Container-680U1-X2	4		6											&EFS/680a.4
=					-XDC2	2	8	,	++Container-680U1-X2	5		7											&EFS/680a.4
=							9	,	++Container-680U1-X2	7		8											&EFS/680a.5
=							10	,	++Container-680U1-X2	8		9											&EFS/680a.5
=							PE	,	++Container-680U1-X1	5		GNYE											&EFS/680a.2
=							PE	,	-480W1														&EFS/680a.6

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2001

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-X5.1	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_03	Battery Container 2	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2000
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-X5.2						Cable name	-680W2										Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-1Z											
gas concentration BAT 5-8					-XDC2	2	1	,	++Container-680U2-X1	1													&EFS/680b.2
=					-XDC2	6	2	,	++Container-680U2-X1	2		2											&EFS/680b.2
=					-AI_21	14	3	,	++Container-680U2-X1	4		3											&EFS/680b.2
=							4	,															&EFS/680b.2
=							5	,	++Container-680U2-X2	1		4											&EFS/680b.3
=							6	,	++Container-680U2-X2	2		5											&EFS/680b.3
=					-680K2	A1	7	,	++Container-680U2-X2	4		6											&EFS/680b.4
=					-XDC2	2	8	,	++Container-680U2-X2	5		7											&EFS/680b.4
=							9	,	++Container-680U2-X2	7		8											&EFS/680b.5
=							10	,	++Container-680U2-X2	8		9											&EFS/680b.5
=							PE	,	++Container-680U2-X1	5		GNYE											&EFS/680b.2
=							PE	,	-480W1														&EFS/680b.6

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2002

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-X5.2	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_03	Battery Container 2	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2001
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-X5.3						Cable name	-680W3										Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	F-CY-1Z											
gas concentration BAT 9-11					-XDC2	3	1	,	++Container-680U3-X1	1													&EFS/680c.2
=					-XDC2	7	2	,	++Container-680U3-X1	2		2											&EFS/680c.2
=					-AI_21	15	3	,	++Container-680U3-X1	4		3											&EFS/680c.2
=							4	,															&EFS/680c.2
=							5	,	++Container-680U3-X2	1		4											&EFS/680c.3
=							6	,	++Container-680U3-X2	2		5											&EFS/680c.3
=					-680K3	A1	7	,	++Container-680U3-X2	4		6											&EFS/680c.4
=					-XDC2	3	8	,	++Container-680U3-X2	5		7											&EFS/680c.4
=							9	,	++Container-680U3-X2	7		8											&EFS/680c.5
=							10	,	++Container-680U3-X2	8		9											&EFS/680c.5
=							PE	,	++Container-680U3-X1	5		GNYE											&EFS/680c.2
=							PE	,	-480W1														&EFS/680c.6

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2001

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2003

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-X5.3	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_03	Battery Container 2	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2002
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-X6					Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
Extract Fan C/W Fire Damper 1						GND	1	,	-AO_21	1													&EFS/681.1
=						+10V	2	,	-AO_21	5													&EFS/681.1
Extract Fan C/W Fire Damper 2						GND	3	,	-AO_21	2													&EFS/681.3
=						+10V	4	,	-AO_21	6													&EFS/681.3
Extract Fan C/W Fire Damper 3						GND	5	,	-AO_21	3													&EFS/681.5
=						+10V	6	,	-AO_21	7													&EFS/681.5

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-X6	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-XDC1						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
FUSE 24V DC CONTROL VOLTAGE					-101T1	13	1		-103F1	2													&EFS/603.2
					-101Q1	13																	
					-611A1	1																	
FUSE 24V DC CONTROL VOLTAGE					-620A1	-X80:1	2																&EFS/603.2
					-DI_21	L+																	
					-DO_21	L+																	
FUSE 24V DC CONTROL VOLTAGE					-635K7	11	3		-103F1	13													&EFS/603.2
					-684F1	11																	
FUSE 24V DC CONTROL VOLTAGE					-611A1	2	4		-102G1	OUTPUT DC 24 V:-													&EFS/603.3
FUSE 24V DC CONTROL VOLTAGE					-620A1	-X80:2	5																&EFS/603.3
					-DI_21	M																	
					-DO_21	M																	
FUSE 24V DC CONTROL VOLTAGE					-635K1	A2	6		-XDC2	5													&EFS/603.3
FUSE 24V DC CONTROL VOLTAGE					-101T1	-"	PE																&EFS/603.4
					-101T1	PE																	
FUSE 24V DC CONTROL VOLTAGE							PE																&EFS/603.4

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-XDC1	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024							& EMZ	Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC	auxillary cabinet
Date								+	

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-XDC2						Cable name												Page / column
				Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type												
FUSE 24V DC CONTROL VOLTAGE					-AI_21	L+	1		-103F2	2													&EFS/603.5
					-AO_21	L+																	
					-X5.1	1																	
FUSE 24V DC CONTROL VOLTAGE					-X5.1	8	2		-X5.2	8													&EFS/603.5
					-680K1	11																	
					-X5.2	1																	
FUSE 24V DC CONTROL VOLTAGE					-680K2	11	3		-680K3	11													&EFS/603.5
					-X5.3	1																	
					-X5.3	8																	
FUSE 24V DC CONTROL VOLTAGE					-691F1	13	4																&EFS/603.6
					-691F4	13																	
					-691F4	13																	
FUSE 24V DC CONTROL VOLTAGE					-AI_21	M	5		-XDC1	6													&EFS/603.6
					-AO_21	M																	
					-X5.1	2																	
FUSE 24V DC CONTROL VOLTAGE					-680K1	A2	6																&EFS/603.6
					-X5.2	2																	
FUSE 24V DC CONTROL VOLTAGE					-680K2	A2	7																&EFS/603.7
					-X5.3	2																	
					-680K3	A2																	

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Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-XE

Function text				Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
												&EFA++/2a.6

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

Klemmenplan =UNIT_03++ASC+-XE

20240809_V0.7

10354_23A2007

=	UNIT_03	Battery Container 2
&	EMZ	Terminals
++	ASC	auxillary cabinet
+		

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_03++ASC+-XES

Function text	Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable type	Page / column
				1		-684F1	2		&EFS/684.0
UPS Bat-Con 1 3-phase 400V AC				N		-687XT1	N		&EFS/684.1
=		-690XT1	N	N		-687XT1	N		&EFS/684.1
=		-690XT1	N	N		-690F1	N		&EFS/684.2
=		-690XT1	N	N		-690F2	N		&EFS/684.2
=				N		-690XT1	N		&EFS/684.2
=				PE			PE		&EFS/684.2
=		++Container-278W1	GND	PE			PE		&EFS/684.3
=				PE		-684F1	PE		&EFS/684.3
				2		-691F1	1		&EFS/684.0
UPS Bat-Con 1 3-phase 400V AC				3		-684F1	4		&EFS/684.1
=				4		-691F2	1		&EFS/684.1
=				5		-684F1	6		&EFS/684.1
=				6		-691F3	1		&EFS/684.1

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_03++ASC+-XES
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by		FREQCON	10354_23A2007
Date			

= UNIT_03 Battery Container 2
& EMZ Terminals
++ ASC auxillary cabinet
+

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-XT Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Cable type	Page / column
Gas confirmed FGS							1	,	-635K1	14			&EFS/635b.1
=							2	,	-635K1	11			&EFS/635b.1
=							3	,	-635K2	14			&EFS/635b.1
Smoke confirmed FGS							4	,	-635K2	11			&EFS/635b.2
=							5	,	-635K3	14			&EFS/635b.2
Thermal runaway SIS							6	,	-635K3	11			&EFS/635b.3
=							7	,	-635K4	14			&EFS/635b.3
=							8	,	-635K4	11			&EFS/635b.3
Spare							9	,	-635K5	14			&EFS/635b.4
=							10	,	-635K5	11			&EFS/635b.4
=							11	,	-635K6	14			&EFS/635b.5
=							12	,	-635K6	11			&EFS/635b.5
Shut-down to BESS							13	,	-635K7	A2			&EFS/635b.7
=							14	,	-635K7	A1			&EFS/635b.7

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	1					&EFS/669.5
		3			++Container-570XT	3						
	3				++Container-570XT	3						

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-369XT

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	2		++Container-570XT	3		3	&EFS/669.5
		3			++Container-570XT	3							
	3				++Container-570XT	3							

Editor	Freqcon_JD	Statron	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	
Proved by			
Date			

Klemmenplan =UNIT_03++ASC+-369XT

20240809_V0.7

10354_23A2007

=	UNIT_03	Battery Container 2
&	EMZ	Terminals
++	ASC	auxillary cabinet
+		

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			3		++Container-570XT	3	3		++Container-570XT	3		3	&EFS/669.6
		3			++Container-570XT	3							
	3				++Container-570XT	3							

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2010

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2012

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	4					&EFS/669.7
		4			++Container-570XT	4						
	4				++Container-570XT	4						

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next page: 2013

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_03++ASC+-369XT

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	5		++Container-570XT	4		4	&EFS/669.8
		4			++Container-570XT	4							
	4				++Container-570XT	4							

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet smoke detector potential-free contacts customer			4		++Container-570XT	4	6		++Container-570XT	4		4	&EFS/669.8
		4			++Container-570XT	4							
	4				++Container-570XT	4							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet — page: 2014
Date								+ — total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-369XT

Function text	++Container-290W3-2 F-CY-0Z	++Container-290W2-2 F-CY-0Z	++Container-290W1-2 F-CY-0Z	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	7					&EFS/670.5
		1			++Container-570XT	1						
	1				++Container-570XT	1						

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-369XT

Function text	++Container-292W1-2 F-CY-OZ	++Container-291W2-2 F-CY-OZ	++Container-291W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	8		++Container-570XT	1		1	&EFS/670.5
		1			++Container-570XT	1							
	1				++Container-570XT	1							

Editor	Freqcon_JD		
Date	02.07.2024		
Proved by			
Date			

Statron

Shell Crosswind BESS FQ 1MW 5MWh Offshore

Klemmenplan =UNIT_03++ASC+-369XT

20240809_V0.7

10354_23A2007

=	UNIT_03	Battery Container 2
&	EMZ	Terminals
++	ASC	auxillary cabinet
+		

page: 2016

total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			1		++Container-570XT	1	9		++Container-570XT	1		1	&EFS/670.6
		1			++Container-570XT	1							
	1				++Container-570XT	1							

Strip =UNIT_03++ASC+-369XT

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_03++ASC+-369XT
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by		FREQCON	10354_23A2007
Date			

= UNIT_03 Battery Container 2
& EMZ Terminals
++ ASC auxillary cabinet
+
page: 2017
total: 482

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-369XT

Function text	++Container-290W3-2 F-CY-OZ	++Container-290W2-2 F-CY-OZ	++Container-290W1-2 F-CY-OZ	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	10					&EFS/670.7
		2			++Container-570XT	2						
	2				++Container-570XT	2						

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore		10354_23A2007	& EMZ Terminals
Proved by					++ ASC auxillary cabinet
Date					+

page: 2018
total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W1-2 F-CY-0Z	++Container-291W2-2 F-CY-0Z	++Container-291W1-2 F-CY-0Z	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W3-2 F-CY-0Z	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	11		++Container-570XT	2		2	&EFS/670.8
		2			++Container-570XT	2							
	2				++Container-570XT	2							

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-2 F-CY-OZ	++Container-292W3-2 F-CY-OZ	++Container-292W2-2 F-CY-OZ	Cable name / Cable type	Strip =UNIT_03++ASC+-369XT: Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	++Container-293W2-2 F-CY-OZ	Page / column
battery cabinet gas potential-free contacts customer			2		++Container-570XT	2	12		++Container-570XT	2		2	&EFS/670.8
		2			++Container-570XT	2							
	2				++Container-570XT	2							

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next page: 2021

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-369XT	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

page: 2020

total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W3-1 JZ-500	++Container-290W2-1 JZ-500	++Container-290W1-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	1	,	-687F1	2		&EFS/687.1
=		1			++Container-XE	1	2	,	-687F2	2		&EFS/687.3
=	1				++Container-XE	1	3	,	-687F3	2		&EFS/687.4

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next page: 2022

Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024					& EMZ Terminals
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet page: 2021
Date						+ total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W1-1 JZ-500	++Container-291W2-1 JZ-500	++Container-291W1-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	4	,	-687F4	2		&EFS/687.5
=		1			++Container-XE	1	5	,	-687F5	2		&EFS/687.7
=	1				++Container-XE	1	6	,	-687F6	2		&EFS/687.8

previous page: 2021

next page: 2023

Editor	Freqcon_JD			Statron	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03	Battery Container 2
Date	02.07.2024						& EMZ	Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore		10354_23A2007	++ ASC	auxillary cabinet
Date							+	

page: 2022

total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W1-1 JZ-500	++Container-292W3-1 JZ-500	++Container-292W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	7	,	-688F1	2		&EFS/688.1
=		1			++Container-XE	1	8	,	-688F2	2		&EFS/688.3
=	1				++Container-XE	1	9	,	-688F3	2		&EFS/688.4

previous page: 2022

next page: 2024

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-290W1-1 JZ-500	++Container-293W3-1 JZ-500	++Container-293W2-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			1		++Container-XE	1	10	,	-688F4	2		&EFS/688.5
=		1			++Container-XE	1	11	,	-688F5	2		&EFS/688.7
=	2				++Container-XE	N	N	⌐	-XES	N		&EFS/687.1

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

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Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-687XT1

Function text	++Container-291W1-1 JZ-500	++Container-290W3-1 JZ-500	++Container-290W2-1 JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/687.3
=		2			++Container-XE	N	N					&EFS/687.4
=	2				++Container-XE	N	N					&EFS/687.6

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next page: 2026

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024				& EMZ Terminals
Proved by		Shell Crosswind BESS FQ 1MW 5MWh Offshore		10354_23A2007	++ ASC auxillary cabinet — page: 2025
Date					+ — total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W2-1 -XZ-500	++Container-292W1-1 -XZ-500	++Container-291W2-1 -XZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/687.7
=		2			++Container-XE	N	N					&EFS/687.8
=	2				++Container-XE	N	N		-XES	N		&EFS/688.1

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next page: 2027

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W2-1 JZ-500	++Container-293W1-1 JZ-500	++Container-292W3-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N					&EFS/688.3
=		2			++Container-XE	N	N					&EFS/688.4
=	2				++Container-XE	N	N					&EFS/688.6

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next page: 2028

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-687XT1

Function text	++Container-290W2-1 JZ-500	++Container-290W1-1 JZ-500	++Container-293W3-1 JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			2		++Container-XE	N	N	⌟				&EFS/688.7
=		GNYE			++Container-XE	PE	PE	,				&EFS/687.2
=	GNYE				++Container-XE	PE	PE	,				&EFS/687.3

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Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7
Date	02.07.2024						
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007
Date							

=	UNIT_03	Battery Container 2	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2028
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Strip =UNIT_03++ASC+-687XT1

Function text	++Container-291W2-1 JZ-500	++Container-291W1-1 JZ-500	++Container-290W3-1 JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE	.				&EFS/687.4
=		GNYE			++Container-XE	PE	PE	.				&EFS/687.6
=	GNYE				++Container-XE	PE	PE	.				&EFS/687.7

Editor	Freqcon_JD	Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2	
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore				& EMZ Terminals	
Proved by					10354_23A2007	++ ASC auxillary cabinet	page: 2029
Date						+	total: 482

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-292W3-1 JZ-500	++Container-292W2-1 JZ-500	++Container-292W1-1 JZ-500	Cable name / Cable type	Strip =UNIT_03++ASC+-687XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE	,				&EFS/687.9
=		GNYE			++Container-XE	PE	PE	,				&EFS/688.2
=	GNYE				++Container-XE	PE	PE	,				&EFS/688.3

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next page: 2031

Editor	Freqcon_JD			Statron	FREQCON	Klemmenplan =UNIT_03++ASC+-687XT1	20240809_V0.7	= UNIT_03 Battery Container 2
Date	02.07.2024							& EMZ Terminals
Proved by				Shell Crosswind BESS FQ 1MW 5MWh Offshore			10354_23A2007	++ ASC auxillary cabinet
Date								+

Terminal diagram

Freqcon_F13_001_02

Function text	++Container-293W3-1 JZ-500	++Container-293W2-1 JZ-500	++Container-293W1-1 JZ-500	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Supply Battery String 1-phase 230V AC			GNYE		++Container-XE	PE	PE					&EFS/688.4
=		GNYE			++Container-XE	PE	PE					&EFS/688.6
=	GNYE				++Container-XE	PE	PE					&EFS/688.7

Strip =UNIT_03++ASC+-687XT1

Editor	Freqcon_JD	Statron	Klemmenplan =UNIT_03++ASC+-687XT1
Date	02.07.2024	Shell Crosswind BESS FQ 1MW 5MWh Offshore	20240809_V0.7
Proved by			10354_23A2007
Date			

=	UNIT_03	Battery Container 2	
&	EMZ	Terminals	
++	ASC	auxillary cabinet	page: 2031
+			total: 482

Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_03++ASC+-690XT1

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
Container Internal Lighting			L	1		-690F1	2		&EFS/690.1
=			1	2		-690F2	2		&EFS/690.3
Container Sockets			1	3		-690F3	2		&EFS/690.5
230V AC for crane 2			1	4		-690F4	2		&EFS/690.7
230V AC for crane 3			1	5		-690F5	2		&EFS/690.8
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4			L	6		-636K1	14		&EFS/691.1
			L						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8			L	7		-636K2	14		&EFS/691.3
			L						

Terminal diagram

Freqcon_F13_001_02

Strip

=UNIT_03++ASC+-690XT1

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11			L	8		-636K3	14		&EFS/691.4
			L						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11				9		-691F4	2		&EFS/691.5

Terminal diagram

Freqcon_F13_001_02

Function text				Cable name	Strip =UNIT_03++ASC+-690XT1 Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name	Page / column
				Cable type							Cable type	
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
400V AC for Cooling Units							10	,	-691F4	4		&EFS/691.6
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
								,				
400V AC for Cooling Units							11	,	-691F4	6		&EFS/691.6
								,				
								,				
								,				
								,				
								,				
Container Sockets						2	N	,	-690F2	N.		&EFS/690.4
230V AC for crane 1						2	N	,	-XES	N		&EFS/690.6
230V AC for crane 2						2	N	,	-XES	N		&EFS/690.7
230V AC for crane 3						2	N	,	-XES	N		&EFS/690.8
								,				
Container Sockets						PE	PE	,				&EFS/690.4
230V AC for crane 1						PE	PE	,				&EFS/690.6

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Terminal diagram

Freqcon_F13_001_02

Strip
=UNIT_03++ASC+-690XT1

Function text	Cable name / Cable type	Target designation	Connection point	Terminal	Jumper	Target designation	Connection point	Cable name / Cable type	Page / column
230V AC for crane 2			PE	PE					&EFS/690.7
230V AC for crane 3			PE	PE					&EFS/690.8
Container Internal Lighting			N	N		-690F1	N.		&EFS/690.1
=			GND	PE					&EFS/690.2
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4			N	N		-XES	N		&EFS/691.1
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 1-4			GND	PE					&EFS/691.2
			GND						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8			N	N					&EFS/691.3
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 5-8			GND	PE					&EFS/691.3
			GND						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11			N	N					&EFS/691.4
			N						
230V AC for Exhaust Unit / shut-off flap Battery cabinets 9-11			GND	PE					&EFS/691.4
			GND						
400V AC for Cooling Units				N					&EFS/691.6
=				PE					&EFS/691.6