International Association of Oil & Gas Producers

SPECIFICATION

IOGP S-732Q

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Version 1.1

Quality Requirements for Low Voltage Motor Control Centers (UL)

JIP33 JOINT INDUSTRY PROGRAMME

Revision history

VERSION	DATE	PURPOSE
1.1	July 2026	Issued for Public Review
1.0	December 2020	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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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).

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Introduction

The purpose of this quality requirements specification (QRS) is to specify quality management requirements and the proposed extent of purchaser intervention activities for the procurement of low voltage motor control centers in accordance with IOGP S-732 for application in the petroleum and natural gas industries.

Purchaser intervention activities are identified through the selection of one of four conformity assessment system (CAS) levels based on a risk and criticality assessment. The applicable CAS level is specified by the purchaser in the procurement data sheet (PDS) or purchase order.

The IOGP S-732 specification documents follow a common structure (as shown below) comprising a specification, also known as a technical requirements specification (TRS), a PDS, an information requirements specification (IRS) and this QRS. These four specification documents, together with the purchase order, define the overall technical specification for procurement.

JIP33 Specification for Procurement Documents
Quality Requirements Specification (QRS)

This QRS is to be applied in conjunction with the specification, the PDS and the IRS, referred to in this document as IOGP S-732, IOGP S-732D and IOGP S-732L respectively. Further information on the purpose of these documents and the order of precedence for their use is provided in the introduction of the specification.

1 Scope

This QRS specifies quality management requirements for the supply of low voltage motor control centers to IOGP S-732 including:

a) manufacturer quality management system (QMS) requirements;

b) purchaser conformity assessment (surveillance and inspection) activities;

c) traceability requirements.

2 Normative references

For the purpose of this document, the documents referenced in IOGP S-732 and those listed below, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

API Specification Q1, *Quality Management System Requirements for Organizations Providing Products for the Petroleum and Natural Gas Industry*

IOGP S-732, *Supplementary Specification to UL 845 for Low Voltage Motor Control Centers*

ISO 9000:2015, *Quality management systems — Fundamentals and vocabulary*

ISO 9001:2015, *Quality management systems — Requirements*

ISO 29001, *Petroleum, petrochemical and natural gas industries — Sector-specific quality management systems — Requirements for product and service supply organizations*

UL 845, *Motor Control Centers*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purpose of this document, the terms and definitions given in IOGP S-732 and ISO 9000:2015 (normative to ISO 9001:2015) and the following shall apply.

3.1.1
conformity assessment
demonstration that specified requirements are fulfilled

Note 1 to entry: "Conformity assessment" is also referred to as "assessment".

Note 2 to entry: Conformity assessment includes review, inspection, verification and validation activities.

Note 3 to entry: Conformity assessment activities may be undertaken at manufacturer/sub-supplier premises, virtually by video link, desktop sharing, etc. or by review of information.

3.1.2
conformity assessment system
CAS
system that provides different levels of purchaser interventions to assess and verify manufacturer conformance to specified requirements

Note 1 to entry: CAS level A applies to the highest risk and associated extent of verification. CAS level D is the lowest.

3.1.3
hold point
H
<conformity assessment> point in the chain of activities beyond which an activity shall not proceed without the approval of the purchaser or purchaser's representative

3.1.4
witness point
W
<conformity assessment> point in the chain of activities at which the manufacturer shall notify the purchaser or purchaser's representative before proceeding

Note 1 to entry: The operation or process may proceed without witness if the purchaser does not attend after the agreed notice period.

3.1.5
surveillance
S
<conformity assessment> observation, monitoring or review, by the purchaser or purchaser's representative, of an activity, operation, process, product or associated information

3.1.6
review
R
<conformity assessment> review of the manufacturer's records, procedures and supporting information to verify and/or validate conformance to requirements

3.2 Abbreviated terms

CAS conformity assessment system

HMI human machine interface

IRS information requirements specification

ITP inspection and test plan

PDS procurement data sheet

QMS quality management system

QRS quality requirements specification

TRS technical requirements specification

4 Quality requirements

4.1 Quality management system (QMS)

The manufacturer shall operate and maintain a quality management system (QMS) that conforms with ISO 9001, ISO 29001, API Specification Q1 or an equivalent QMS standard.

4.2 Conformity assessment system (CAS)

4.2.1

The CAS provides different levels of assessment of manufacturer control activities. The CAS level is defined by the purchaser using a risk-based approach and included in the purchase order / contract. The defined CAS level may be adjusted by the purchaser during manufacture based on the manufacturer's performance and re-assessment of risk.

NOTE For industrial proven solutions, CAS level D is specified unless risk assessment indicates that a more stringent CAS level is required.

4.2.2

Quality plans and inspection and test plans shall include provision for purchaser intervention activities based on the CAS level selected in the PDS or purchase order. See Table A.1.

4.2.3

The manufacturer's performance in meeting the requirements may be routinely assessed during execution of the scope and, where appropriate, corrective action requested, and conformity assessment activities may be increased or decreased consistent with criticality and risk.

4.2.4

If any subcontracted or scope of supply occurs outside of the primary manufacturer location, it shall include interventions within the primary inspection and test plan (ITP) or secondary ITP. It is discouraged to use "hold" (H) within Table A.1, section 3 and recommended to use "surveillance" (S).

5 Certification and traceability

5.1

The completed motor control center assembly shall be certified by a nationally recognized testing laboratory (accredited certification organization for Canada) to UL 845 and marked accordingly (listing mark).

5.2

The manufacturer shall maintain traceability of sub-assembly and major components to the original component manufacturer tag / serial number and where applicable, associated certification.

6 Evidence — conformance records

Documents and information shall be provided for in accordance with IOGP S-732L.

Annex A
(normative)
Purchaser conformity assessment requirements

Table A.1 defines four CAS levels or levels of purchaser assessment.

Table A.1 — Purchaser conformity assessment requirements

Purchaser assessment activities		CAS			
		A	B	C	D
1	**Operational planning and control activities**				
1.1	Pre-production planning (meeting)	H	W	R	-
2	**Design and development activities**				
2.1	No applicable activities	-	-	-	-
3	**Externally provided products and services (outsourced)**				
3.1	External supply scope, risk assessment and controls	H	W	S	-
3.2	Nominated sub-suppliers of circuit breakers and protective devices	H	W	-	-
4	**Production and service provision**				
4.1	Inspection and test activities as per IOGP S-732				
4.1.1	Visual and dimensional check (IOGP S-732, 6.3.64, 8.2.11, 8.2.13.19.1, 8.2.36.2, 8.2.36.3, 8.2.9.11)	H	W	S	-
4.1.2	Painting inspection (IOGP S-732, 8.2.6, 8.1.2.3, 8.1.2.4)	W	S	S	-
4.1.3	Grounding test (IOGP S-732, H.6.2)	H	W	R	R
4.1.4	AC withstand test (IOGP S-732, F.1)	H	H	W	R
4.1.5	Verification of correctness of the control wiring by electrical circuit continuity testing (IOGP S-732, 9.22.1, 9.22.2)	R	-	-	-
4.2	Assembly				
4.2.1	Verification of incoming materials (e.g. type, condition, quantity and certification)	W	S	-	-
4.2.2	Verification of assembly, including review of in-process records (IOGP S-732, 5.1.3, 5.3.3, 8.1.2, 8.2.11.20, 8.2.12, 8.2.16.11, 8.2.34)	W	S	S	-
4.3	Final tests, including factory acceptance test (FAT)				
4.3.1	Operation of unit contactor (IOGP S-732, 8.2.36.3, 9.22.1, 9.22.2)	H	H	W	R
4.3.2	Unit electrical and mechanical interlocks (IOGP S-732, 9.22.1, 9.22.2)	H	H	W	R
4.3.3	Function testing all control devices NOTE For hard wired devices, this verifies operation per the schematic. For devices that control via communication, this verifies through test or simulation proper control over a network from a system controller. This also includes function test of local human machine interface (HMI), if applicable. (IOGP S-732, 8.2.12.9, 9.22.1, 9.22.2)	H	H	W	R

Table A.1 *(continued)*

Purchaser assessment activities		CAS			
		A	B	C	D
4.3.4	Protective relay and metering functionality (IOGP S-732, 9.22.1, 9.22.2)	H	H	W	R
4.3.5	Indicator lights (IOGP S-732, 8.2.36.3, 9.22.1, 9.22.2)	H	H	W	R
4.3.6	Auxiliary equipment provided as part of the system design (IOGP S-732, 9.22.1, 9.22.2)	H	H	W	R
4.3.7	Auto transfer feature (if applicable) (IOGP S-732, 9.22.1, 9.22.2)	H	H	W	R
5	**Final inspection**				
5.1	Conformance to purchase order				
5.1.1	Verify conformance to purchase order (IOGP S-732, 9.22.1, 9.22.2)	H	W	R	R
5.2	Verify handling, packing, preservation and storage (if applicable) (IOGP S-732, 8.2.40, H.4.3, H.5.2, H.5.3, H.5.4)	W	S	-	-
5.3	Release equipment for shipment (IOGP S-732, H.4.3)	H	H	H	H

Key

- \- No intervention performed
- H Hold point
- W Witness point
- R Review
- S Surveillance

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