Base Load Power Hub (BLPH)

Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

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Revision / Change Log

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1.	
2.	
3.	
4.	

Procurement Data Sheet for Low-voltage Switchgear and Controlgear (IEC)

JIP33
JOINT INDUSTRY PROGRAMME

Revision history

VERSION	DATE	PURPOSE
3,0	December 2022	Third Edition
2,0	November 2016	Second Edition
1,0	June 2016	First Edition

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This IOGP Specification was prepared by a Joint Industry Programme 33 Standardization of Equipment Specifications for Procurement organized by IOGP with support by the World Economic Forum (WEF).

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IOGP S-560D (3.0) Procurement Data Sheet for Low-voltage Switchgear and Controlgear (IEC)

Foreword

This specification was prepared under Joint Industry Programme 33 (JIP33) "Standardization of Equipment Specifications for Procurement" organized by the International Oil & Gas Producers Association (IOGP) with the support from the World Economic Forum (WEF). Companies from the IOGP membership participated in developing this specification to leverage and improve industry level standardization globally in the oil and gas sector. The work has developed a minimized set of supplementary requirements for procurement, with life cycle cost in mind, resulting in a common and jointly agreed specification, building on recognized industry and international standards.

Recent trends in oil and gas projects have demonstrated substantial budget and schedule overruns. The Oil and Gas Community within the World Economic Forum (WEF) has implemented a Capital Project Complexity (CPC) initiative which seeks to drive a structural reduction in upstream project costs with a focus on industry-wide, non-competitive collaboration and standardization. The CPC vision is to standardize specifications for global procurement for equipment and packages. JIP33 provides the oil and gas sector with the opportunity to move from internally to externally focused standardization initiatives and provide step change benefits in the sector's capital projects performance.

This specification has been developed in consultation with a broad user and supplier base to realize benefits from standardization and achieve significant project and schedule cost reductions.

The JIP33 work groups performed their activities in accordance with IOGP's Competition Law Guidelines (November 2020).

This third edition cancels and replaces the second edition published in November 2016. Due to technical writing requirements leading to extensive changes, this third edition should be treated as a new document.

IOGP S-560D (3.0) Procurement Data Sheet for Low-voltage Switchgear and Controlgear (IEC)

Introduction

The purpose of this procurement data sheet is to define purchaser specific requirements for the procurement of low-voltage switchgear and controlgear in accordance with IOGP S-560 for application in the petroleum and natural gas industries. The procurement data sheet provides project specific requirements where the specification requires the purchaser to define an application specific requirement. It also includes information required by the purchaser for technical evaluation purposes. Additional purchaser supplied documents can be listed in the procurement data sheet to define scope and technical requirements for enquiry and purchase of the equipment.

This procurement data sheet shall be used in conjunction with the specification (IOGP S-560), information requirements specification (IOGP S-560L) and quality requirements specification (IOGP S-560Q) which together comprise the full set of specification documents. The introduction section in the specification provides further information on the purpose of each of these documents and the order of precedence for their use.



JIP33 Specification for Procurement Documents
Procurement Data Sheet

IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
1		**Identifier**						
2		Tag number :	SG-200D2		SG-200D2			
3		Tag description :	LV Switchgears		LV Switchgears			
4		**General information**						
5		Conformity assessment system (CAS) level :	D		D			
6		Project country :	Netherlands		Netherlands			
7		Project region :	Netherlands		Netherlands			
8		**Electrical system**						
9	8.6.1	Earthing system :	IT		IT			02
10		System configuration phases/wires :	3-phase 3-wire		3-phase 3-wire			
11		**Voltage ratings**						
12	5.2.1	Nominal voltage of supply system :	800	V	800	V		
13		Transient overvoltages :	category III		category III			
14		**Current ratings**						
15	5.3.1	Rated current of assembly busbars (I_{nA}) :	630	A	630	A		
16	6,1	Rated peak withstand current (I_{pk}) :	25	kA	63	kA		
17	6.1,9.3.1	Rated short-time withstand current (I_{cw}) :	10	kA	30	kA		
18	6,1	Rated short-time withstand current (I_{cw}) time duration :	1	s	1	s		
19		Short-circuit current in neutral conductor and in protective circuit :	60	%	other	%	Not applicable	
20		**Rated diversity factor (RDF)**						
21		Assumed loading factor distribution - 1 circuit :	1,0		1,0			
22		Assumed loading factor distribution - 2 and 3 circuits :	0,9				Not applicable	
23		Assumed loading factor distribution - 4 and 5 circuits :	0,8				Not applicable	
24		Assumed loading factor distribution - 6 and 9 circuits :	0,6				Not applicable	
25		Assumed loading factor distribution - 10 or more circuits :	0,7				Not applicable	
26		Assumed loading factor electric actuator (MOV) :	0,2				Not applicable	
27		Assumed loading factor motors rated less than or equal to 100 kW :	0,8				Not applicable	
28		Assumed loading factor motors rated greater than 100 kW :	1				Not applicable	
29		**Rated frequency (f_n)**						
30	5,5	Rated frequency (f_n) :	50	Hz	50	Hz		
31		**Other characteristics**						
32	8.102.1	Mounting arrangement :	longitudinal channels flush with floor		longitudinal channels flush with floor			
33		**Information relating to assembly**						
34		Language used for all provided information :	English		English			
35		**Instructions for handling, installation, operation and maintenance**						
36	6.2.2	Lifting device for withdrawable parts heavier than 25 kg :	not required		not required			
37		**Device and/or component identification**						
38		Main component, primary identification language :	English		English			
39		Mimic (synoptic) diagrams :	required		select		Not applicable	
40		**Normal service conditions**						
41		Location type :	indoor climate controlled		indoor climate controlled			
42	8.102.3,8.102.4	Operating environment :	offshore – fixed		offshore – fixed			
43	7.1.1	Ambient air temperature - lower limit :	-8.4	°C	-8.4	°C		
44		Ambient air temperature - upper limit :	40	°C	40	°C		
45		Ambient air temperature - daily average maximum :	35	°C	35	°C		
46		Humidity conditions - maximum relative humidity :	95 % at −5 °C to +30 °C	%	95 % at −5 °C to +30 °C	%		
47		Pollution degree of macro-environment (of installation environment) :	3		3			
48		Altitude :	≤ 2 000	m	≤ 2 000	m		
49		**Special service conditions**						
50		Seismic activity zone in accordance with IEC 60721-2-6 :	not applicable		not applicable			
51		EMC environment :	A		A			
52	8.102.3,8.102.4	Maximum rolling of vessel in dynamic conditions :	not applicable		not applicable			
53	8.102.3,8.102.4	Maximum pitching of vessel in dynamic conditions :	not applicable		not applicable			
54		**Storage and handling**						
55		Storage and handling environmental conditions :	within IEC default conditions		within IEC default conditions			
56		**Degree of protection provided by assembly enclosure**						
57		Minimum external mechanical impact protection :	IK08		IK08			
58	8.2.2	Protection against ingress of solid foreign bodies and ingress of water :	IP 2X		IP30			
59		**Protection against electric shock**						
60		Type of protection against electric shock - basic protection :	constructional (manufacturer's standard)		constructional (manufacturer's standard)			
61		Type of protection against electric shock - fault protection :	automatic disconnection of supply		automatic disconnection of supply			
62		Access to manually operated devices :	authorized persons		authorized persons			
63	8.5.5.101.7	Closed compartment doors :	hasp and padlock		manufacturer's standard locking facility		Door with hinged with key lock.	
64	8.2.3	Safety shutters, disconnectors and switches :	hasp and padlock		manufacturer's standard locking facility		ACBs are equipped with key locks.	
65	8.5.5.101.7	Padlock provider :	manufacturer supplied		user supplied			
66		**Withdrawable parts (IEC 61439-2)**						
67	8.5.101	Type of electrical connections for outgoing functional units rated up to and including 630 A :	withdrawable		withdrawable		Circuit breaker withdrawable	
68	8.5.2.101	Facility to remotely test withdrawn functional units :	required		not required			
69		**Selection of switching devices and components**						
70	8.5.3.101.2	Incoming unit switching device requirement :	withdrawable ACB		withdrawable ACB			
71		Bus coupler switching device requirement :	withdrawable ACB		withdrawable ACB			
72	8.5.3,8.5.3.104.1	Main circuit protection for lighting and small power feeders :	MCCB/MCB		MCCB/MCB			
73	8.5.3.104.1,8.5.3.105.1	Main circuit protection for motor starters and contactor feeders :	MCCB/MCB		MCCB/MCB			
74		**Air circuit breakers**						
75	8.5.3.103.2.5	Spring charging motor voltage :	110 V DC		230	V AC		
76		Air circuit breaker control voltage :	110 V DC		230	V AC		
77	8.5.3.103.2.10	Air circuit breaker auxiliary contact provision :	2 NO and 2 NC					
78		**Motor starters and contactor feeders**						
79	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control circuit voltage :	230 V AC		other		Not applicable	
80	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control power source :	internal within each bus section		other		Not applicable	
81	8.5.3.106.6	Earth fault front of compartment reset :	required		not required		Not applicable	
82		Minimum motor size for space heater :	not required	kW	not required	kW	Not applicable	
83		Motor space heater supply voltage :	230 V AC		other		Not applicable	
84		**Unearthed electrical supplies (IT)**						
85		Provision of portable insulation fault locator :	not required		not required			
86		**Accessibility**						
87	8.5.5.101.2	PSC-assembly physical configuration :	access front only		access front only			
88		**Auxiliary components**						
89	8.5.10.2.3.3,8.5.3.103.2.11	Test blocks for ACB protection relay injection testing :	required - manufacturer's standard		not required			
90	8.5.10.2.3.1	Energy and maximum demand metering accuracy :	class 0,5		class 1,0			
91		**Internal electrical circuits and connections**						
92	8.6.1	Main circuit busbar insulation :	required		required			

IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
93		Main circuit earth-neutral link within incoming circuit units :	required		required			
94		Auxiliary circuit wiring insulation type :	low smoke zero halogen		low smoke zero halogen			
95	8.6.5	Supplementary conductor marking by colour :	not required		not required			
96		**Terminals for external conductors**						
97		Incoming (supply) unit direction of external conductors :	from above		from above			
98	8,8	Incoming (supply) unit external conductor type :	cable		cable			
99		Outgoing (load) unit direction of external conductors :	from above		from above			
100	8,8	Outgoing (load) unit external conductor type :	cable		cable			
101		Auxiliary cable direction of external conductors :	from above		from above			
102		Auxiliary cable external conductor type :	cable		cable			
103		External conductor material :	copper		copper			
104	8,8	Multicore cable entry method :	multi-cable transit		multi-cable transit			
105	8,8	Single core cable entry method (non-magnetic) :	multi-cable transit		multi-cable transit			
106		Special glanding requirement :	none		none			
107		**Terminals for control and auxiliaries**						
108		Minimum spare unwired terminal provision for future use :	10 % spare		other		Not applicable	
109		**Internal separation of PSC-assemblies (IEC 61439-2:2020)**						
110	8.101]	Internal separation for ACB functional units :	Form 4 type 5		select		Form 3b	
111	8.101]	Internal separation for non-ACB functional units :	Form 4 type 5		Form 3b		Form 3b	
112		**Enclosure space heaters**						
113	8.103.1.1	Assembly enclosure space heater requirement :	required		required			
114	8.103.1.1	Assembly enclosure space heater voltage :	230 V AC		230 V AC			
115		Assembly enclosure space heater control method :	thermostat		thermostat			
116	8.103.3,8.103.2.1,8.103.2.2,8.103.3.1,8.103.3.2,8.103.3.3,8.103.3.4,8.103.3.5,8.103.3.6	Assembly enclosure space heater monitoring method :	not applicable		not applicable			
117		**Provision for future development**						
118		Provision of equipped spare functional outgoing units :	10%				Not applicable	
119		Provision of space for future outgoing functional units :	10%				Not applicable	
120		**Condition monitoring**						
121	8.105.2.1	Thermal monitoring :	not required		not required			
122		Circuit breaker condition monitoring :	not required		not required			
123		Motor condition monitoring equipment :	not required		not required			
124		**Interface with control systems**						
125		IED brand :	manufacturer's standard		manufacturer's standard		Ekip touch	
126		Process control interface (ICSS/DCS) media :	manufacturer's standard		ethernet (Cu)			
127		Process control interface (ICSS/DCS) protocol :	IEC 61850		Modbus TCP/IP			
128		Process control interface (ICSS/DCS) network redundancy :	not applicable		not applicable			
129		Electrical control interface (ECMS) media :	manufacturer's standard		other		Not applicable	
130		Electrical control interface (ECMS) protocol :	IEC 61850		other		Not applicable	
131		Electrical control interface (ECMS) network redundancy :	not applicable		not applicable			
132	8.5.3.106.10	IED remote configuration via ECMS :	not applicable		not applicable			
133		**Switchgear interlocking / intertripping interfaces**						
134		Interlocking / intertripping interface media :	hardwired discrete		hardwired discrete		Via software link with solar farm	
135		Interlocking / intertripping interface protocol :	hardwired		hardwired		Via software link with solar farm	
136		**Power management system (PMS) interfaces**						
137		IED to power management system interface media :	manufacturer's standard		other		Not applicable	
138		IED to power management system interface protocol :	IEC 61850		other		Not applicable	
139		IED to power management system network redundancy :	not applicable		not applicable			
140		**Generator control panel interfaces**						
141		IED to generator control panel interface media :	not required		not required			
142		IED to generator control panel interface protocol :	not required		not required			
143		**Cyber security**						
144		Security certification for industrial automation and control system components :	required		not required			
145		**Ratings of the internal arc classification (IAC)**						
146	6.1,9.3.1	IEC TR 61641:2014 arcing class :	arcing class C		select		Not arc resistant	
147	9.3.1	Permissible short-circuit current under arcing conditions ($I_{p\ arc}$) :	30	kA	NA	kA	Not arc resistant	
148	9.3.1	Permissible arc duration (t_{arc}) :	0,3	s	select	s	Not arc resistant	
149	9.3.1	Integrated internal arc-fault mitigation system (IAMS) :	not required		not required			
150		Internal arc-fault control device (IACD) type :	not required		not required			
151		Internal arc-fault reduction device (IARD) type :	not required		not required			
152		**Routine verification**						
153	11.101.1	ECMS simulation test :	not applicable		not applicable			
154		**Dimensions and accessories**						
155		Switchgear dimensions - SG-200D2	required	mm	1100 x 850 x 2250			
156		Switchgear weight - SG-200D2	required	kg	1000			

Row	IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel	Issue
2	**PURCHASE ORDER SPECIFIC REQUIREMENTS**	
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4	The column "Supplier offered value" must be entirely filled in by Supplier, the red color is imposed by the IOGP STANDARD	
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IOGP S-560D (3.0) Procurement Technical Data Sheet (TDS) - Solar Farm - In-Feed Power Isolator Panel

Guidance on the use of this procurement data sheet

To be used in conjunction with :
IOGP S-560 Supplementary Specification to IEC 61439-1 and IEC 61439-2 for Low-voltage Switchgear and Controlgear.

This procurement data sheet is designed to be used in MS Excel electronic format by the purchaser and the supplier.

This procurement data sheet, completed with requested values, should be delivered back to the purchaser by using the procurement data sheet template or other mutually agreed method.

Ref. Clause provides reference back to the parent standard or the supplementary specification where relevant.

Guidance specific to an item may be provided as a note in the description. This guidance is meant to provide a better understanding of the procurement data sheet item and/or an explanation of how to complete the input.

Additional notes may be used by the purchaser or supplier to provide additional information pertinent to the specification or supply of the equipment.

Issue should be used by the purchaser for revision purposes. After the first issue, for each subsequent revision of the procurement data sheet that is issued to suppliers for enquiry or purchase, the purchaser should use this column to denote that the data on a specific row has been updated since the previous revision. This enables the supplier to easily identify where changes have been made.

Default values (if applicable) have been set according to essential minimum requirements as an integral part of this specification and should only be changed where specific justification can be provided.

The **Supplement** worksheet is provided in an open format for application of specific items not covered in the main part of the procurement data sheet. This worksheet is not intended to modify requirements defined in the specification.

Purchaser requirement and **Purchaser requirement UOM** specify the functional and early design requirements of the equipment. Specified requirements allow the supplier to provide an offer to the purchaser.

Supplier offered value and **Supplier offered UOM** are used by the supplier to declare the offered value. Where the offered product characteristic differs from the **Purchaser requirement**, the cell shading is automatically updated (by conditional formatting) to highlight the deviation from the **Purchaser requirement**.

Requirement CFIHOS ID and **Equipment CFIHOS ID** are prepopulated and hidden in columns K and L of the procurement data sheet worksheet. The purpose of the CFIHOS IDs is to enable information exchange in a data-centric manner.

Legend

select	Purchaser completed, drop-down list of pre-defined values (may be prepopulated with a default value)
input data	Purchaser completed data entry
select	Supplier completed, drop-down list of pre-defined values
input data	Supplier completed data entry
select	Either supplier or purchaser completed, drop-down list of predefined values (may be prepopulated with a default value)
input data	Either supplier or purchaser completed data entry
select	Selection of units from a pre-defined drop-down list
select	No input expected
input data	No input expected
UOM	Fixed unit of measure
UOM	Fixed unit of measure
	No unit of measure (null)

Configuration of purchaser and supplier input columns
The following table, to be read alongside the above legend, shows the possible combinations of relationships between purchaser requirement and supplier offered values.

Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	
select	select	select	select
input data	select	input data	select
select	UOM	select	UOM
input data	UOM	input data	UOM
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select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	

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