Ballard Power Systems Europe A/S
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Revision history		
Rev.	**Date.**	**Description**
001	1/27/2023	First Issue
002	3/3/2023	Modified according to comments
003	5/17/2023	Updated according to comments
004	3/8/2024	Updated according to comments
005	10/16/2024	Updated according to comments and with changed water separator
006	11/20/2024	Updated according to comments
007	9/15/2025	Updated, as build

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0	1	2	3	4	5	6	7	8

Process And Instrumentation Diagrams

Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS

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Reference Item Number	Ballard Part # TBD		
EPLAN Project Name	601456B - Shell Baseload Power Hub		
EPLAN Revision	12		
EPLAN Project Pages	574		
=	++	+	& B02

Design:	PBL
Review:	RBS
Approval:	JTA

REVISION INFORMATION
DESCRIPTION
DATE
15-Sep-25

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DRAWING	K559-2254-CWIWP4202202-C03-001	REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS		
SHEET TYPE/DESC	P&ID Introduction		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 1 / 15

Structure Identifier Overview

Functional Designation

Which function is associated with the components?

Structure identifier overview

Full designation	Labeling	Structure description
=AA01	Function designation	Container Interconnection
=BA01	Function designation	Power Conversion Block 1
=BA02	Function designation	Power Conversion Block 2
=BA20	Function designation	Power Conversion BOP
=BA30	Function designation	Power Conversion Output
=HA01	Function designation	Hydrogen Supply System
=HE01	Function designation	High Temperature Cooling Circuit #1
=HE02	Function designation	High Temperature Cooling System #2
=HE03	Function designation	Low Temperature Cooling Circuit
=JA01	Function designation	Container Ventilation System
=JA02	Function designation	Process Exhaust System
=JA03	Function designation	H2 Enclosure Ventilation
=JB01	Function designation	Condensate Drainage System
=LA01	Function designation	Container Control System
=LB02	Function designation	Container Safety System
=RE01	Function designation	Fuel Cell System 1
=RE02	Function designation	Fuel Cell System 2
=HKN70	Function designation	Baseload Power Hub
=EXT	Function designation	External Connection
=JB02	Function designation	Condensate Drainage System
=LA01.LA01	Function designation	

Location Designation

Where is the component located?

Structure identifier overview

Full designation	Labeling	Structure description
+DA01	Location designation	Container #1 Inside
+DA02	Location designation	Container #1 Outside
+DA03	Location designation	Container #2 Inside
+DA04	Location designation	Container #2 Outside
+GB01	Location designation	FCwave Module #1
+GB02	Location designation	FCwave Module #2
+GB03	Location designation	FCwave Module #3
+GB04	Location designation	FCwave Module #4
+GB05	Location designation	FCwave Module #5
+GB06	Location designation	FCwave Module #6
+UC01	Location designation	DCDC Cabinet #1
+UC02	Location designation	DCDC Cabinet #2
+UC03	Location designation	DCDC Cabinet #3
+UC04	Location designation	DCDC Cabinet #4
+UC05	Location designation	DCDC Cabinet #5
+UC06	Location designation	DCDC Cabinet #6
+UC07	Location designation	Ventilation Cabinet
+UC10	Location designation	DCAC Cabinet Output
+UC20	Location designation	Control Cabinet (40ft)
+UC30	Location designation	Coolant Skid Control Cabinet
+UC31	Location designation	Control Cabinet (10ft)
+UC40	Location designation	Coolant Power Distribution
+UC41	Location designation	HT+LT VFD Cabinet
+UC42	Location designation	EX Barrier Box
+UC50	Location designation	AC Power Distribution
+WZ10	Location designation	Container Interconnect Frame
+H2SS	Location designation	Hydrogen Supply (Ext)
+UC30.UC20	Location designation	

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
= ++ + & B02	

Design: PBL
Review: RBS
Approval: JTA

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15-Sep-25

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DRAWING	K559-2254-CWIWP4202202-C03-001	REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS		
SHEET TYPE/DESC	Structure Identifier Overview		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 2 / 15

Symbol List

Process Engineering

Threaded Connection
Dissimilar male and female part
=+-XM00

Valve, Hand-actuated
Typically quarter-turn, lockable in both positions
=+-QM00

Wall-passthough
Penetration through enclosure or container
-XT01

Valve, solenoid-actuated
Electromagnetic shutoff valve, normally closed type
-QM00

Pipe fixed point
Eg pipe end or welding connection
-XM00

Valve, check
One-way flow control valve for gas for fluid
-RM00

Liquid cooling element
Cooling path of liquid cooled power electronics
-TA00

Cooling Tower, with fans
Suction type
=+-EG00

Pump, centrifugal, with motor
Suction type
-GP00

Hose, Flexible
-WP00

Exhaust, to free air
With weather shield
-WM00

Valve, Shut-off, Motorized, Modulating
Motorized Control Valve, gradual between 0-100%
-QN00

Vessel or tank
With volume indicated
=+-CL00
Volume XL

Flow restrictor or orifice
For limiting gas or fluid flow rate
-QN00

Reducer, concentric
With indication of size
-XM00

Ventilation and Heating

Heater, with fans
Space heating element, electric
-EB00

Damper, lamellar
For ventilation purposes
-QM00

Actuator, motor, modulating
For dampers or valves
=+-QM00.MA00

Fan, axial flow
With motor
-GQ00

Fan, radial flow
With motor
-GQ00

Sensor, Room
Sensor for sensing conditions in open space
-BT00

Sensor, Process
Sensor with process connection
-BT00

Filter, for air
Cooling path of liquid cooled power electronics
-FS00

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
= | ++ | + | & B02	

Design: PBL
Review: RBS
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DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS		
SHEET TYPE/DESC	Symbol List		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1	LANGUAGE EN	SHEET/TOTAL 3 / 16

FRMS103653/0B

Hydrogen Supply System - Fuel Cells 1-6

=RE01
Fuel Cell System 1

+GB01
FCwave 1

-XM01
20mm
H2 Supply Inlet

-WP_H2927
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

+GB02
FCwave 2

-XM01
20mm
H2 Supply Inlet

-WP_H2926
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

+GB03
FCwave 3

-XM01
20mm
H2 Supply Inlet

-WP_H2925
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

=RE02
Fuel Cell System 2

+GB04
FCwave 4

-XM01
20mm
H2 Supply Inlet

-WP_H2924
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

+GB05
FCwave 5

-XM01
20mm
H2 Supply Inlet

-WP_H2923
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

+GB06
FCwave 6

-XM01
20mm
H2 Supply Inlet

-WP_H2922
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

=HA01+DA02
Hydorgen Supply System, Container #1 Outside

-XT01
Wall pass-through

-WP_H2917
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.1

=HA01+DA02-QM2.1
DN20
Shut-off Valve

-WP_H2907
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.1

=HA01+DA02-QM1.1
DN20
Shut-off Valve

-XT02
Wall pass-through

-WP_H2916
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.2

=HA01+DA02-QM2.2
DN20
Shut-off Valve

-WP_H2906
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.2

=HA01+DA02-QM1.2
DN20
Shut-off Valve

-XT03
Wall pass-through

-WP_H2915
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.3

=HA01+DA02-QM2.3
DN20
Shut-off Valve

-WP_H2905
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.3

=HA01+DA02-QM1.3
DN20
Shut-off Valve

-XT04
Wall pass-through

-WP_H2914
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.4

=HA01+DA02-QM2.4
DN20
Shut-off Valve

-WP_H2904
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.4

=HA01+DA02-QM1.4
DN20
Shut-off Valve

-XT05
Wall pass-through

-WP_H2913
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.5

=HA01+DA02-QM2.5
DN20
Shut-off Valve

-WP_H2903
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.5

=HA01+DA02-QM1.5
DN20
Shut-off Valve

-XT06
Wall pass-through

-WP_H2912
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM2.6

=HA01+DA02-QM2.6
DN20
Shut-off Valve

-WP_H2902
Hydrogen
3,5-6,5 barg
12 - 80°C
<4,9 g/s

Y V
QM1.6

=HA01+DA02-QM1.6
DN20
Shut-off Valve

-BL01
SI = 11 mm
Ex Point Liquid Detection

BT01
PT1000 -40...150 °C
Liquid Temperature Sensor

-CM01
SS316, Volume 146L
Hydrogen Heater Vessel

-EA01
3x400V, 9kW, Ex
Heating Element 1

-EA02
3x400V, 9kW, Ex
Heating Element 2

-WP01
DN25, 3000m
Tube Coil

-WP02
DN25, 3000m
Tube Coil

-WP03
DN25, 3000m
Tube Coil

-WP04
DN25, 3000m
Tube Coil

-WP05
DN25, 3000m
Tube Coil

-WP06
DN25, 3000m
Tube Coil

-WP_H2947
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM01
DN25
Isolation Valve, Lockable

-WP_H2946
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM02
DN25
Isolation Valve, Lockable

-WP_H2945
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM03
DN25
Isolation Valve, Lockable

-WP_H2944
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM04
DN25
Isolation Valve, Lockable

-WP_H2943
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM05
DN25
Isolation Valve, Lockable

-WP_H2942
Hydrogen
3,5-6,5 barg
-6,4 - 80°C
<4,9 g/s

H

=HA01+DA02-QM06
DN25
Isolation Valve, Lockable

=HKN70
Baseload Power Hub, Hydrogen Supply

0,9 - 29,4 g/s
-6,4 - 25°C
4,5 - 6,5 barg
Hydrogen

-XM01
DN32, EN1759-1, RF face
H2 Supply Connection
Flange Fitting

P T
BT01

=HA01+DA02-BP01
0...10 barg
Hydrogen Inlet
Pressure Transmitter

-WP_H2900
Hydrogen
3,5 - 6,5 barg
-6,4 - 80°C
0,9 - 29,4 g/s

H

=HA01+DA02-QM00
DN32
Manual shutoff valve
Lockable

-WP_H2901
Hydrogen
3,5 - 6,5 barg
-6,4 - 80°C
0,9 - 29,4 g/s

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	+ + + & B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION	
DESCRIPTION	
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	Hydrogen Supply System
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 · LANGUAGE EN · SHEET/TOTAL 4 / 16

FRMS103653/0B

Hydrogen Supply System - Fuel Cells 1-6

Bill of Materials / Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
-AC01-WG01	2	meter	ÖLFLEX CLASSIC 110 CH 18G0,75	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035051
-BL01	1	Piece	Electronic level sensor; Operating voltage 18...30 DC V; ATEX; M12 Connector; Gold-plated contacts	IFM Electronic AS	LMACE-A12E-QSKG-LI/S/3D/3G	LMT01A
-BL01-WG01	1	piece	Cable: 25 m, PUR, Halogen-free, black, 4 x 0,34 mm² Connector: 1 x M12, angled; coding: A	IFM Electronic AS	ADOGH040VAT002SH04/3G/2D	EVC14A
-BL01-XG01	0					
-BP01	1	Piece	Pressure Transducer, 0-10 barg, 4-20mA, ATEX, -25 to 85°C Ta, M12 Connector, 10..30 VDC, 2-wire, G1/2 Process Connection, FPM Seal	HUBA Controls AG	Pressure Transducer 520 Series	520930S04M801
-BP01-WG01	1	piece	Cable: 10 m, PUR, Halogen-free, blue, 4 x 0,34 mm² Connector: 1 x M12, straight; coding: A	IFM Electronic AS	ADOGH040MSN0010H04/1G/1D	ENC03A
-BP01-XG01	0					
-BT01	1	Piece	PT1000 Sensor Element, Ø10mm x 160mm, 4 wire connection, EN60751 Class A	IFM Electronic AS	TT-100KBBD10-...../US/	TT1050
-BT01-WG01	1	piece	Cable: 10 m, PUR, Halogen-free, blue, 4 x 0,34 mm² Connector: 1 x M12, straight; coding: A	IFM Electronic AS	ADOGH040MSN0010H04/1G/1D	ENC03A
-BT01-XG01	0					
-CM01	1	piece	Hydrogen Heater System, Water bath heat exchanger, SS316L, Volume 146L	Ballard Power Systems Europe		
-CM01-EA01	1	piece	Immersion Heater, 3x400V, 9kW, ATEX, IP66, Screw plug 2", ASTM A182 F316, Element Length 600m	JEVI Heating Elements AS	D-8640	340386
-CM01-EA01	1	Piece	Cable gland, ATEX Group II, grounding ring for amour, tightening guide, M20	Hawke International	ICG 653 UNIV Os M20	653UOsM20
-CM01-EA02	1	piece	Immersion Heater, 3x400V, 9kW, ATEX, IP66, Screw plug 2", ASTM A182 F316, Element Length 600m	JEVI Heating Elements AS	D-8640	340386
-CM01-EA02	1	Piece	Cable gland, ATEX Group II, grounding ring for amour, tightening guide, M20	Hawke International	ICG 653 UNIV Os M20	653UOsM20
-CM01-WP01	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-CM01-WP02	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-CM01-WP03	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-CM01-WP04	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-CM01-WP05	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-CM01-WP06	1		Pipe coil, for H2 heater system. DN25 seamless pipe, 2mm wall, Stainless Steel 316L	Ballard Power Systems Europe		
-EA01-WD01	1	meter	Screened control cable, 4G2,5mm2, LSZH	Lapp Group	ÖLFLEX® CLASSIC 135 CH	1123342
-EA02-WD01	1	meter	Screened control cable, 4G2,5mm2, LSZH	Lapp Group	ÖLFLEX® CLASSIC 135 CH	1123342
-QM00	1	Piece	3-piece premium quater-turn ball valve, full bore, Stainless steel, DN32, CF8M, ATEX, Weld-ends, lockable	Armatec DVCAS	1311 Full Bore	131150032
-QM1.1	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.1	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.1	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.1-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM1.2	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.2	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.2	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.2-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM1.3	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.3	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.3	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.3-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM1.4	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.4	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.4	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.4-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM1.5	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.5	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.5	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.5-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM1.6	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM1.6	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM1.6	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM1.6-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM01	1	Piece	Quater-turn ball valve, lockable, size 25mm, 25mm Hy-Lok Tube Fitting ends	Hy-Lok Corporation	110 Series Ball Valves	BVH-25M
-QM2.1	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM2.1	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM2.1	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20
-QM2.1-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056
-QM2.2	1	Piece	Solenoid Valve, Normally Closed, 3/4" Bore, ATEX for Hydrogen, Material: Body SS316, Seal, Diaphragm NBR, Pressure 0 to 16 barg	Emerson ASCO	NF X E210D488E 24/DC	NF X E210D488E 24/DC
-QM2.2	1	Piece	Eaton's Crouse-Hinds series Redapt AD-U adaptor End1 size: 1/2", NPT, Male End2 size: M20, Metric, Female	Eaton	AD-U	ADU102904
-QM2.2	1	Piece	501/421 Cable gland, ATEX Group II, M20, Unplated brass	Hawke International	501/421/O M20	421OM20

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	++ | + | & B02

FRM5103653/0B

Design:	PBL
Review:	RBS
Approval:	JTA

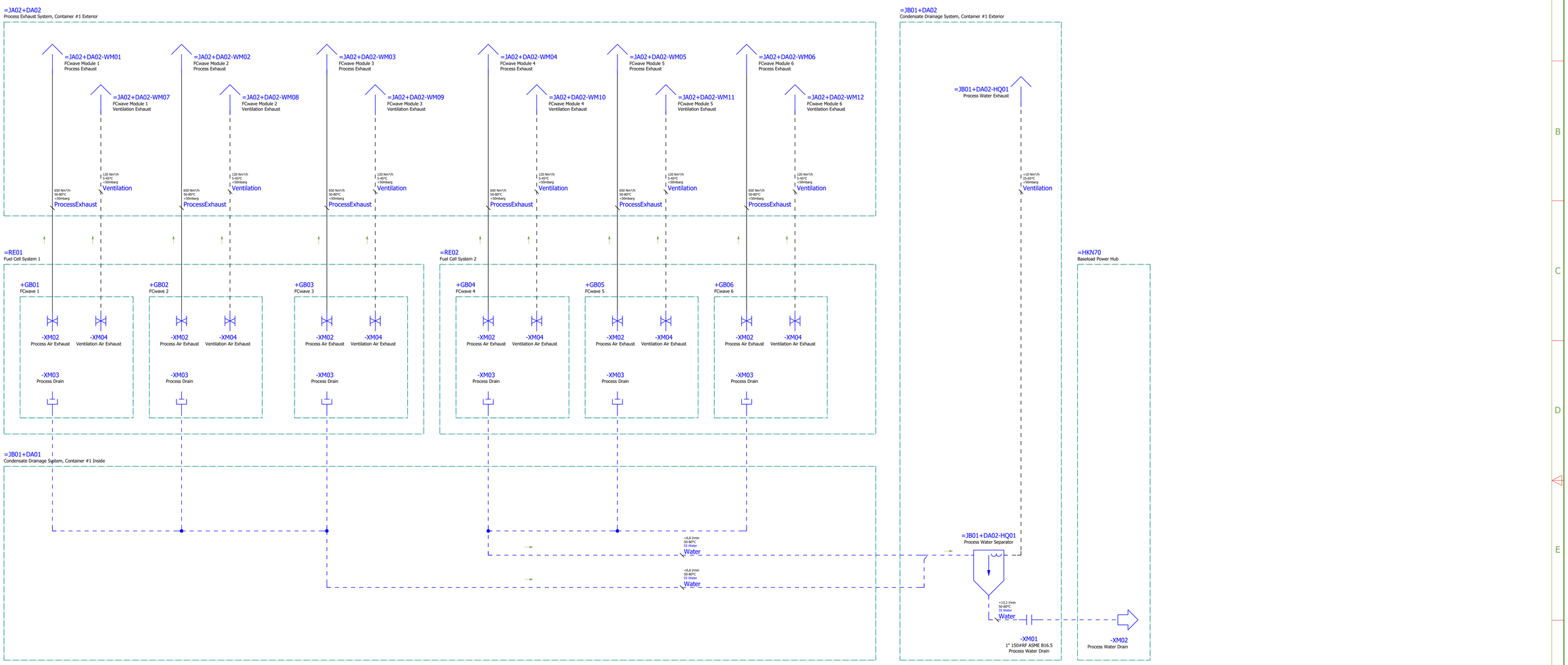
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DESCRIPTION	
DATE	
15-Sep-25	

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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	Hydrogen Supply System - BOM
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 5 / 16

Process Exhaust, Ventilation Exhaust, Process Water Drain - Fuel Cells 1-6



Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=JB01+DA02-HQ01	0					
=JB01+DA02-HQ01	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM01	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM02	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM03	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM04	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM05	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM06	1		Process Exhaust for FCwave, Megablock, 3" Stainless 316	Ballard Power Systems Europe		7001553
=JA02+DA02-WM07	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM08	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM09	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM10	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM11	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JA02+DA02-WM12	1		Ventilation Exhaust, Megablock, 2", Stainless 316	Ballard Power Systems Europe		7001554
=JB01+DA02-XM01	1		Pipe End, Ø60.3mm, Material 1.4301	Ballard Power Systems Europe		5500231B-2891

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
= | 1+ | + | & B02	

Design:	PBL
Review:	RBS
Approval:	JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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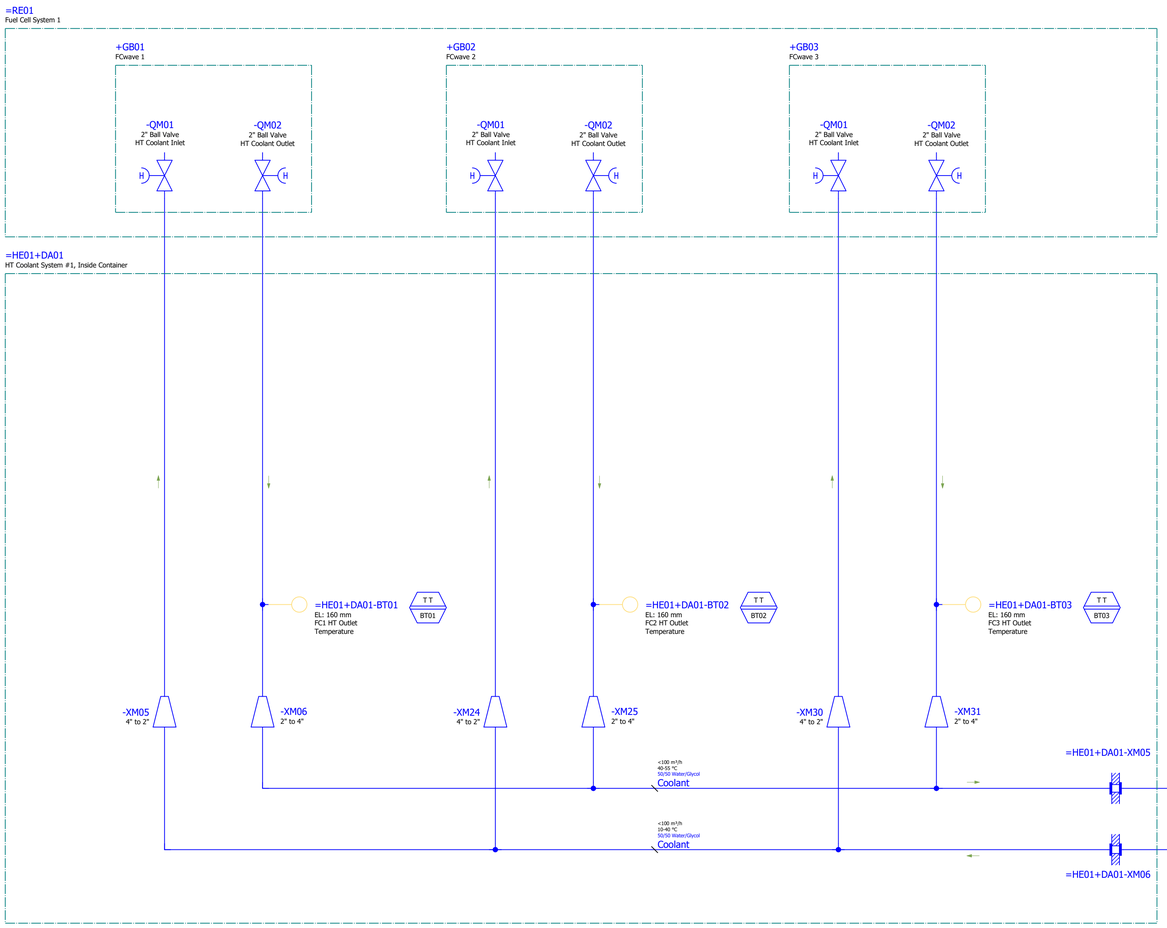
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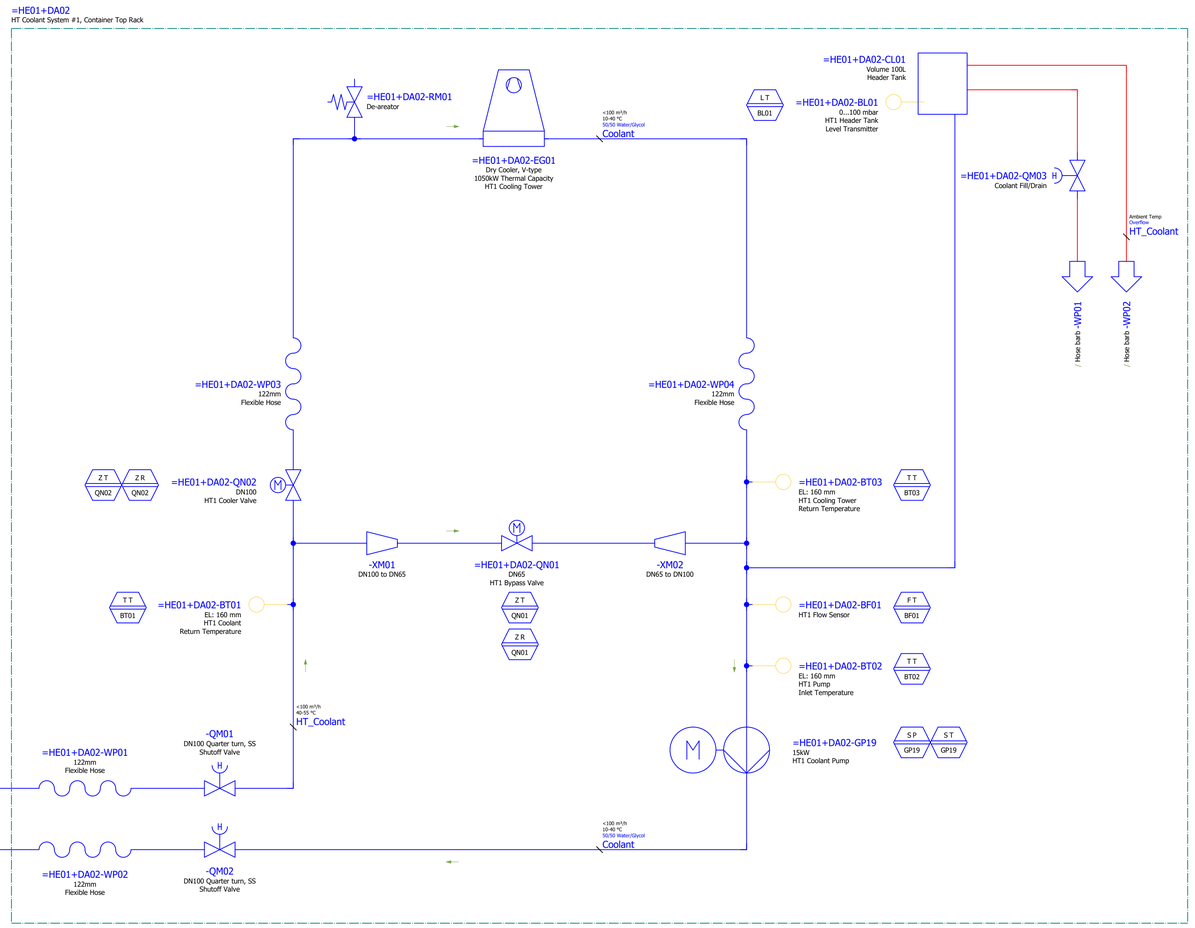
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	Process Exhaust and Drain
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 6 / 16

FRMS1036S3/08

High Temperature Cooling System - Fuel Cells 1-3





Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=HE01+DA02-BF01	1	Piece	Flow sensor	IFM Electronic AS	SAEXXXXB50KG/US-100	SA4104
=HE01+DA02-BL01	1	Piece	Pressure transmitter with ceramic measuring cell, DC, analogue signal	IFM Electronic AS	PA-,10BRBG14-A-ZVG/US/ /V	PA3589
=HE01+DA01-BT01	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA01-BT02	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA01-BT03	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA02-BT01	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA02-BT02	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA02-BT03	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE01+DA02-CL01	1		Header Tank, Volume 100L, AISI 304	Ballard Power Systems Europe	5500231B-3002	5500231B-3002
=HE01+DA02-EG01	1		Dry Cooler, 1050kW, With Ventilators (Offshore)	EVAPCO Europe A/S	VA091 Series Drycooler	VA091EWHHD-682-IHD-120-2,3-Sp
=HE01+DA02-GP19	1		Centrifugal pump, with electric motor, single-stage close coupled in line.	Grundfos AS	TP 100-310/2 X-F-A-BQQE-OW1	92886729
=HE01+DA02-QM01	1		Ball Valve, Stainless Steel, DN100, Weld Flange	Armatec DVCAS	DVC Type 1311	1311510100
=HE01+DA02-QM02	1		Ball Valve, Stainless Steel, DN100, Weld Flange	Armatec DVCAS	DVC Type 1311	1311510100
=HE01+DA02-QM03	0					
=HE01+DA02-QN01	1	piece	Valve act. 24...230V, 160 Nm, bus, IP66	Belimo Holding AG	PRCA-BAC-S2-T	PRCA-BAC-S2-T
=HE01+DA02-QN02	1	piece	Valve act. 24...230V, 160 Nm, bus, IP66	Belimo Holding AG	PRCA-BAC-S2-T	PRCA-BAC-S2-T
=HE01+DA02-RM01	1		De-aerator, For coolant containing 50%vol glycol, 21.3mm BSPT thread external	Sanistål	Flexvent 1/2"	
=HE01+DA02-WP01	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE01+DA02-WP02	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE01+DA02-WP03	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE01+DA02-WP04	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	++ + & B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION
DESCRIPTION
DATE
15-Sep-25

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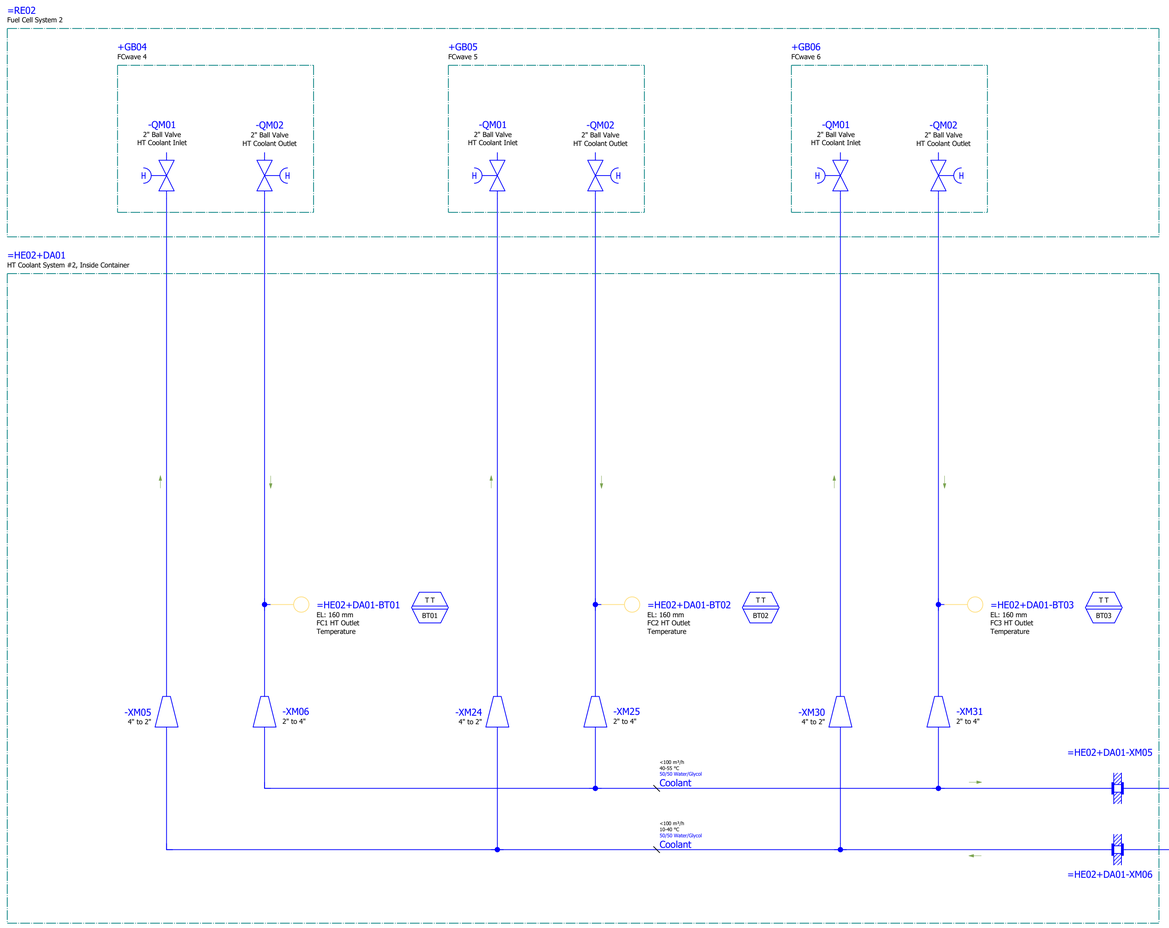
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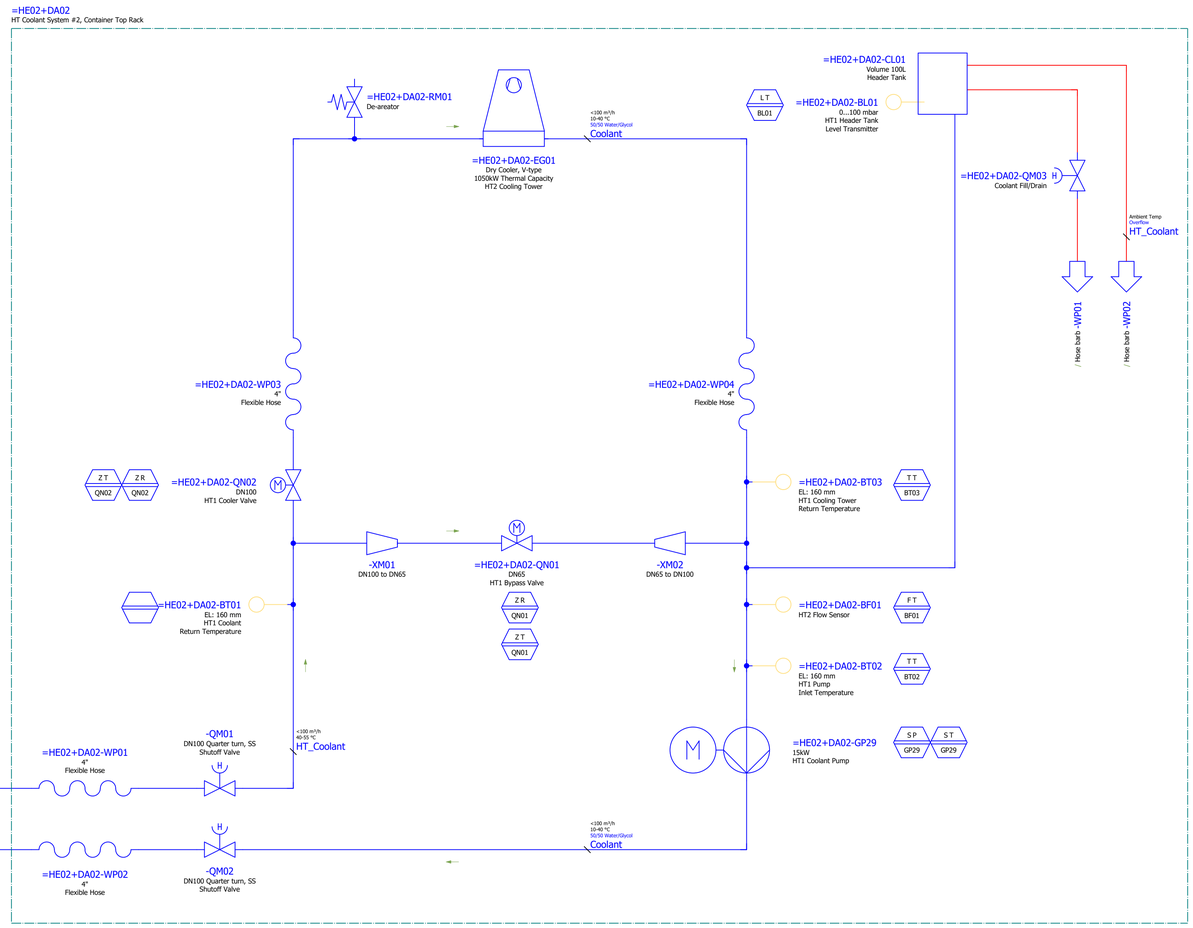
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	HT1 Coolant System - Fuel Cells
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 LANGUAGE EN SHEET/TOTAL 7 / 16

FRMS103653/0B

High Temperature Cooling System - Fuel Cells 4-6





Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=HE02+DA02-BF01	1	Piece	Flow sensor	IFM Electronic AS	SAEXXXXB50KG/US-100	SA4104
=HE02+DA02-BL01	1	Piece	Pressure transmitter with ceramic measuring cell, DC, analogue signal	IFM Electronic AS	PA-,10BRBG14-A-ZVG/US/ /V	PA3589
=HE02+DA01-BT01	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA01-BT02	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA01-BT03	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA02-BT01	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA02-BT02	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA02-BT03	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE02+DA02-CL01	1		Header Tank, Volume 100L, AISI 304	Ballard Power Systems Europe	5500231B-3002	5500231B-3002
=HE02+DA02-EG01	1		Dry Cooler, 1050kW, With Ventilators (Offshore)	EVAPCO Europe A/S	VA091 Series Drycooler	VA091EWHHD-682-IHD-120-2,3-Sp
=HE02+DA02-GP29	1		Centrifugal pump, with electric motor, single-stage close coupled in line.	Grundfos AS	TP 100-310/2 X-F-A-BQQE-OW1	92886729
=HE02+DA02-QM01	1		Ball Valve, Stainless Steel, DN100, Weld Flange	Armatec DVCAS	DVC Type 1311	1311510100
=HE02+DA02-QM02	1		Ball Valve, Stainless Steel, DN100, Weld Flange	Armatec DVCAS	DVC Type 1311	1311510100
=HE02+DA02-QM03	0					
=HE02+DA02-QN01	1	piece	Valve act. 24...230V, 160 Nm, bus, IP66	Belimo Holding AG	PRCA-BAC-S2-T	PRCA-BAC-S2-T
=HE02+DA02-QN02	1	piece	Valve act. 24...230V, 160 Nm, bus, IP66	Belimo Holding AG	PRCA-BAC-S2-T	PRCA-BAC-S2-T
=HE02+DA02-RM01	1		De-aerator, For coolant containing 50%vol glycol, 21.3mm BSPT thread external	Sanistål	Flexvent 1/2"	
=HE02+DA02-WP01	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE02+DA02-WP02	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE02+DA02-WP03	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122
=HE02+DA02-WP04	1		Coolant Hose, 110x122mm, EPDM, 4barg	Radiacord	5.002.000.01604	NW110-122

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	++ + & B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION
DESCRIPTION
DATE
15-Sep-25

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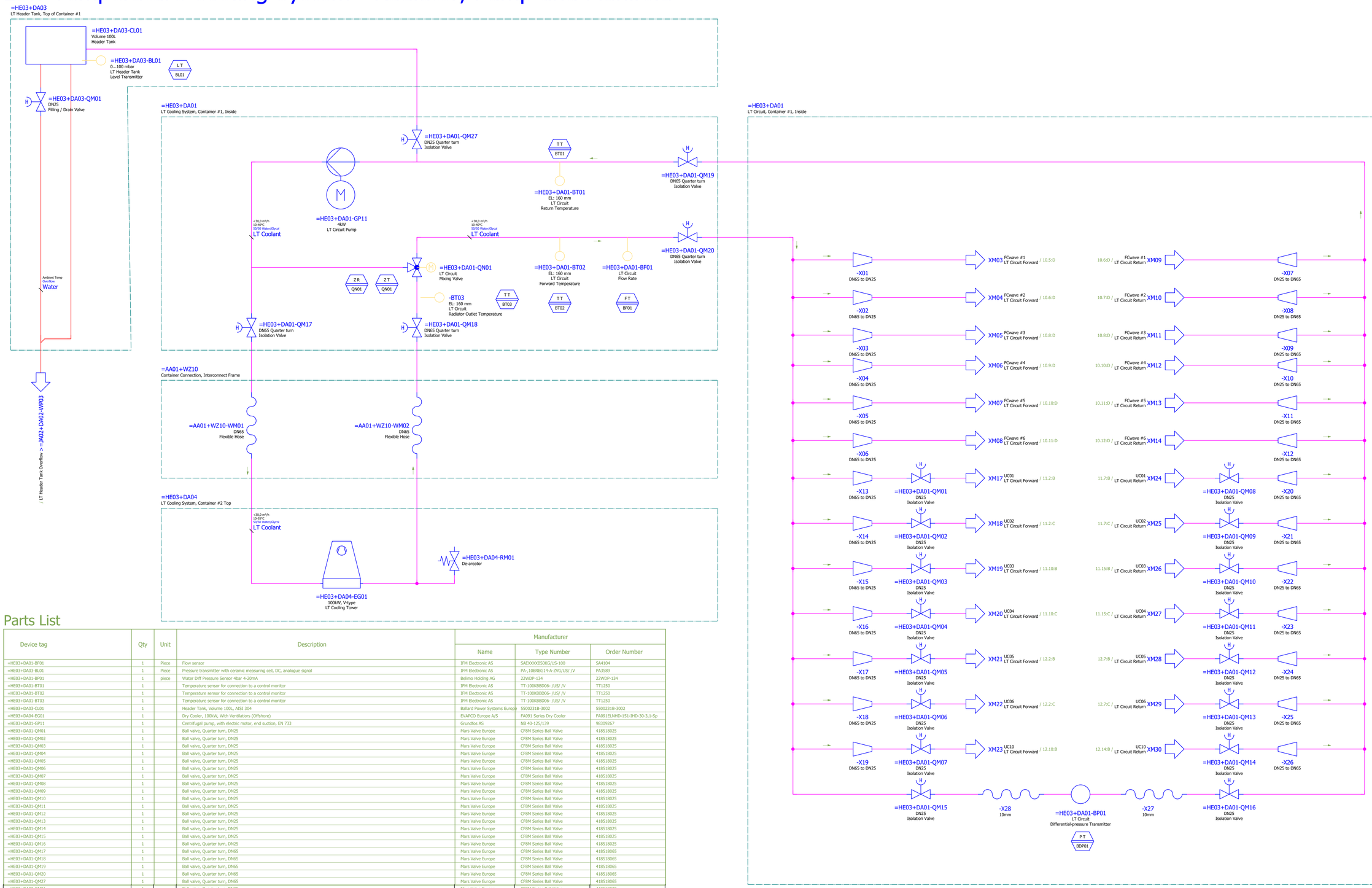
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	HT2 Coolant System - Fuel Cells
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 LANGUAGE EN SHEET/TOTAL 8 / 16

FRMS103653/0B

Low Temperature Cooling System - Radiator, Pump and Manifold



Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=HE03+DA01-BF01	1	Piece	Flow sensor	IFM Electronic AS	SAEXXXXBS0KG/US-100	SA4104
=HE03+DA03-BL01	1	Piece	Pressure transmitter with ceramic measuring cell, DC, analogue signal	IFM Electronic AS	PA-,108RBG14-A-ZVG/US/ /V	PA3589
=HE03+DA01-BP01	1	piece	Water Diff Pressure Sensor 4bar 4-20mA	Belimo Holding AG	22WDP-134	22WDP-134
=HE03+DA01-BT01	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE03+DA01-BT02	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE03+DA01-BT03	1		Temperature sensor for connection to a control monitor	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250
=HE03+DA03-CL01	1		Header Tank, Volume 100L, AISI 304	Ballard Power Systems Europe	S500231B-3002	S500231B-3002
=HE03+DA04-EG01	1		Dry Cooler, 100kW, With Ventilators (Offshore)	EVAPCO Europe A/S	FA091 Series Dry Cooler	FA091ELNHD-151-IHD-30-3,1-Sp
=HE03+DA01-GP11	1		Centrifugal pump, with electric motor, end suction, EN 733	Grundfos AS	NB 40-125/139	98309267
=HE03+DA01-QM01	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM02	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM03	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM04	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM05	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM06	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM07	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM08	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM09	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM10	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM11	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM12	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM13	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM14	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM15	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM16	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QM17	1		Ball valve, Quarter turn, DN65	Mars Valve Europe	CF8M Series Ball Valve	418S18065
=HE03+DA01-QM18	1		Ball valve, Quarter turn, DN65	Mars Valve Europe	CF8M Series Ball Valve	418S18065
=HE03+DA01-QM19	1		Ball valve, Quarter turn, DN65	Mars Valve Europe	CF8M Series Ball Valve	418S18065
=HE03+DA01-QM20	1		Ball valve, Quarter turn, DN65	Mars Valve Europe	CF8M Series Ball Valve	418S18065
=HE03+DA01-QM27	1		Ball valve, Quarter turn, DN65	Mars Valve Europe	CF8M Series Ball Valve	418S18065
=HE03+DA03-QM01	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S18025
=HE03+DA01-QN01	1		3-way flow control valve, Stainless steel, Internal thread, DN50, PN25	Belimo Holding AG	H3S Series Globe Valve	H3S05-P
=HE03+DA01-QN01.MA01	1		Actuator, for globe valves, modulating, 1500N force	Belimo Holding AG	SVC Series Modulaing Actuators	SVC24A-SR-TPC
=HE03+DA04-RM01	1		De-aerator, Stainless, For coolant containing 50% glycol, 3/8"	Brdr AO Johansen	Aeromat Series	
=HE03+DA01-X27	1		Polyamide Flexible Tubing, Ø10x8,0	Parker Hannifin		100P1000
=HE03+DA01-X28	1		Polyamide Flexible Tubing, Ø10x8,0	Parker Hannifin		100P1000

Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	++ | + | & B02

Design:	PBL
Review:	RBS
Approval:	JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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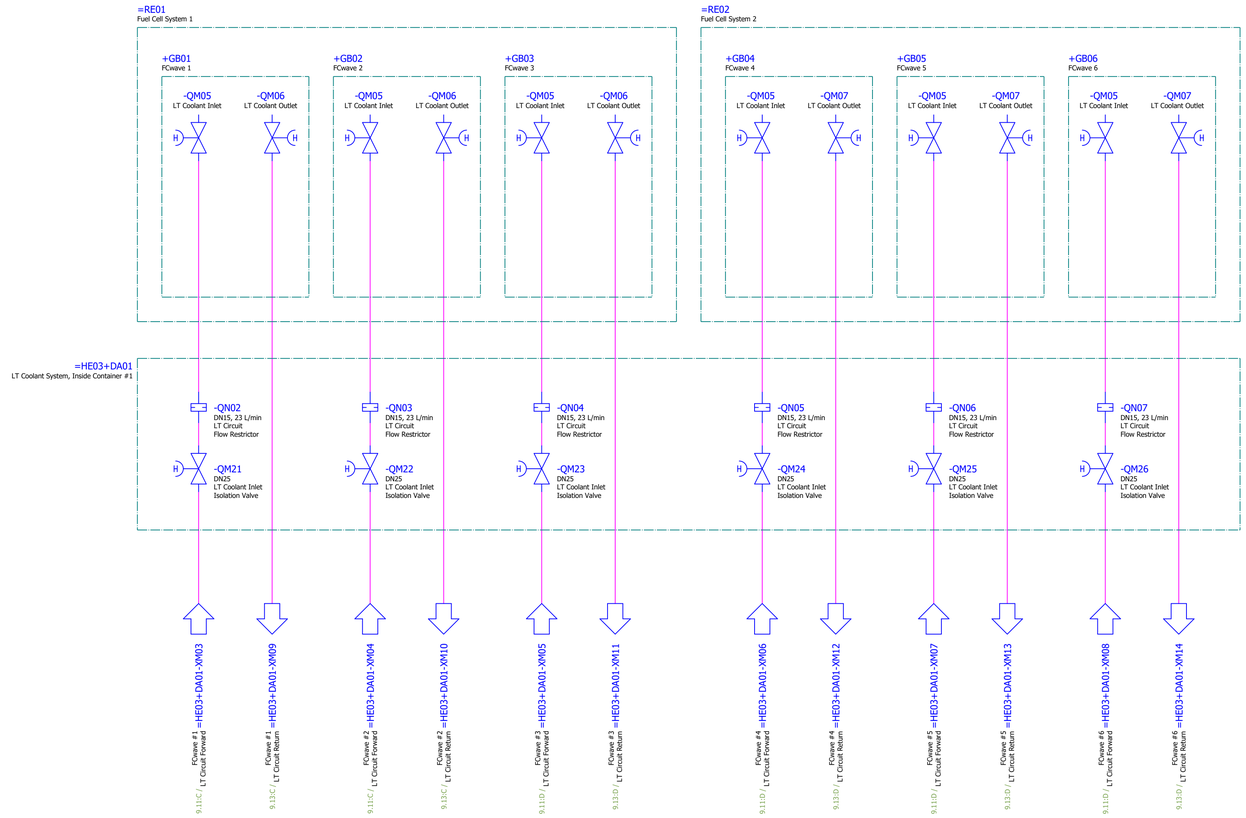
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	LT Coolant System - Overview
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 9 / 16

FRMS103653/0B

Low Temperature Cooling System - Fuel Cell Connections



Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=HE03+DA01-QM21	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QM22	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QM23	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QM24	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QM25	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QM26	1		Ball valve, Quarter turn, DN25	Mars Valve Europe	CF8M Series Ball Valve	418S1802S
=HE03+DA01-QN02	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=HE03+DA01-QN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=HE03+DA01-QN04	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=HE03+DA01-QN05	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=HE03+DA01-QN06	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=HE03+DA01-QN07	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	++ | + | & B02

Design:	PBL
Review:	RBS
Approval:	JTA

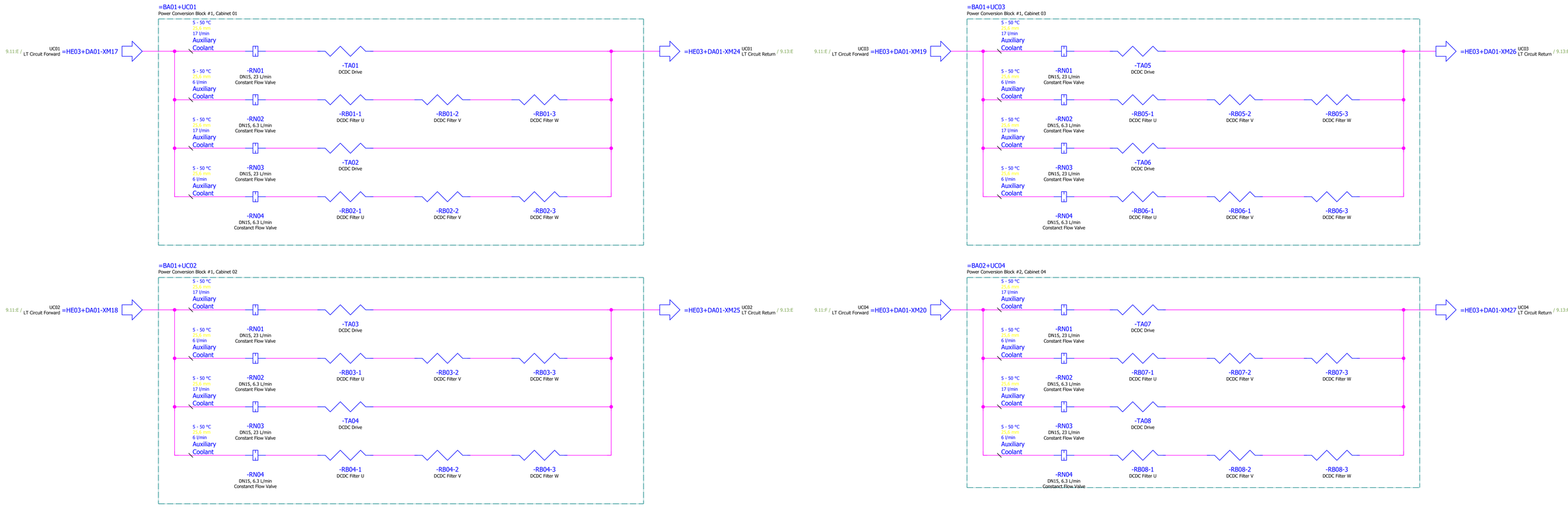
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DESCRIPTION	
DATE	
15-Sep-25	

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DRAWING	K559-2254-CWIWP202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	LT Coolant System - Fuel Cells
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 10 / 16

Low Temperature Cooling System - Power Converter Connections 1/2



Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=BA01+UC01-RB01-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RB01-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RB01-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RB02-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RB02-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RB02-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB03-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB03-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB03-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB04-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB04-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC02-RB04-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC03-RB05-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC03-RB05-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC03-RB05-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC03-RB06-1	2		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC03-RB06-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA01+UC01-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC01-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC01-RN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC01-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC02-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC02-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC02-RN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC02-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC03-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC03-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC03-RN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA01+UC03-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA01+UC01-TA01	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA01+UC01-TA02	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA01+UC02-TA03	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA01+UC02-TA04	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA01+UC03-TA05	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
- ++	+ & B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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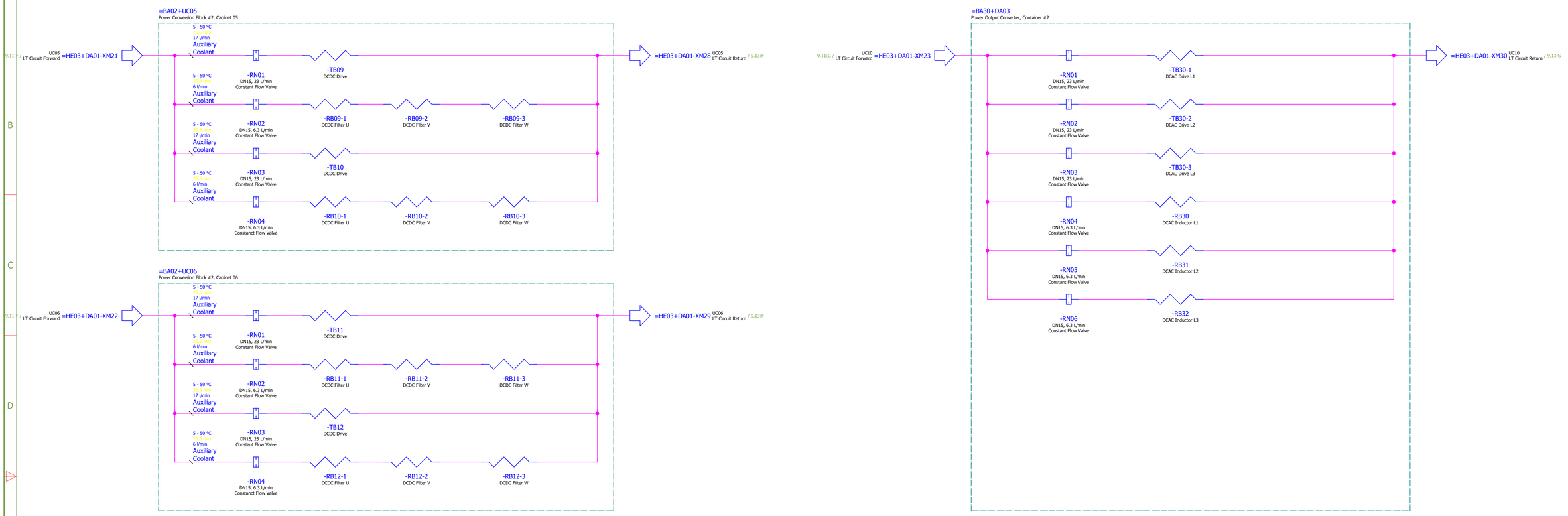
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DRAWING	K559-2254-CW1WP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	LT Coolant System - Power Converters 1/2
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 · LANGUAGE EN · SHEET/TOTAL 11 / 16

FRM510365 3/08

Low Temperature Cooling System - Power Converter Connections 2/2



Coolant type: proviflow Neo 50/50 %vol ethylene glycol

Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=BA02+UC05-RB09-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC05-RB09-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC05-RB09-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC05-RB10-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC05-RB10-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC05-RB10-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB11-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB11-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB11-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB12-1	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB12-2	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA02+UC06-RB12-3	1		Heat Exchanger, for liquid cooled DC inductors, 168A, 1050V	QA Trafotek Oy	181B5969	
=BA30+DA03-RB30	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905
=BA30+DA03-RB31	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905
=BA30+DA03-RB32	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905
=BA02+UC05-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA02+UC05-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA02+UC05-RN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA02+UC05-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA02+UC06-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA02+UC06-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA02+UC06-RN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA02+UC06-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA30+DA03-RN01	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP
=BA30+DA03-RN02	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA30+DA03-RN03	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA30+DA03-RN04	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA30+DA03-RN05	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA30+DA03-RN06	1		Valve, Constant Flow, DN15, 6,3 L/min	Bertfeld Teknik AB		117115P63LP
=BA02+UC05-TB09	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA02+UC05-TB10	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA02+UC06-TB11	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA02+UC06-TB12	1		Heat exchanger, Frame FR8 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FR08901
=BA30+DA03-TB30-1	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905
=BA30+DA03-TB30-2	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905
=BA30+DA03-TB30-3	1		Heat exchanger, Frame CH64 for NXP series	Danfoss	FR8 Chassis Heat Exchanger	FW64905

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
-	++ | + | & B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	LT Coolant System - Power Converters 2/2
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 12 / 16

FRM510365 3/0B

0	1	2	3	4	5	6	7	8

Bill of Materials / Parts List

Device tag	Qty	Unit	Description	Manufacturer			
				Name	Type Number	Order Number	
-BF01	1	Piece	Flow sensor, Connector: 1 x M12; coding: A; Contacts: gold-plated	IFM Electronic AS	SAEXXXXB50KG/US-100	SA4104	
-BF01-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BF01-XD01	0						
-BF01-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BF01-XG01	0						
-BL01-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BL01-XG01	0						
-BL01	1	Piece	Pressure transmitter with ceramic measuring cell, DC, analogue signal	IFM Electronic AS	PA-,10BRBG14-A-ZVG/US/ /V	PA3589	
-BP01	1	piece	Differential Pressure Sensor Water 0...4 bar AC/DC 24 V, Output signal 0...10 V	Belimo Holding AG	22WDP-134	22WDP-134	
-BP01-WG01	1	meter	ÖLFLEX CLASSIC 110 CH 3G1	Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035056	
-BP01-XD01	0						
-BP02	0						
-BP02-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP02-XG01	0						
-BP03-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP03-XG01	0						
-BP04	0						
-BP04-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP04-XG01	0						
-BP05	0						
-BP05-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP05-XG01	0						
-BP06	0						
-BP06-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP06-XG01	0						
-BP07	0						
-BP07-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BP07-XG01	0						
-BT01	1		PT1000 Sensor Element, Length 160mm to M12, A code connector. 3/4 wire measurement	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250	
-BT02	1		PT1000 Sensor Element, Length 160mm to M12, A code connector. 3/4 wire measurement	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250	
-BT03	1		PT1000 Sensor Element, Length 160mm to M12, A code connector. 3/4 wire measurement	IFM Electronic AS	TT-100KBBD06- /US/ /V	TT1250	
-BT04-XG01	0						
-BT05-XG01	0						
-BT05-WG01	1	Piece	Connecting cable with socket; 4x0,34mm2, AC/DC < 50 V; 10 m M12 to open end; LSZH	IFM Electronic AS	ADOGH040VAT0025H04/3G/2D	EVC540	
-BT05-XG01	0						
-CL01	1		Header Tank, Volume 100L, AISI 304	Ballard Power Systems Europe	5500231B-3002	5500231B-3002	
-EG01	1		Dry Cooler, 100kW, With Ventilatiors (Offshore), Tube 316, Fins AlMg/316, Frame 316	EVAPCO Europe A/S	FA091 Series Dry Cooler	FA091ELNHD-151-IHD-30-3,1-Sp	
-GP11	1		Centrifugal pump, with electric motor, end suction, EN 733, Motor: 4kW, 3x380-415D, 50Hz	Grundfos AS	NB 40-125/139	98309267	
-GP11-WG01	1	m	ÖLFLEX CLASSIC 110 Control Line	Lapp Group	ÖLFLEX CLASSIC 110	1119 203	
-GP11-WG01	0						
-GP11.WD01	1	meter	Screened control cable, 4G2,5mm2, LSZH	Lapp Group	ÖLFLEX® CLASSIC 135 CH	1123342	
-GP11.WD02	1	meter	Screened control cable, 4G2,5mm2, LSZH	Lapp Group	ÖLFLEX® CLASSIC 135 CH	1123342	
-GP11.WG02	1	meter		Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035059	
-GQ31	1		Three-phase asynchronous motor, 4 pole pairs, 4,0kW	Fabrika A/S	Fabrika CX B14 TEAO	CXB14-4	
-GQ31-WD01	1	meter	ÖLFLEX CLASSIC 135 CH BK 0,6/1 kV 4G2,5	Lapp Group	ÖLFLEX® CLASSIC 135 CH BK 0,6/1 kV	1123478	
-QM01	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM02	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM03	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM04	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM05	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM06	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM07	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM08	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM09	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM10	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM11	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
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REVISION INFORMATION
DESCRIPTION
DATE
15-Sep-25

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DRAWING		REVISION	12
DRAWING TITLE			
SHEET TYPE/DESC	LT Coolant System - BOM		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 13 / 15

0	1	2	3	4	5	6	7	8

Bill of Materials / Parts List

Device tag	Qty	Unit	Description	Manufacturer			
				Name	Type Number	Order Number	
-QM12	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM13	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM14	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM15	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM16	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM17	1		Ball valve, Quarter turn, DN65, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518065	
-QM18	1		Ball valve, Quarter turn, DN65, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518065	
-QM19	1		Ball valve, Quarter turn, DN65, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518065	
-QM20	1		Ball valve, Quarter turn, DN65, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518065	
-QM21	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM22	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM23	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM24	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM25	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM26	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QM27	1		Ball valve, Quarter turn, DN65, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518065	
-QM01	1		Ball valve, Quarter turn, DN25, Material body, valve AISI304, gasket and sealing ring PTFE	Mars Valve Europe	CF8M Series Ball Valve	418518025	
-QN01	1		3-way flow control valve, Stainless steel, Internal thread, DN50, PN25	Belimo Holding AG	H3S Series Globe Valve	H350S-P	
-QN01.MA01	1		Actuator, for globe valves, modulating, 1500N force	Belimo Holding AG	SVC Series Modulaing Actuators	SVC24A-SR-TPC	
-QN01.WG01	1	meter		Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035059	
-QN01.WG02	1	meter		Lapp Group	ÖLFLEX® CLASSIC 110 CH	10035059	
-QN02	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-QN03	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-QN04	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-QN05	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-QN06	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-QN07	1		Valve, Constant Flow, DN15, 23 L/min	Bertfeld Teknik AB		117115P230LP	
-RM01	1		De-aerator, Stainless, For coolant containing 50% glycol, 3/8"	Brdr AO Johansen	Aeromat Series		
-TA11	2	PIECES	Safe Torque off & ATEX board for VACON® NXP 2DI,1RO(NO/NC), 1RO(NO), 1TI Slot B	Danfoss	OPT-AF	OPT-AF-V	
-TA11	2	pieces	VFD , Input voltage: 3x 380-500 VAC, Output Power: 4 kW	Danfoss	NXP00095-A5H1SSV	NXP00095-A5H1SSV	
-TA11	0						
-TA11	2	pieces	Vacon NX, Ethernet option board with two RJ-45 connectors SLOT: D, E	Danfoss	OPT-E9	OPT-E9-V	
-TF01	1		Signal Converter Voltage/Current, Input 0-10V or (0)4-20mA, Output (0)4-20mA	Belimo Holding AG	Z-UIC	Z-UIC	
-X27	1		Polyamide Flexible Tubing, Ø10x8,0 - OD 10mm, ID 8mm, 50barg, -40 to 100°C	Parker Hannifin		100P1000	
-X28	1		Polyamide Flexible Tubing, Ø10x8,0 - OD 10mm, ID 8mm, 50barg, -40 to 100°C	Parker Hannifin		100P1000	

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	601456B - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
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REVISION INFORMATION
DESCRIPTION
DATE
15-Sep-25

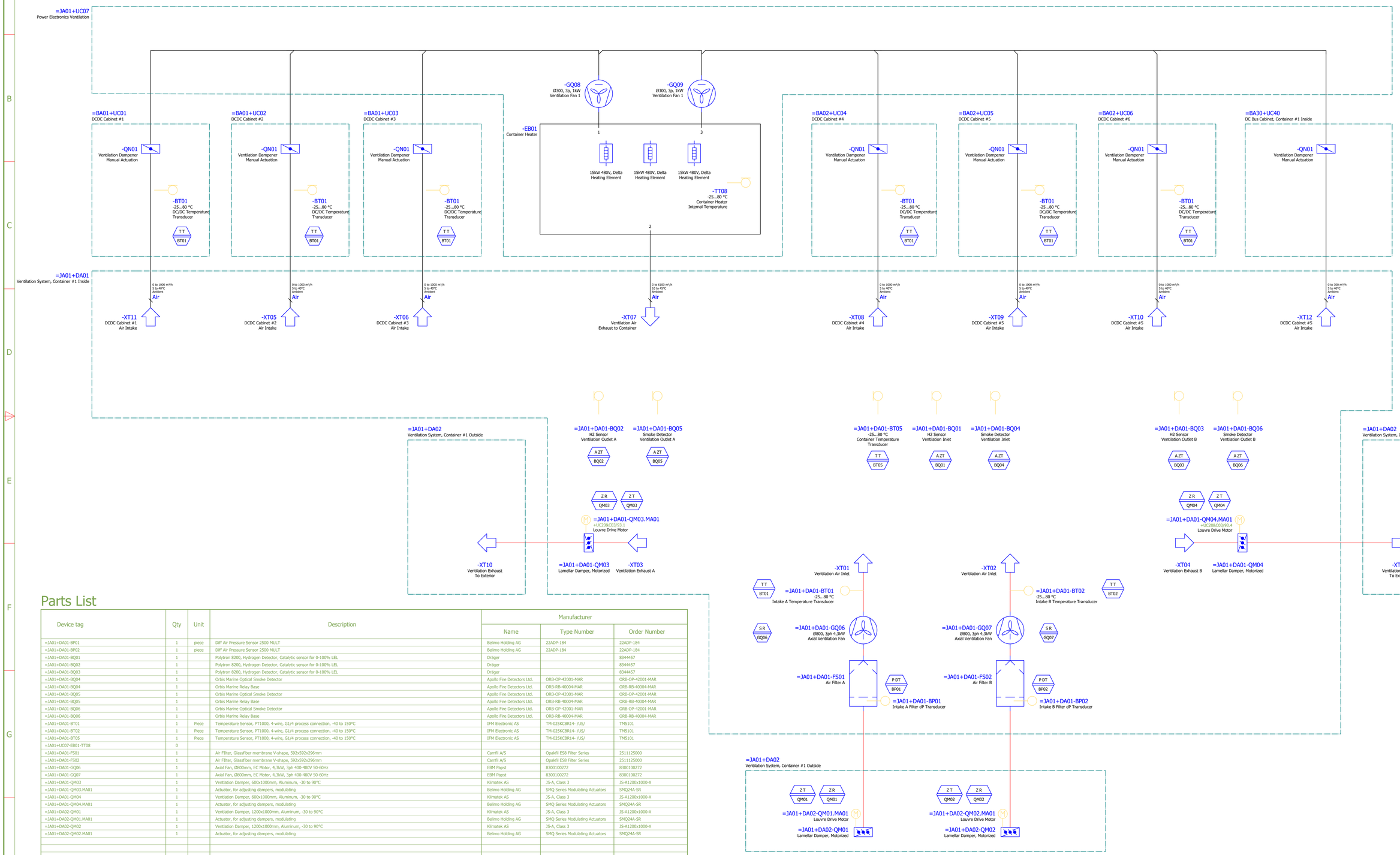
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DRAWING		REVISION	12
DRAWING TITLE			
SHEET TYPE/DESC	LT Coolant System - BOM		
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A3	LANGUAGE EN	SHEET/TOTAL 13.a / 15

Ventilation Air System - 40ft Container



Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=JA01+DA01-BP01	1	piece	Diff Air Pressure Sensor 2500 MULT	Belimo Holding AG	22ADP-184	22ADP-184
=JA01+DA01-BP02	1	piece	Diff Air Pressure Sensor 2500 MULT	Belimo Holding AG	22ADP-184	22ADP-184
=JA01+DA01-BQ01	1		Polytron 8200, Hydrogen Detector, Catalytic sensor for 0-100% LEL	Dräger		8344457
=JA01+DA01-BQ02	1		Polytron 8200, Hydrogen Detector, Catalytic sensor for 0-100% LEL	Dräger		8344457
=JA01+DA01-BQ03	1		Polytron 8200, Hydrogen Detector, Catalytic sensor for 0-100% LEL	Dräger		8344457
=JA01+DA01-BQ04	1		Orbis Marine Optical Smoke Detector	Apollo Fire Detectors Ltd.	ORB-OP-42001-MAR	ORB-OP-42001-MAR
=JA01+DA01-BQ04	1		Orbis Marine Relay Base	Apollo Fire Detectors Ltd.	ORB-RB-40004-MAR	ORB-RB-40004-MAR
=JA01+DA01-BQ05	1		Orbis Marine Optical Smoke Detector	Apollo Fire Detectors Ltd.	ORB-OP-42001-MAR	ORB-OP-42001-MAR
=JA01+DA01-BQ05	1		Orbis Marine Relay Base	Apollo Fire Detectors Ltd.	ORB-RB-40004-MAR	ORB-RB-40004-MAR
=JA01+DA01-BQ06	1		Orbis Marine Optical Smoke Detector	Apollo Fire Detectors Ltd.	ORB-OP-42001-MAR	ORB-OP-42001-MAR
=JA01+DA01-BQ06	1		Orbis Marine Relay Base	Apollo Fire Detectors Ltd.	ORB-RB-40004-MAR	ORB-RB-40004-MAR
=JA01+DA01-BT01	1	Piece	Temperature Sensor, PT1000, 4-wire, G1/4 process connection, -40 to 150°C	IFM Electronic AS	TM-025KCBR14- /US/	TM5101
=JA01+DA01-BT02	1	Piece	Temperature Sensor, PT1000, 4-wire, G1/4 process connection, -40 to 150°C	IFM Electronic AS	TM-025KCBR14- /US/	TM5101
=JA01+DA01-BT05	1	Piece	Temperature Sensor, PT1000, 4-wire, G1/4 process connection, -40 to 150°C	IFM Electronic AS	TM-025KCBR14- /US/	TM5101
=JA01+UC07-EB01-TT08	0					
=JA01+DA01-FS01	1		Air Filter, Glassfiber membrane V-shape, 592x592x296mm	Camfil A/S	Opakfil ES8 Filter Series	2511125000
=JA01+DA01-FS02	1		Air Filter, Glassfiber membrane V-shape, 592x592x296mm	Camfil A/S	Opakfil ES8 Filter Series	2511125000
=JA01+DA01-GQ06	1		Axial Fan, Ø800mm, EC Motor, 4,3kW, 3ph 400-480V 50-60Hz	EBM Papst	8300100272	8300100272
=JA01+DA01-GQ07	1		Axial Fan, Ø800mm, EC Motor, 4,3kW, 3ph 400-480V 50-60Hz	EBM Papst	8300100272	8300100272
=JA01+DA01-QM03	1		Ventilation Damper, 600x1000mm, Aluminum, -30 to 90°C	Klimatek AS	JS-A, Class 3	JS-A1200x1000-X
=JA01+DA01-QM03.MA01	1		Actuator, for adjusting dampers, modulating	Belimo Holding AG	SMQ Series Modulating Actuators	SMQ24A-SR
=JA01+DA01-QM04	1		Ventilation Damper, 600x1000mm, Aluminum, -30 to 90°C	Klimatek AS	JS-A, Class 3	JS-A1200x1000-X
=JA01+DA01-QM04.MA01	1		Actuator, for adjusting dampers, modulating	Belimo Holding AG	SMQ Series Modulating Actuators	SMQ24A-SR
=JA01+DA02-QM01	1		Ventilation Damper, 1200x1000mm, Aluminum, -30 to 90°C	Klimatek AS	JS-A, Class 3	JS-A1200x1000-X
=JA01+DA02-QM01.MA01	1		Actuator, for adjusting dampers, modulating	Belimo Holding AG	SMQ Series Modulating Actuators	SMQ24A-SR
=JA01+DA02-QM02	1		Ventilation Damper, 1200x1000mm, Aluminum, -30 to 90°C	Klimatek AS	JS-A, Class 3	JS-A1200x1000-X
=JA01+DA02-QM02.MA01	1		Actuator, for adjusting dampers, modulating	Belimo Holding AG	SMQ Series Modulating Actuators	SMQ24A-SR

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
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Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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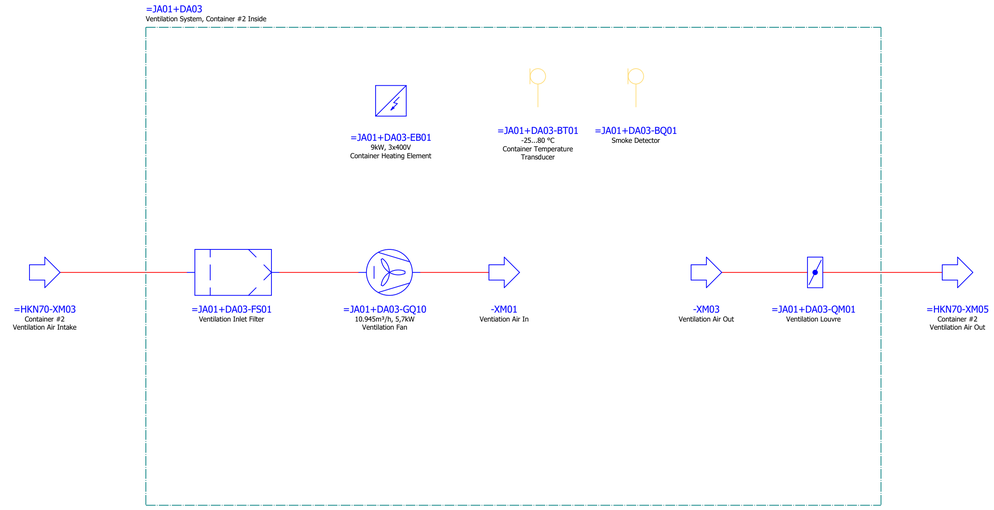
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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	Ventilation Air System - 40ft Container
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 | LANGUAGE EN | SHEET/TOTAL 14 / 16

FRMS103653/08

Ventilation Air System - 10ft Container



Parts List

Device tag	Qty	Unit	Description	Manufacturer		
				Name	Type Number	Order Number
=JA01+DA03-BQ01	1		Orbis Marine Optical Smoke Detector	Apollo Fire Detectors Ltd.	ORB-OP-42001-MAR	ORB-OP-42001-MAR
=JA01+DA03-BQ01	1		Orbis Marine Relay Base	Apollo Fire Detectors Ltd.	ORB-RB-40004-MAR	ORB-RB-40004-MAR
=JA01+DA03-BT01	1	Piece	Temperature Sensor, PT1000, 4-wire, G1/4 process connection, -40 to 150°C	IFM Electronic AS	TM-025KCBR14- /US/	TM5101
=JA01+DA03-EB01	1		Placeholder			
=JA01+DA03-FS01	0					
=JA01+DA03-GQ10	1		Ventilation Fan, Radial, EC Motor, 3ph, 400-480V, 5.7kW	EBM Papst		
=JA01+DA03-QM01	0					

Reference Item Number	Ballard Part # TBD
EPLAN Project Name	6014568 - Shell Baseload Power Hub
EPLAN Revision	12
EPLAN Project Pages	574
=	+ +
+	& B02

Design: PBL
Review: RBS
Approval: JTA

REVISION INFORMATION	
DESCRIPTION	
DATE	15-Sep-25

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DRAWING	K559-2254-CWIWP4202202-C03-001
REVISION	12
DRAWING TITLE	Crosswind/Shell Baseload Power Hub, Fuel Cell Container 1MW, no BESS
SHEET TYPE/DESC	Ventilation Air System - 10ft Container
ALL SHEETS ARE THE SAME REVISION STATUS	SIZE A1 · LANGUAGE EN · SHEET/TOTAL 15 / 16

FRMS103653/0B