International Association of Oil & Gas Producers

SPECIFICATION
S-736Q

January
2021

Quality Requirements for Low Voltage AC Drives (IEC)

JIP33
JOINT INDUSTRY PROGRAMME

Revision history

VERSION	DATE	PURPOSE
0.1	January 2021	Issued for Public Review

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 2014).

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Introduction

The purpose of this quality requirements specification (QRS) is to define quality management requirements for the procurement of low voltage AC drives in accordance with IOGP S-736 for application in the petroleum and natural gas industries.

The QRS includes definition of a conformity assessment system (CAS) which specifies standardized customer interventions against quality management activities at four different levels. The applicable CAS level is specified by the customer in the equipment data sheet or purchase order.

This QRS shall be used in conjunction with the supplementary requirements specification IOGP S-736, the information requirements specification IOGP S-736L and the equipment data sheet IOGP S-736D which together comprise the full set of specification documents. The introduction section in the supplementary requirements 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
Quality Requirements Specification

1 Scope

To specify quality management requirements for the supply of low voltage AC drives to IOGP S-736 Supplementary Specification to IEC 61800-2 Low Voltage AC Drives including:

a) manufacturer quality management system requirements;

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

c) traceability requirements;

d) evidence of conformance;

e) factory acceptance.

2 Normative references

For the purpose of this document, the documents referenced in IOGP S-736 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, *Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry*

IOGP S-736, *Supplementary Specification to IEC 61800-2 for Low Voltage AC Drives*

ISO 9001, *Quality management systems — Requirements*

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

3 Terms and definitions

For the purpose of this document, the terms and definitions given in IOGP S-736 and ISO 9000 (normative to ISO 9001) and the following shall apply.

3.1 Conformity assessment

Demonstration that requirements relating to a product, process, system, person or body are fulfilled.

NOTE 1 Conformity assessment (or assessment) includes but is not limited to review, inspection, verification and validation activities.

NOTE 2 Assessment activities may be undertaken at a manufacturer/sub-supplier's premises, virtually by video link, desktop sharing, etc. or by review of information formally submitted for acceptance or for information.

3.2 Conformity assessment system (CAS)

Systems providing different levels of assessment of the manufacturer's control activities by the customer (second party) or independent body (third party) based on evaluation of the manufacturer's capability to conform to the product or service specification and obligatory requirements.

NOTE CAS A reflects the highest risk and associated extent of verification. CAS D is the lowest.

3.3 Conformity assessment - Hold point (H)

Point in the chain of activities beyond which an activity shall not proceed without the approval of the customer or customer's representative.

3.4 Conformity assessment - Witness point (W)

Point in the chain of activities that the manufacturer shall notify the customer or customer's representative before proceeding. The operation or process may proceed without witness if the customer does not attend after the agreed notice period.

3.5 Conformity assessment - Surveillance (S)

Observation, monitoring or review by the customer or customer's representative of an activity, operation, process, product or associated information.

3.6 Conformity assessment - Review (R)

Review of the manufacturer's information to verify conformance to requirements.

NOTE Information review requirements are managed on a surveillance basis and as such do not impose schedule constraints, unless specified as hold points in Annex A or as conditions specified in the associated IRS.

4 Symbols and abbreviations

For purposes of this document, the following symbols and abbreviations apply:

CAS conformity assessment system

IRS information requirements specification

QRS quality requirements specification (this document)

5 Quality requirements

5.1 Quality management system

The manufacturer shall demonstrate that the quality management arrangements established for the supply of products and services conform to ISO 9001, ISO 29001, API Specification Q1 or an equivalent quality management system standard.

5.2 Conformance assessment

5.2.1

Quality plans and inspection and test plans developed as outputs to operational planning and control shall define the specific controls to be implemented by the manufacturer to ensure conformance with the specified requirements.

5.2.2

Controls shall address both internally and externally sourced processes products and services.

5.2.3

Quality plans and inspection and test plans shall include provision for the customer conformity assessment system (CAS) as specified in IOGP S-736D. See Annex A.

5.2.4

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

NOTE 1 For industrial proven solutions CAS level D is specified unless risk assessment indicates that a more stringent CAS level is required.

NOTE 2 Irrespective of conformity assessment requirements defined by the customer, either, by reference to standard or specification requirements or in the scope, the manufacturer remains responsible for operational planning and control and demonstration of the conformity of products and services with the requirements. See ISO 9001, 8.1 and 8.2.

6 Certification and traceability

The manufacturer shall maintain traceability of sub-assembly and major components to the original component manufacturer tag / serial number and where applicable, associated certification. See ISO 9001, 8.5.2.

7 Control of nonconforming products and services

Nonconformance with specified requirements identified by or to the manufacturer shall be corrected such that the specified requirements are satisfied or the customer's acceptance of the nonconformance agreed in accordance with purchase order conditions. See ISO 9001, 8.2.3, 8.2.4, 8.5.6 and 8.7.

8 Evidence (conformance records)

Plans, procedures, methods and resultant records shall be provided in accordance with the associated IRS.

Annex A
(normative)
Customer conformity assessment requirements

This annex defines four conformity assessment systems (CAS) or levels of customer assessment.

	PURCHASER ASSESSMENT ACTIVITIES	CAS			
		A	B	C	D
1	**Operational planning and control activities**				
1.1	Quality planning (ISO 9001, 8.1 and ISO 10005) (IOGP S-736, 6.1)	H	R	-	-
1.2	Inspection and test planning as per ISO 9001, 8.1 and ISO 10005 (IOGP S-736, 6.1)	H	R	R	-
2	**Design and development activities**				
2.1	Design and development planning				
2.1.1	Wiring diagram for the BDM/CDM (IOGP S-736, 5.6)	H	R	-	-
2.2	Manufacturing procedure qualification tests				
2.2.1	Type testing (IOGP S-736, 6.6.3.7.3, 6.6.3.10.1, 6.6.3.5.5, 6.6.3.5.6)	W	W	R	-
3	**Control of external supply**				
3.1	External supply scope, risk assessment and controls (ISO 9001, 8.4) (IOGP S-736, 5.3.6.2.1)	H	R	-	-
4	**Production and service provision**				
4.1	Routine testing (IOGP S-736, 6.6.1, 6.6.3.10.5, 6.6.3.7.7, 5.16.1.1, 5.16.2.1, 6.6.5)	W	W	R	-
5	**Release of product or service**				
5.1	Verify conformance to purchase order				
5.1.1	Witness the handling, preservation and packaging procedure of the drive before release (IOGP S-736, Table 17, Table 19)	W	-	-	-
5.1.2	Review of final documentation as per IOGP S-736L (IOGP S-736, 7.3)	H	H	-	-
5.1.3	Review the declaration of conformity (IOGP S-736, 4.2.2, 7.5.2, 5.16.2.2)	R	R	R	R
5.1.4	Final inspection and equipment release	H	H	-	-

H is hold point, W is witness point, S is surveillance and R is review.
NOTE Definitions for these terms are provided in Clause 3.

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