Base Load Power Hub (BLPH)

Technical Data Sheet (TDS) for LV Switchgear

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Revision / Change Log

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00	ISSUE FOR REVIEW (IFR)
01	ACCEPTED FOR CONSTRUCTION (AFC)

HOLDS LIST

No.	Description
1.	
2.	
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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

Acknowledgements

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).

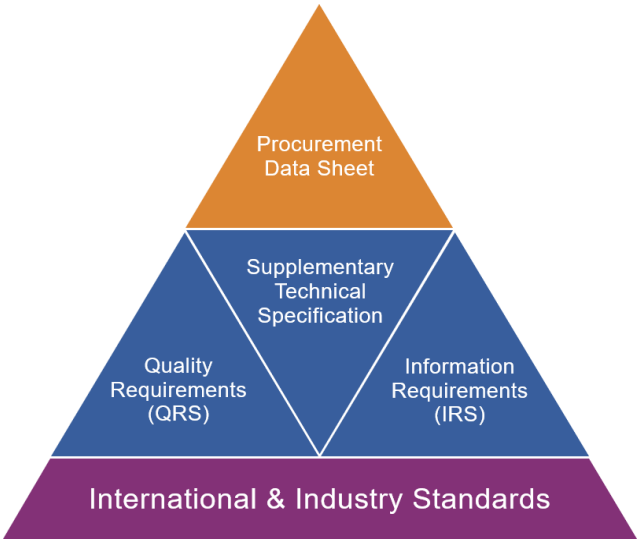
This third edition cancels and replaces the second edition published in November 2016. Due to technical writing requirements leading to extensive changes, this third edition should be treated as a new document.

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

Row	Ref. Clause	Description	Purchaser requirement	Purchaser requirement UOM	Supplier offered value	Supplier offered UOM	Additional notes	Issue
2								
3		**Identifier**						
4		Tag number :	SG-200N1		SG-200N1			
5		Tag description :	input data		input data			
6		**General information**						
7		Conformity assessment system (CAS) level :	D		D			
8		Project country :	Netherlands		Netherlands			
9		Project region :	Netherlands		Netherlands			
10		**Electrical system**						
11	8.6.1	Earthing system :	TN-S		TN-S			
12		System configuration phases/wires :	3-phase 4-wire		3-phase 4-wire			
13		**Voltage ratings**						
14	5.2.1	Nominal voltage of supply system :	400	V	400	V		
15		Transient overvoltages :	category III		category III			
16		**Current ratings**						
17	5.3.1	Rated current of assembly busbars (I_{nA}) :	2500	A	2500	A	At ambient temp 35°C	
18	6.1	Rated peak withstand current (I_{pk}) :	105	kA	105	kA		
19	6.1,9.3.1	Rated short-time withstand current (I_{cw}) :	50	kA	50	kA		
20	6.1	Rated short-time withstand current (I_{cw}) time duration :	1	s	1	s		
21		Short-circuit current in neutral conductor and in protective circuit :	60	%	60	%		
22		**Rated diversity factor (RDF)**						
23		Assumed loading factor distribution - 1 circuit :	1,0		1,0			
24		Assumed loading factor distribution - 2 and 3 circuits :	0.9		0.9			
25		Assumed loading factor distribution - 4 and 5 circuits :	0.8		0.8			
26		Assumed loading factor distribution - 6 and 9 circuits :	0.6		0.6			
27		Assumed loading factor distribution - 10 or more circuits :	0.7		0.7			
28		Assumed loading factor electric actuator (MOV) :	0.2		0.2			
29		Assumed loading factor motors rated less than or equal to 100 kW :	0.8		0.8			
30		Assumed loading factor motors rated greater than 100 kW :	1		1			
31		**Rated frequency (f_n)**						
32	5.5	Rated frequency (f_n) :	50	Hz	50	Hz		
33		**Other characteristics**						
34	8.102.1	Mounting arrangement :	longitudinal channels flush with floor		manufacturer's standard		Switchboard base frame to be bolted or welded to yard foundation	
35		**Information relating to assembly**						
36		Language used for all provided information :	English		English			
37		**Instructions for handling, installation, operation and maintenance**						
38	6.2.2	Lifting device for withdrawable parts heavier than 25 kg :	not required		not required		Recommended	
39		**Device and/or component identification**						
40		Main component, primary identification language :	English		English			
41		Mimic (synoptic) diagrams :	required		required			
42		**Normal service conditions**						
43		Location type :	indoor climate controlled		indoor climate controlled			
44	8.102.3,8.102.4	Operating environment :	offshore – fixed		offshore – fixed			
45	7.1.1	Ambient air temperature - lower limit :	-8.4	°C	-8.4	°C		01
46		Ambient air temperature - upper limit :	40	°C	40	°C		
47		Ambient air temperature - daily average maximum :	35	°C	35	°C		
48		Humidity conditions - maximum relative humidity :	95 % at −5 °C to +30 °C	%	95 % at −5 °C to +30 °C	%		
49		Pollution degree of macro-environment (of installation environment) :	3		3			
50		Altitude :	≤ 2 000	m	≤ 2 000	m		
51		**Special service conditions**						
52		Seismic activity zone in accordance with IEC 60721-2-6 :	not applicable		not applicable			
53		EMC environment :	A		A			
54	8.102.3,8.102.4	Maximum rolling of vessel in dynamic conditions :	not applicable		not applicable			
55	8.102.3,8.102.4	Maximum pitching of vessel in dynamic conditions :	not applicable		not applicable			
56		**Storage and handling**						
57		Storage and handling environmental conditions :	within IEC default conditions		within IEC default conditions			
58		**Degree of protection provided by assembly enclosure**						
59		Minimum external mechanical impact protection :	IK08		IK08			
60	8.2.2	Protection against ingress of solid foreign bodies and ingress of water :	IP 2X		other		IP30	01
61		**Protection against electric shock**						
62		Type of protection against electric shock - basic protection :	constructional (manufacturer's standard)		constructional (manufacturer's standard)			
63		Type of protection against electric shock - fault protection :	automatic disconnection of supply		automatic disconnection of supply			
64		Access to manually operated devices :	authorized persons		authorized persons			
65	8.5.5.101.7	Closed compartment doors :	hasp and padlock		manufacturer's standard locking facility		Door with hinged with key lock.	01
66	8.2.3	Safety shutters, disconnectors and switches :	hasp and padlock		manufacturer's standard locking facility		Drawers position and circuit breaker open can be locked with padlock.	01
67	8.5.5.101.7	Padlock provider :	manufacturer supplied		user supplied			
68		**Withdrawable parts (IEC 61439-2)**						
69	8.5.101	Type of electrical connections for outgoing functional units rated up to and including 630 A :	withdrawable		withdrawable			
70	8.5.2.101	Facility to remotely test withdrawn functional units :	required		not required			
71		**Selection of switching devices and components**						
72	8.5.3.101.2	Incoming unit switching device requirement :	withdrawable ACB		withdrawable ACB			
73		Bus coupler switching device requirement :	withdrawable ACB		withdrawable ACB			
74	8.5.3,8.5.3.104.1	Main circuit protection for lighting and small power feeders :	MCCB/MCB		MCCB/MCB			
75	8.5.3.104.1,8.5.3.105.1	Main circuit protection for motor starters and contactor feeders :	MCCB/MCB		MCCB/MCB			
76		**Air circuit breakers**						
77	8.5.3.103.2.5	Spring charging motor voltage :	110 V DC		manufacturer's standard		230V AC	
78		Air circuit breaker control voltage :	110 V DC		manufacturer's standard		230V AC	
79	8.5.3.103.2.10	Air circuit breaker auxiliary contact provision :	2 NO and 2 NC		2 NO and 2 NC			
80		**Motor starters and contactor feeders**						
81	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control circuit voltage :	110 V AC		230 V AC			
82	8.5.3.105.13,8.5.3.105.14,8.5.3.105.15	Contactor control power source :	internal within each functional unit		other		400V/230V transformer	
83	8.5.3.106.6	Earth fault front of compartment reset :	required		required			01
84		Minimum motor size for space heater :	not required	kW	not required	kW		
85		Motor space heater supply voltage :	230 V AC		230 V AC			
86		**Unearthed electrical supplies (IT)**						
87		Provision of portable insulation fault locator :	not required		not required			

88		**Accessibility**						
89	8.5.5.101.2	PSC-assembly physical configuration :	access front only		access front only			
90		**Auxiliary components**						
91	8.5.10.2.3.3,8.5.3.1 03.2.11	Test blocks for ACB protection relay injection testing :	required - manufacturer's standard		not required			
92	8.5.10.2.3.1	Energy and maximum demand metering accuracy :	class 0,5		class 1,5			
93		**Internal electrical circuits and connections**						
94	8.6.1	Main circuit busbar insulation :	required		required			
95		Main circuit earth-neutral link within incoming circuit units :	required		required			
96		Auxiliary circuit wiring insulation type :	low smoke zero halogen		low smoke zero halogen			
97	8.6.5	Supplementary conductor marking by colour :	not required		not required			
98		**Terminals for external conductors**						
99		Incoming (supply) unit direction of external conductors :	from above		from above			
100	8.8	Incoming (supply) unit external conductor type :	cable		cable			
101		Outgoing (load) unit direction of external conductors :	from above		from above			
102	8.8	Outgoing (load) unit external conductor type :	cable		cable			
103		Auxiliary cable direction of external conductors :	from above		from above			
104		Auxiliary cable external conductor type :	cable		cable			
105		External conductor material :	copper		copper			
106	8.8	Multicore cable entry method :	undrilled removable gland-plate		multi-cable transit			
107	8.8	Single core cable entry method (non-magnetic) :	undrilled removable gland-plate		multi-cable transit			
108		Special glanding requirement :	none		none			
109		**Terminals for control and auxiliaries**						
110		Minimum spare unwired terminal provision for future use :	10 % spare		10 % spare			
111		**Internal separation of PSC-assemblies (IEC 61439-2:2020)**						
112	8.101]	Internal separation for ACB functional units :	Form 4 type 5		Form 4b			01
113	8.101]	Internal separation for non-ACB functional units :	Form 4 type 5		Form 4b			01
114		**Enclosure space heaters**						
115	8.103.1.1	Assembly enclosure space heater requirement :	required		required			
116	8.103.1.1	Assembly enclosure space heater voltage :	230 V AC		230 V AC			
117		Assembly enclosure space heater control method :	thermostat		thermostat			01
118	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			
119		**Provision for future development**						
120		Provision of equipped spare functional outgoing units :	10%		one of each type			
121		Provision of space for future outgoing functional units :	10%		10%		Included in above point	01
122		**Condition monitoring**						
123	8.105.2.1	Thermal monitoring :	not required		not required			
124		Circuit breaker condition monitoring :	not required		not required			
125		Motor condition monitoring equipment :	not required		not required			
126		**Interface with control systems**						
127		IED brand :	manufacturer's standard		manufacturer's standard		N/A	
128		Process control interface (ICSS/DCS) media :	manufacturer's standard		manufacturer's standard			
129		Process control interface (ICSS/DCS) protocol :	IEC 61850		Modbus TCP/IP			01
130		Process control interface (ICSS/DCS) network redundancy :	not applicable		not applicable			
131		Electrical control interface (ECMS) media :	manufacturer's standard		manufacturer's standard			
132		Electrical control interface (ECMS) protocol :	IEC 61850		IEC 61850		Only for incoming protection relay	01
133		Electrical control interface (ECMS) network redundancy :	not applicable		not applicable			
134	8.5.3.106.10	IED remote configuration via ECMS :	not applicable		not applicable			
135		**Switchgear interlocking / intertripping interfaces**						
136		Interlocking / intertripping interface media :	hardwired discrete		hardwired discrete			
137		Interlocking / intertripping interface protocol :	hardwired		hardwired			
138		**Power management system (PMS) interfaces**						
139		IED to power management system interface media :	manufacturer's standard		manufacturer's standard			
140		IED to power management system interface protocol :	IEC 61850		other		Feeders with remote control are equipped with Ekip hi-Touche connected in Modbus TCP-IP woth control system to provide electrical measures.	01
141		IED to power management system network redundancy :	not applicable		not applicable			
142		**Generator control panel interfaces**						
143		IED to generator control panel interface media :	not required		not required			
144		IED to generator control panel interface protocol :	not required		not required			
145		**Cyber security**						
146		Security certification for industrial automation and control system components :	required		not required			
147		**Ratings of the internal arc classification (IAC)**						
148	6.1,9.3.1	IEC TR 61641:2014 arcing class :	arcing class C		arcing class C			
149	9.3.1	Permissible short-circuit current under arcing conditions ($I_{p\ arc}$) :	50	kA	50	kA		
150	9.3.1	Permissible arc duration (t_{arc}) :	0,3	s	0,3	s		
151	9.3.1	Integrated internal arc-fault mitigation system (IAMS) :	not required		not required			
152		Internal arc-fault control device (IACD) type :	not required		not required			
153		Internal arc-fault reduction device (IARD) type :	not required		not required			
154		**Routine verification**						
155	11.101.1	ECMS simulation test :	not applicable		not applicable			

Row		
2	**PURCHASE ORDER SPECIFIC REQUIREMENTS**	
3	Delete this sheet if not required	
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IOGP S-560D (3.0) Procurement Data Sheet for Low-voltage Switchgear and Controlgear (IEC)

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
select		select	
input data		input data	
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select	UOM	select	UOM
input data	UOM	input data	UOM
select		select	
input data		input data	

Registered Office
City Tower
Level 14
40 Basinghall Street
London EC2V 5DE
United Kingdom

T +44 (0)20 3763 9700
reception@iogp.org

Brussels Office
Avenue de Tervuren 188A
B-1150 Brussels
Belgium

T +32 (0)2 790 7762
reception-europe@iogp.org

Houston Office
15377 Memorial Drive
Suite 250
Houston, TX 77079
USA

T +1 (713) 261 0411
reception-americas@iogp.org

www.iogp.org

