

		IECEX QUALITY ASSESSMENT REPORT			
QAR No. and customer name		GB/BAS/QAR13.0009/07 3388 Cable Systems			

INTERNATIONAL ELECTROTECHNICAL COMMISSION

INTERNATIONAL ELECTROTECHNICAL COMMISSION SCHEME FOR CERTIFICATION TO STANDARDS IN EXPLOSIVE ATMOSPHERES (IECEX SCHEME)

TITLE: ATEX/IECEX Quality Assessment Report for Manufacturers.

This document provides an IECEX QAR and ATEX QA Notification Report format for assessment of manufacturers. Guidance for assessment is provided in OD-025 and requirements for preparation of QAR are given in OD-009.

This Document provides a standardised Report format for the recording of assessments of Ex Manufacturers for compliance with the requirements of the following:

ISO/IEC 80079-34 Edition 2.0 2018-08 – Application of Quality Systems for equipment manufacture.

IECEX Operational Document OD 025 – Guidelines for the management of assessment/surveillance of quality management systems in accordance with the IECEX Scheme.

This QAR is applicable to initial assessment, any necessary follow-up assessments, and special assessment of manufacturers.

While primarily intended for use by auditors of certified product manufacturers, it may also be used by manufacturers themselves or when conducting internal assessments for compliance with the relevant requirements.

It is not valid until signed by SGS Baseefa and this is only done when any nonconformities have been cleared. Once completed, in order to be valid for IECEX purposes, this QAR must be registered on the IECEX "On-Line" Certificate of Conformity website system. Refer to OD 011 Part 2 for guidance.

**SGS United Kingdom
Limited**

Rockhead Business Park, Staden Lane, Buxton, Derbyshire, SK17 9RZ **Tel** +44 (0) 1298 766600 **Fax** +44 (0) 1298 766601
Registered in England No. 1193985 Rossmore Business Park, Ellesmere Port, Cheshire CH65 3EN www.sgs.co.uk/baseefa

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Manufacturer	Cable Systems 2-6 Gawsworth Court Risley Road Birchwood, Warrington Cheshire WA3 6NJ			
Production Site(s) audited	2-6 Gawsworth Court Risley Road Birchwood, Warrington Cheshire WA3 6NJ			
Product Description	Manufacture of Ex-Mo (Motion Sencers) product. Assembler partners for Cooper Crouse Hinds (CEAG) as well as several other manufacturers of hazardous area enclosures.			
Employee count	Total onsite: 21 Total involved in Ex products: 10			
Scope of Audit	Initial Assessment ☐ Re-Assessment ☒ Surveillance Assessment ☐			
Electrical equipment with type(s) of protection of	d ☒ e ☒ h ☐ i ☒ m ☐ n ☐ p ☐ Other ☐			
Ex products as % of overall	90%			
Audit Team Leader	John Bush			
Audit Date	29 th July.2025			

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1. Summary Report

Assessment Summary and Conclusions:

This on-site assessment was conducted against the requirements of IEC 80079-34:2020. Objective evidence was observed from documents presented by the organization prior to and during the audit.

Cable Systems Ltd were sold to Newby Investments (31.01.2025) and subsequently came under a subsidiary group of Newby, UK Electrics Limited. There have been no changes within Cable Systems as to the employees, but Jonathon Rigby, Managing Director and owner of the business, has retired and left the company completely.

However, the company's documented Quality Management System is under a total re-vamp with changes to the documented Quality Management, organization structure (Roles and Responsibilities), Procedures and Work Instructions.

Cable systems remain a box modifier as well as being the design authority and manufacturer of the Ex-Mo Ex d flameproof motion sensors.

Cable Systems also custom build distribution boxes, junction boxes, sounders, beacons, and cable glands in the role of a Box modifier.

Staff are trained and experienced for each of the product range.

There is also a designated Ex d housing used for the Ex-Mo Product.

The Ex d housing is supplied by Limatherm and FEAM.

The quality system is comprehensively documented and generally meets the requirements of 80079-34.

Internal audits are carried out for all the modified enclosures.

Management Review is carried out annually.

The recommendation of this assessment is that the QAR/QAN to be maintained.

Next Quality Audit due : January.2027

Next Quality Audit type :

Re-Assessment	☐
Surveillance	☒

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Non-Conformities

NCR No.(s): None raised during this assessment.

Audit Team Leader Recommendations

☒ Certification to be issued/maintained.



Audit Team Leader Signature
Date: 29th July.2025



ExCB Technical Reviewer
Date: 04-02-2026



Certification Body Representative
Date: 9 February 2026

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2. Audit Information

2.1 Scope of Audit:

- Type A** Re-assessment of manufacturer with a certified QMS* ☒
- Type B** initial assessment/reassessment of manufacturer without a certified QMS..... ☐
- Type C** surveillance of manufacturer with a certified QMS* ☐
- Type D** surveillance of manufacturer without a certified QMS..... ☐

2.2 Audit Criteria : **BS EN ISO / IEC 80079:2020**

2.3 Date(s) and Duration of Audit : **29th July.2025 (One Auditor Day)**

2.4 Details of ISO 9001 Certification:

ISO 9001 certificate No	Certified by	Expiry date	Scope
FS 689322	BSI	25.02.2028	The custom Build of distribution boards Control stations, enclosures, cable looms, Cable Systems also manufacture and own the EX Mo-motion sensing equipment Manufacturing of Ex d-motion sensors.

If ISO 9001 certified, are non-conformities from latest ISO9001 audit reviewed?

Yes ☐

 No ☐

 N/A (no NCs) ☒

Comments to ISO 9001 non-conformities.

Last BSI assessment as Cable System Ltd was 15.10.2024 resulting no Findings or OFI's this was against. The first BSI assessment as Cable Systems as part of Newby Investments, was 15.04.2025 resulting in a number of minor Findings in connection with the company name, ownership and updating procedures.

2.5 Composition of Audit Team:

Name	Position	Role in Audit
John Bush	SGS Baseefa Lead Auditor	Sole Auditor

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2.6 Interviewed Representatives of Manufacturer (Auditee):

Refer to meeting attendance sheet (attached)
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2.7 Critical Suppliers:

Name of Supplier	Critical item or service provided
Limatherm	EX d Housing - Stainless Steel (FTZU 07ATEX0002U)
Limatherm	Ex d Housing – Ali (FTZU03ATEX 0207U)
FEAM	Ex d Housing – Ali (Ineris13ATEX0021X, 002X & 0023X)
Hawke	Ex d Cable Glands
Weidmuller Ltd.	Terminals
Dron and Dickinson	Electrical equipment
Tru-cal	Equipment Calibration

2.8 Manufacturers Top Level Documentation:

Document No.	Document Name	Rev.	Date
QPMAN-01	Quality Manual	06	26.06.2025
QPOO-01	Quality Policy	07	26.06.2025
5.30	Organizational Roles, Responsibilities & Authorities	12	26.06.2025
8.51.3	Manufacturing & Testing of Ex-mo	05	10.04.2025

2.9 Manufacturers IECEx Certificates of Conformity:

Refer to IECEx QAR Summary

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3. Documentation Review and Assessment of Implementation

NOTE 1: Manufacturer's **Document References** need only to reference the document number (and if desired the title) as the title and revision status is listed in 2.7. **Comments** are entered by the auditor to document compliance or noncompliance of a clause.

NOTE 2: Even if there are no additional IEC/ISO 80079-34:2018 requirements to ISO 9001:2005 the auditor shall provide a verdict in accordance with the Note 3 below.

NOTE 3: Possible audit verdicts: P = Pass, F = Fail, NR = Not Reviewed, NA = Not Applicable, O = Observation and NCR number against a clause means non-conformity.

Clause	Requirement	Documents reference and/or comments	Verdict
4.1	Understanding the organization and its context 4.1 of ISO 9001:2015 applies with the following addition:		
	In regard to this document, the context of the organization is to ensure that any Ex-Product is in accordance with its certificate and technical documentation.	Quality Manual rev. 06 (26.06.2025) section 1.0 and section 4.0 meets the requirements of ISO / IEC 80079-34	P
4.2	Understanding the needs and expectations of interested parties	Manufacturers ISO 9001 QMS complies.	P
	4.2 of ISO 9001:2015 applies.		
4.3	Determining the scope of the quality management system	Manufacturers ISO 9001 QMS complies.	P
	4.3 of ISO 9001:2015 applies.		
4.4	Quality management system and its processes 4.4 of ISO 9001:2015 applies with the following addition:		
	The quality management system shall ensure that the Ex-Product conforms to the type described in the certificate and the technical documentation.	Quality Manual rev. 06 (26.06.2025) section 1.0 and section 4.0 meet the requirements.	P
5.1.1	General	Manufacturers ISO 9001 QMS complies.	P
	5.1.1 of ISO 9001:2015 applies.		
5.1.2	Customer focus	Manufacturers ISO 9001 QMS complies.	P
	5.1.2 of ISO 9001:2015 applies.		
5.2.1	Establishing the quality policy	Manufacturers ISO 9001 QMS complies.	P
	5.2.1 of ISO 9001:2015 applies.		
5.2.2	Communicating the quality policy	Manufacturers ISO 9001 QMS complies. Quality Policy rev. 7 (26.06.2025) identifies the commitment to ISO / IEC 80079-34:2020 throughout.	P
	5.2.2 of ISO 9001:2015 applies.		
gr5.3	Organizational roles, responsibilities and authorities 5.3 of ISO 9001:2015 applies with the following additions:		
	Ex authorized person(s) shall be appointed with defined and documented responsibilities and authority to ensure the following requirements are met:		
	a) the effective co-ordination of activities with respect to Ex Products;	Quality Manual rev. section 1.0 and section 4.0 rev. 06 (26.06.2025) meet the requirements. Organizational Roles, responsibilities, and Authorities Doc	

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Clause	Requirement	Documents reference and/or comments	Verdict
		no 5.30 rev. 12 (26.06.2025) refers – Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM Products and Ex-Mo is Steve Hargreaves . Authorized Person for the Assembly of Eaton GHG Products is specified as Steve Hargreaves, and Mark Dolan is the Deputy . Carrie Baily has been appointed internally to the position of Quality Manager. Carrie still retains the position of Accounts Manager as well.	Obs.2025 07.001
	b) the liaison with the issuer of the certificate (when not issued by the manufacturer) with respect to any proposed change to the design defined in the certificate and the technical documentation;	Reference above.	P
	c) the liaison with the body responsible for the verification of the quality management system with respect to intended updating of the quality management system. NOTE It is not practicable for the manufacturer to inform the body responsible for the verification of the quality management system each time the quality management system is updated. It is only practicable to inform them of "substantial" updating of the quality management system relevant to the Type of Protection. Similarly, it is not practicable to specify in general terms what types of updating are or are not "substantial". It is therefore normal that the manufacturer informs the body responsible for the verification of the quality management system on any update of the quality management system having consequences on Ex Product compliance. The change of an Ex authorized person is considered as a "substantial" change.	There have been some substantial changes to the Quality Management Systems. Steve Hargreaves is still identified as the Authorized Person but with more responsibility. The Company's Organization Chart has changed and is now showing Lee Bradley as General Manager (in place of Jonathon Rigby, the former M.D. and Owner of the company).	P
	d) the authorization of initial approval and changes to related drawings, where appropriate.	Reference above.	P
	e) the authorization of concessions (see 8.7 f));	Reference above.	P
	f) the accuracy of relevant information regarding Ex Product given to the customer for any sales literature and installation instructions (which shall include applicable Specific Conditions of Use and any Schedule of Limitations);	Sales literature relates significantly to the Ex-Mo product held by Cable Systems.	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	NOTE Ex Equipment Certificate numbers with a suffix "X" contain Specific Conditions of Use. Ex Component certificates numbers, with a suffix "U" may contain a Schedule of Limitations.		
	g) the effective coordination of manufacturing processes related to Ex Products including externally provided products, services and processes detailed in 8.4; In the case of a manufacturer with multiple manufacturing sites an Ex authorized person with relevant responsibilities shall be appointed for each site.	There is only one manufacturing site.	P
	Records demonstrating this shall be available and be maintained as documented information.	Records are kept for 10 years after the last product was manufactured. The I.T. System is support by two external resources APH for software (Global) and by a clouds "real time" back up (every 5 minutes). The company also have a server in each unit operating with "mirror" backups. As an example, sales orders related to Hawke were observed dating back to 2013.	P
6.1	Actions to address risks and opportunities	Manufacturers ISO 9001 QMS complies.	P
	6.1 of ISO 9001:2015 applies.		
6.2	Quality objectives and planning to achieve them	Manufacturers ISO 9001 QMS complies.	P
	6.2 of ISO 9001:2015 applies.		
6.3	Planning of changes	Manufacturers ISO 9001 QMS complies.	P
	6.3 of ISO 9001:2015 applies.		
7.1.1	General (Support and Resources)	Manufacturers ISO 9001 QMS complies.	P
	7.1.1 of ISO 9001:2015 applies.		
7.1.2	People	Manufacturers ISO 9001 QMS complies.	P
	7.1.2 of ISO 9001:2015 applies.		
7.1.3	Infrastructure	Manufacturers ISO 9001 QMS complies.	P
	7.1.3 of ISO 9001:2015 applies.		
7.1.4	Environment for the operation of processes	Manufacturers ISO 9001 QMS complies.	P
	7.1.4 of ISO 9001:2015 applies.		
7.1.5	Monitoring and measuring resources 7.1.5 of ISO 9001:2015 applies with the following addition:	The company use Tru-Cal (UKAS 0716) for all their calibration requirements. Observed historical database for each piece of equipment containing	P
	When monitoring or measuring is used to verify the conformity of Ex Products, the measuring equipment shall be calibrated and a valid calibration certificate shall exist.		

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Clause	Requirement	Documents reference and/or comments	Verdict
	Verification of measuring equipment against calibrated equipment is also permitted as long as it is properly documented. The calibration certificate shall meet one of the following requirements:	certificates of calibration and the expiry date. Observed reference s/n 6KM 100691, Screw Plug Gauge, 20mm x1.5mm 6h. s/n CS4 150mm / 6" Caliper. s/n F993677, Torque Wrench 0.3 Nm. s/n 6GO100500, Torque Screwdriver.	
	a) Where a calibration certificate bears an accreditation, logo issued by an accredited calibration laboratory (which can demonstrate that it operates in compliance with an internationally recognized standard and is covered by a multilateral international agreement) the calibration laboratory need not be subjected to further evaluation.	Certificates issued by Tru-Cal (UKAS 0716) bare their UKAS traceability as observed.	P
	b) Where a calibration certificate does not bear the accreditation logo of a national accreditation authority, each calibration certificate shall include at least the following information: · an unambiguous identification of the item calibrated. · evidence that the measurements are traceable to international or national measurement standards. · the method of calibration. · a statement of compliance with any relevant specification. · the calibration results. · the uncertainty of measurement, where necessary. · the environmental conditions, where relevant. · the date of calibration. · the signature of the person under whose authority the certificate was issued. · the name and address of the issuing organization and the date of issue of the Certificate. · a unique identification of the calibration certificate.	Certificates issued by Tru-Cal (UKAS 0716) bare their UKAS traceability as observed.	P
	c) Where a calibration certificate does not bear the accreditation logo of a national accreditation authority or does not contain the information listed in 7.1.5 b), the manufacturer shall demonstrate a valid relationship to international	Certificates issued by Tru-Cal (UKAS 0716) bare their UKAS traceability as observed.	P

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	or national measurement standards by other means (e.g. a documented site assessment).		
7.1.6	Organizational knowledge	Manufacturers ISO 9001 QMS complies.	P
	7.1.6 of ISO 9001:2015 applies.		
7.2	Competence 7.2 of ISO 9001:2015 applies with the following addition:		
	The manufacturer shall have a documented process to identify and ensure that all persons having an impact on the compliance of Ex Products are trained and competent. NOTE 1 Parties who might have an impact on the compliance of Ex Products are the Ex authorized person(s), manufacturing, inspecting, testing, sales, marketing, supply management, calibration and quality control services and other services. NOTE 2 Competence requirements of 7.2 also address the awareness of 7.3.	Procedure SOP 7.20 rev. 10 (04.04.2025) refers. Training covers the specific training for Ex d motion sensors EXMO) Training is also carried out for specific Box Manufacturer by the likes of Eaton, Weidmuller, Pepper & Fuchs. Training for box modifiers recorded - SOP 5.30 rev.07 (09.11.2022) Ex Mo training Jan 2021 Lea Bradley, Paul Rotherham Attended by Steve Hargreaves. Ex Mo training records were observed and traced back to 2006.	P
7.3	Awareness	Manufacturers ISO 9001 QMS complies.	P
	7.3 of ISO 9001:2015 applies.		
7.4	Communication 7.4 of ISO 9001:2015 applies with the following addition:		
	Internal and external communication relating to Ex Products shall be controlled. NOTE 1 Communication includes manufacturer documentation, technical documentation, certificates, nonconforming products placed on the market, etc. NOTE 2 External communication includes communication with clients, certification bodies, providers, economic operators (authorised representatives, importers, distributors, external providers ...), authorities etc.	SOP 8.51.3 rev. 05 (10.04.2025) re-written / reviewed – The Manufacture & Testing of Ex-Mo (Motion Sensors). Example - Mark Dolan delivered by Weidmuller, CEAG, and Hawke. On-going is documented within a database. SOP 7.20 rev. 10 (24.04.2025).	P
7.5.1	(Documented information) General 7.5.1 of ISO 9001:2015 applies with the following addition:		
	All requirements and provisions adopted by the manufacturer to ensure compliance of Ex Products with their certificates and technical documentation, and to demonstrate compliance to this document, shall be appropriately documented in a systematic and orderly manner. This may be achieved in the form of manuals, policies, procedures, instructions, flowcharts, spread sheets, forms, or other appropriate means. The quality management system documentation shall permit a consistent	SOP7.50 rev. 6 (24.04.2025) The documented quality management system is comprehensive including Ex-product documentation control.	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	interpretation of quality programs, plans, manuals and records		
7.5.2	Creating and updating	Manufacturers ISO 9001 QMS complies.	P
	7.5.2 of ISO 9001:2015 applies.		
7.5.3	Control of documented Information 7.5.3 of ISO 9001:2015 applies with the following addition:		
	a) technical documentation and manufacturer's documentation shall be controlled.	Technical documents are controlled as observed. Documents which are scheduled documents which cannot be changed without the approval of the relevant Ex Notified Body i.e. SGS Baseefa or product certificate owner. Related drawings which cannot be modified without the ultimate Ex-Authorized Person, Steve Hargreaves, or Mark Dolan is the Deputy.	P
	b) documented procedures shall ensure that information contained within manufacturer's documentation is compatible with the technical documentation. The manufacturer shall not initially approve or subsequently amend related drawings unless they are in compliance with the schedule drawings.	Sales literature is in accordance with the schedule drawings and is reviewed by the relevant product Authorized Person.	P
	c) the quality management system shall ensure that no factor (type, characteristic, position etc.) defined within the certificate and technical documentation (e.g. schedule drawings) is modified unless otherwise permitted by the issuer of the certificate.	No changes are made to schedule drawings without the approval of the relevant notified body.	P
	d) there shall be a documented system that refers to all related drawings to the relevant schedule drawings.	Related drawings are cross referenced to schedule drawings.	P
	e) where there are common schedule drawings associated with more than one certificate, there shall be a documented system to ensure simultaneous supplementary action in the event of an amendment to such drawings. NOTE Some manufacturers use common components with common drawing numbers on more than one product and then have more than one person responsible for the end products. A compliant QMS would assure	No common schedule drawings.	P

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	f) where a manufacturer also has drawings for products that are not Ex Products, the manufacturer shall have a system that enables both the related drawings and schedule drawings to be clearly identified. NOTE The following examples indicate some methods to achieve this: – the use of visual markers. – the use of a unique series of drawing numbers, e.g. all drawings concerning a certified Ex Product have an Ex-prefix to the drawing number; – the use of a computerized relational database with indentured "Bills of Materials" that identify all Ex critical documents, components and controls unauthorized changes can also be acceptable.	Related drawings are noted as such.	P
	g) the manufacturer shall document the body responsible for the verification of the quality management system of each certificate. NOTE In some Certification Schemes, the body responsible for the verification of the quality management system associated with each certificate can be different from the body that issued the certificate.	Reference above.	P
	h) where technical documentation or manufacturer's documentation are passed to a third party, they shall be provided in a way that is not misleading.	Reference above.	P
	i) the manufacturer shall have a documented process to annually check the validity of all Ex related certificates, standards, regulations and other external specifications.	As observed Ex standards are reviewed annually within Management Reviews meetings.	P

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	j) the manufacturer shall retain adequate quality records to demonstrate conformity of the Ex-Products. A minimum of 10 years retention after each Ex- Product (batch) has been placed on the market is required. As a minimum, the list of quality records requiring control and retention, as far as applicable, shall be: • those arising from regulatory requirements. • quality documented information. • responsibilities and authorities for Ex relevant roles assignment and communication within the organization. • customer order. • contract review. • training records. • design and development changes. • inspection and test data (per batch). • calibration data. • manufacturing traceability. • sub-contractor evaluation. • delivery data (customer, delivery date and quantity, including serial numbers where available). • other documented information, if needed.	As observed records are kept for at least 10 years. Reference to Hawke Sales orders and others dating back to 2013.	P
8.1	Operational planning and control 8.1 of ISO 9001:2015 applies with the following addition:		
	The information in Annexes A and B for control and acceptance of processes for Ex Products are one method to ensure compliance with the requirements of the certificate. If other methods are used, they should be evaluated to ensure full compliance with the requirements of certification.	Customer requirements reviewed on receipt of customer enquiry / purchase order P/4405/LYO14936 Studley Electrical – reference PL612 Junction Box (Baseefa06ATEX01117X) full description as to the technical / ATEX requirements. Contract reviewed (28.07.2025) by Rob Ware (R.W).	P
8.2.1	Customer Communications 8.2.1 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
8.2.2	Determining the requirements for products and services 8.2.2 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
8.2.3	Review of the requirements for products and services 8.2.3 of ISO 9001:2015 applies with the following addition:		
	The review shall ensure that any stated customer requirement is compatible with the certificate e.g. equipment group, temperature class, Type of	Customer requirements reviewed on receipt of customer enquiry / purchase order, P/4405/LYO14936 Studley Electrical –	P

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	Protection, Equipment Protection Level (EPL) and ambient temperature range. In some situations, such as internet sales, a formal review might be impractical. In such a case the appropriate information shall be made available to the customer.	reference PL612 Junction Box (Baseefa06ATEX01117X) full description as to the technical / ATEX requirements. Contract reviewed (28.07.2025) by Rob Ware (R.W). (Reference Works order number 42611).	
8.2.4	Changes to requirements for products and services 8.2.4 of ISO 9001:2015 applies with the following addition: The Ex-authorized person(s) identified in 5.3 shall be involved in any changes (e.g. changes to the manufacturer's documentation, quality management system or marketing documents) that could affect Ex Product compliance.	The Organizational Roles, responsibilities, and Authorities Doc number 5.30 rev. 12 (26.06.2025) refers – Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM Products and Ex-Mo is Steve Hargreaves. Authorized Person for the Assembly of Eaton GHG Products is specified as Steve Hargreaves, and Mark Dolan is the Deputy.	P
8.3.1	General (Design and development of products and services)		
	8.3.1 of ISO 9001:2015 is not within the scope of this document.		
8.3.2	Design and development planning		
	8.3.2 of ISO 9001:2015 is not within the scope of this document.		
8.3.3	Design and development Inputs		
	8.3.3 of ISO 9001:2015 is not within the scope of this document.		
8.3.4	Design and development controls		
	8.3.4 of ISO 9001: 2015 is not within the scope of this document.		
8.3.5	Design and development outputs		
	8.3.5 of ISO 9001:2015 is not within the scope of this document.		
8.3.6	Design and development changes		
	8.3.6 of ISO 9001:2015 applies with the following addition:		
	The Ex authorized person(s) identified in 5.3 shall be involved in the approval process of any substantial modification or change (e.g. changes to the manufacturer's documentation, quality management system or marketing documents) that could affect Ex Product compliance.	The Organizational Roles, responsibilities, and Authorities Doc number 5.30 rev. 7 (09.11.2022) refers – Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM Products and Ex-Mo is Steve Hargreaves. Authorized Person for the Assembly of Eaton GHG Products is specified as Steve Hargreaves, and Mark Dolan is the Deputy.	P

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8.4.1	General (Control of externally provided processes, products and services) 8.4.1 of ISO 9001:2015 applies with the following addition:		
	a) While manufacture, test and final inspection may be sub-contracted, the responsibility for ensuring conformance with the certificate and the technical documentation shall not be sub-contracted.	Organizational Roles, responsibilities, and Authorities Doc no 5.30 rev. 12 (26.06.2025) refers. Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM Products and Ex-Mo is Steve Hargreaves. Authorized Person for the Assembly of Eaton GHG Products is Paul Rotherham. Deputy Authorize Persons are specified as Steve Hargreaves, and Mark Dolan.	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	b) External providers providing a product, process, or service that can affect the Ex-Product's compliance with the certificate shall only be selected after an evaluation has provided evidence that they have the capability of ensuring compliance with all specified requirements. 1) documented objective evidence that the external provider can provide product, process or service that is fit for purpose shall be made by one or more of the following methods: – the external provider has an acceptable Ex quality management system according to this document assessed by an accredited body, – the external provider has a quality management system certificate in accordance with the appropriate standard and with an acceptable scope, NOTE A certificate issued by an accredited body which can demonstrate that it operates in compliance with ISO/IEC 17021 is generally acceptable; depending on the nature of the product, process, or service, a quality management system in accordance with ISO 9001:2015 might not be sufficient. – a documented site assessment to ensure that all relevant controls are available, documented, understood and effective. NOTE The evaluation takes the following into account: – criticality of the product, process or service; – degree of difficulty, or variability in the manufacturing process; – location of the external provider and hence the effectiveness of communications; – subcontracting of the product, process or service.	Key suppliers such PCB assemblers are reviewed annually (reference management review). Ex d housings are supplied by Limatherm and FEAM who hold their own QAN.	P
	2) where the features affecting the Type of Protection cannot be verified at a later stage or are not verified by the manufacturer e.g. encapsulated intrinsically safe circuits, then the product, process, or service shall only be accepted by one of the following methods: – the manufacturer can demonstrate that the control process implemented by the external providers ensures Ex compliance,	The Ex Mo-housings are certified by Limatherm and FEAM who hold their own QAN.	P

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	– the body responsible for the verification of the quality management system performs periodic audits at the external providers.		
	c) external providers providing calibration services (including verification on measuring devices by comparison with calibrated equipment) shall be evaluated on their ability to meet stated requirements as well as the requirements of 7.1.5.	The company uses Tru Cal with traceability to national standards (UKAS 0716).	P
	d) external providers not used for a period exceeding one year shall be re-evaluated in accordance with 8.4.1 b) prior to the placing of a contract or a purchase order.	Suppliers not used for more than one year will be reassessed as a new supplier.	P
	e) requirements 8.4.1 b) and 8.4.1 d) are not mandatory for products, processes or services where the manufacturer verifies conformance according to 8.4.2.	Suppliers are reviewed annually, reference Management Review.	P
	f) the ongoing ability of the external providers to provide conforming products, process or service shall be reviewed at periods not exceeding one year. NOTE 1 "Review" is a process by which the manufacturer demonstrates the ongoing suitability and performance in accordance with 8.4.1 b) and c) of their external providers, e.g. receiving inspection report analysis. NOTE 2 The terms "re-evaluation" and "review" have different meanings.	Suppliers' deliveries are reviewed constantly for quality of components or products, receipt of conformance certificates, material certificates, or dimensional reports and on time delivery (OTD).	P
	g) The manufacturer shall facilitate an arrangement whereby the body responsible for the verification of the Ex-quality management system may also verify aspects of any external provider's operation that affects the Type of Protection.	As part of the contract with SGS Baseefa audits can include access to selected suppliers if required.	P
8.4.2	Type and extent of control 8.4.2 of ISO 9001:2015 applies with the following addition:		
	a) for purchased processes, products and services that can compromise the Type of Protection, the manufacturer shall determine and implement verification arrangements which demonstrate the product's compliance with the certificate, considering the nature of the product and the nature of the external provider.	Suppliers' deliveries are reviewed constantly for quality of components or products, receipt of conformance certificates, material certificates, or dimensional reports and on time delivery (OTD).	P

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	b) when deciding what type of verification is required for a particular purchased process, product or service, the manufacturer shall consider the nature of the purchased product, the external provider, and how critical it is to the Type of Protection. In considering whether the external provider should carry out the verification, the manufacturer should consider the results of their evaluation carried out under 8.4.1. The decision should reflect the competence of the external provider, including whether they have a quality management system that covers the activity, the resources, e.g. equipment, and the people with sufficient skill and experience to do it. This latter point is particularly significant when judgement is required, such as when inspecting a flameproof casting. When the manufacturer elects to have the external provider carry out test or inspection that is relevant to the Type of Protection, the product may be supplied with a declaration of conformity that confirms it has been done.	The procurement of certified products, components or material is specified on purchase orders as observed (Limatherm and FEAM).	P
	c) where the external provider has been evaluated and documented objective evidence has been obtained to demonstrate that the external provider is fully capable of producing and verifying the process, product or service, no further verification of the process, product or service is required, if a declaration of conformity is supplied for each batch or product.	Reference above.	P
	d) where the certificate specifies routine tests or inspections, these shall be carried out on each and every product. They may be carried out by either the external provider or the manufacturer. When carried out by the external provider they shall be specified on the purchasing documents, e.g. by a quality plan, and confirmed by the external provider e.g. by a declaration of conformity including test results, if required.	If routine tests are required, this information is supplied on purchase orders to suppliers.	P
	e) where verification of a purchased product cannot be carried out after manufacture, e.g. the internal parts of an encapsulated intrinsically safe circuit, then the product shall only be accepted if supplied with a declaration of conformity. This shall specifically state compliance to the purchase documents, e.g. a quality plan, that lists	Ex Mo-sensor is within an EX d certified housing manufactured by Limatherm or FEAM.	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	the factors that together demonstrate conformity of the product.		
	f) where sample inspections or tests are permitted, they shall be conducted in a manner which demonstrates conformity of the entire batch.		n/a
	g) where either the external provider or the manufacturer requires training or specialist skill or knowledge to carry out a verification, then the training material, specialist skill, knowledge or background shall be documented and training records maintained.	Supplier assemblers are trained for Ex-related products, reference internal training records.	P
	h) where the manufacturer chooses not to carry out inspections and tests at its own premises, then inspections and tests shall be performed on the external provider's premises under the responsibility of the manufacturer.	Inspection of critical part Ex d housings is carried out by the supplier Limatherm or FEAM both of whom have their own QAN.	P
	i) where an external provider provides products with evidence of conformity applicable to use in an explosive atmosphere, (e.g. certificate), then further verification is not required unless the manufacturer considers it necessary.	Reference above.	P
	j) Where a verification of purchased product is relative to material (metals, alloys, nonmetallic parts, resins and similar), a specific analysis certificate or declaration shall be supplied.	Material supplier certificate for housing is specified and supplied by Limatherm or TEAM as Ex-certified housing.	P
	k) One of the following processes shall be used to verify the continued conformity of the materials critical to the applied Type of Protection, used in the production of Ex-Products. 1) Review the Declaration(s) of Conformity from the external provider of the material within the supply chain that can impact the material characteristics; as applicable; to demonstrate that the material used in the production of the Ex-product is in accordance with the schedule drawings. 2) Review the material manufacturer's confirmation that the material maintains the particular material properties of concern, e.g.	Material certificates and Certificates of Conformances are supplied with the component parts. Reference above.	P

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	flammability, CTI, RTI, or UV resistance, chemical composition, physical properties. 3) Review the material manufacturer's process and data for the validation of material characteristics. 4) Confirmation that equipment testing, necessary to confirm the material is in accordance with the certificate or schedule drawings, is repeated as required. Alternative processes may be utilized if it can be demonstrated that they provide the same level of conformity. Receipt or acceptance of a declaration of conformity does not absolve the manufacturer from responsibility to ensure continuing conformity. NOTE Annex C provides guidance for the development of an external provider's declaration of conformity.	Reference above. Reference above.	
8.4.3	Information for external providers 8.4.3 of ISO 9001:2015 applies with the following addition: a) the purchasing documents shall clearly describe the specific requirements pertaining to externally provided product set out in the certificate and the technical documentation (e.g. for process control, testing or inspection). NOTE For particular types of product e.g. castings, machined items and assemblies, the purchasing documents commonly include specific references to required drawings, test procedures, inspection procedures, material certificates, test reports and Declarations of Conformity. b) for items where conformance cannot be verified after manufacture (e.g. encapsulated intrinsically safe circuits), the purchasing information shall set out the specific quality procedures, resources and sequence of activities relevant to the particular item. c) the manufacturer shall define the method by which documents e.g. technical specifications stated in a particular purchase order remain traceable to the order.	Housings are Ex d housings, critical components and supplied by Limatherm or FEAM. Reference above. Key suppliers are specified on purchase orders, products, components and material are "locked in MRP system" and no supplier deviation is possible	P P P

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	without the specific approval of the Authorized Persons. d) where the manufacturer does not provide such documents with subsequent orders, then the manufacturer shall have documented procedures for ensuring that external providers have current copies of documents and that their integrity be maintained.	Certificates of Conformance are requested, supplied, and reviewed on receipt.	P
8.5.1	Production and service provision (Control of production and service provision) 8.5.1 of ISO 9001:2015 applies with the following addition:		
	The manufacturer shall provide procedures, production equipment, working environments and inspection/testing facilities that together provide assurance with respect to the compliance of the Ex-Product with its technical documentation.	Reference Works order number 42611 relates to purchase order, P/4405/LYO14936 Studley Electrical – Reference PL612 Junction Box (Baseefa06ATEX01117X) full description as to the technical / ATEX requirements. Reference works order 42412 relates to purchase order 3DX4332322 placed by Rexel Hull.	P
	Where a process can affect the integrity of a Type of Protection, and where the resulting integrity cannot be verified after manufacture (e.g. the environmental conditions required for curing an encapsulant), that specific process shall be measured or monitored and documentary evidence shall be maintained to demonstrate compliance with required parameters (Annex A can be used to demonstrate compliance).	Reference procedures Ex e Products SOP.8.5.1.1 rev. 02 (05.01.2022). The following records were observed identified on works order 42612 – Product code TBMH3030ASSEM – KTB MH30/30 Junction Box Assembly, Weidmuller Enclosure. Works order 42411 – Product code PL612ASSEM – PL612 CSL Assembled Junction Box, Hawke enclosure.	P
8.5.2	Identification and traceability 8.5.2 of ISO 9001:2015 applies with the following addition:		
	a) the manufacturer shall establish and maintain procedures for product identification during all stages of production, testing, final inspection and placing on the market.	Procedure SOP.10.21 rev.08 (17.05.2022) refers to Traceability to critical products / components Product identification is clear at all stages within the manufacturing processes (works orders 42412 and 42611) BOM's identify components / material issued to the works order.	P
	b) traceability is required with respect to the final product and its significant parts. Traceability can be achieved using serial numbers, batch or other acceptable methods.	Reference above.	P

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	NOTE Significant parts are, for example, a printed circuit board (PCB) and safety component of an intrinsically safe circuit, but not each electronic component on a PCB. The significant part can be defined in the technical documentation during the processes of the product assessment.		
8.5.3	Property belonging to customers or external providers 8.5.3 of ISO 9001:2015 applies with the following addition:		
	It is the responsibility of the manufacturer to verify the compatibility of a product supplied by a customer or an external provider with the requirements of the certificate.	Customer supplied products are only in relation to box modification as agreed with customer agreed requests.	P
8.5.4	Preservation 8.5.4 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
8.5.5	Post-delivery activities 8.5.5 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
8.5.6	Control of changes 8.5.6 of ISO 9001:2015 applies with the following addition:		
	The Ex-authorized person(s) identified in 5.3 shall be involved in changes (e.g. changes to the manufacturer's documentation, quality management system or marketing documents) that could affect Ex Product compliance.	Organizational Roles, responsibilities, and Authorities Doc no 5.30 rev. 12 (26.06.2025) refers – Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM Products and Ex-Mo is Steve Hargreaves. Authorized Person for the Assembly of Eaton GHG Products is Paul Rotherham. Deputy Authorize Persons are specified as Steve Hargreaves, and Mark Dolan.	P
8.6	Release of products and services 8.6 of ISO 9001:2015 applies with the following addition:		
	Where routine tests are required by the certificate and technical documentation, these tests shall be performed as specified. Unless specifically permitted by the certificate and the technical documentation, statistical methods shall not be used.	Routine tests are only carried out if they are specified by the product certification requirements. BOM's identify components / material issued to the works order, trace back to supplier purchase orders, records identify employees with input for completion or the order.	P
	Ex-Products shall only be released after final inspection and testing have been satisfactorily completed. The manufacturer shall provide customers with instructions prepared in accordance with the relevant standards or statutory and regulatory requirements, including	Organizational Roles, responsibilities, and Authorities Doc no 5.30 rev. 12 (26.06.2025) refers Authorized Person for the Assembly of Hawke, ECH & Weidmüller Enclosures, Assembly of FEAM	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	any Specific Conditions of Use or particulars of possible misuse.	Products and Ex-Mo is Steve Hargreaves. Authorized Person for the Assembly of Eaton GHG Products is Paul Rotherham. Deputy Authorize Persons are specified as Steve Hargreaves, and Mark Dolan.	
8.7	Control of nonconforming outputs 8.7 of ISO 9001:2015 applies and the following shall be defined:		
	a) the manufacturer shall maintain a documented system, such that in the event of an Ex-Product not conforming to the certificate and having been supplied, then the manufacturer's customer can be identified.	Procedure SOP.10.21 rev.08 (17.05.2022) refers to Traceability to critical products / components. Non-conformity issues are recorded within the CPI Log and processed as observed.	P
	b) the manufacturer shall take action, appropriate to the degree of risk, where nonconforming Ex-Product has been supplied to a customer. It is recommended that the manufacturer liaise with the body responsible for the issue of the certificate.	Product Recall SOP 55-2 rev. 04 refers. To date no Customer Complaints / issues have been received for certified product to date.	P
	c) where unsafe nonconforming Ex-Products have been supplied to a customer, the manufacturer shall, in writing, inform its customer and the body responsible for the verification of the quality management system and the issuer of the certificate.	Reference above.	P
	d) where it is not possible to trace unsafe nonconforming Ex-Products (e.g. Ex-Products supplied via a distributor, or for high volume Ex-Products such as Cable Glands) then a notice shall be placed in appropriate publications providing recommended action to be taken.	Reference above.	P
	e) for all nonconforming Ex Products that have been supplied to a customer, the manufacturer shall maintain, for a minimum period of 10 years, records of: - serial numbers or identification of Ex Products supplied. - the customer who received the Ex-Products.	Reference above.	P

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	- the action taken to inform customers and the body responsible for the verification of the quality management system in the case of unsafe nonconforming Ex-Products. - action taken to implement corrective and preventative action.		
	f) Concessions for Ex Products that take Ex-Products outside the design as defined in the certificate and technical documentation are not permitted.	Organizational Roles, responsibilities, and Authorities Doc no 5.30 rev. 12 (26.06.2025) refers, No concessions authorized.	P
9.1.1	General (Monitoring, measurement, analysis and evaluation) 9.1.1 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
9.1.2	Customer satisfaction 9.1.2 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
9.1.3	Analysis and evaluation 9.1.3 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
9.2	Internal audit		
	9.2 of ISO 9001:2015 applies with the following addition: a) The audit program shall address the effectiveness of the elements of the quality management system as described in this document to ensure that the Ex-products are in conformity with the certificate. The maximum period between audits shall not exceed 14 months.	Comprehensive internal audit dated 21.08.2024 observed against audit plan. Previous internal audit 16.08.2022 – 06.09.2023, both featured around 9001 and 80079-34 vertical type audits. Findings / NCR's or observations recorded within the CPI database and processes by the relevant "owner" and closed. Audit plan for 2025 planned as observed within 12 / 14 months frequency.	P
	b) One method of demonstrating effectiveness is the use of vertical auditing whereby an Ex Product awaiting dispatch is used to prove the system. The auditor examines all aspects of the system associated with the production of that Ex Product from a certification viewpoint. This normally includes appropriate documentation (drawings, inspection checklists, test records, material certificates etc.), Ex Product	Comprehensive vertical audit for all product streams.	P

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Clause	Requirement	Documents reference and/or comments	Verdict
	identification, handling, storage, training of staff and any other elements of the system which can affect the compliance of the Ex-Product to the certification parameters.		
	c) For those manufacturers that employ checklists to assist in their internal audit programs, the inclusion of the requirements of this document into the appropriate checklists, and the retention of internal audit records, is an alternative method of addressing this requirement. Manufacturers may employ either method or some other equivalent method.	Comprehensive vertical audits for each product range annually.	P
9.3.1	Management review (General) 9.3.1 of ISO 9001:2015 applies with the following addition:		
	a) the maximum intervals between reviews shall not exceed 14 months. b) top management shall chair the review. c) the Ex authorized person(s) responsible for the activities as detailed in 5.3 shall participate in the review. The review shall include the overall effectiveness of the quality management system with respect to Ex Products, including results of internal and external audits. NOTE Review of results of internal and external audits would provide evidence of the effectiveness of the quality management system.	Last comprehensive Management Review observed and attended by former M.D. and Business owner, Jonathan Rigby was 29.01.2025, (The Company officially changed ownership on 31.01.2025). Senior Management were in accordance with requirements.	P
9.3.2	Management review inputs 9.3.2 of ISO 9001: 2015 applies.	Manufacturers ISO 9001 QMS complies.	P
9.3.3	Management review outputs 9.3.3 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
10.1	General (Improvement) 10.1 of ISO 9001:2015 applies.		
	The organization shall retain documented information as evidence of: a) the nature of the nonconformities and any subsequent actions taken. b) the results of any corrective action.	Non-conformances recorded within CPI database and feature within Management Reviews.	P
10.2	Nonconformity and corrective action 10.2 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P
10.3	Continual improvement 10.3 of ISO 9001:2015 applies.	Manufacturers ISO 9001 QMS complies.	P

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Annex A (informative)			
Information relevant to particular Types of Protection and specific Ex Products			
A.1	Overview		
	This annex provides information on those aspects that the quality management system should address with respect to particular types of protection. It does not add to or otherwise change the requirements of this document. This annex provides examples of how to meet the requirements of this document, recognizing that other methods which achieve the same objectives are equally acceptable; and draws attention to aspects of requirements that might not be readily apparent to those unfamiliar with quality management systems for products intended for use in explosive atmospheres. NOTE The following examples do not cover all Types of Protection but give some advice and will be supplemented in the next edition.		
Clause	Requirement	Documents reference and/or comments	Verdict
A.2	General		
	Schedule Drawings, which support the certificate of the Ex-Product, may provide conditions for the particular Type of Protection. All markings should be in accordance with schedule drawings. For enclosures and other components forming part of the enclosure and for fans, fan hoods and ventilation screens, the manufacturer should verify the material composition (e.g. External Provider's Declaration of Conformity, see Annex C). Statistical bases are not appropriate for routine tests required by the certificate, except where the following currently permit such techniques: · the relevant standard; or · appropriate interpretation and clarification sheets. All measurements should consider temperature variations.		P P
	Comments		

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A.3	Ex d – Flameproof enclosures covered by IEC 60079-1	
A.3.1	Verification	Verdict
	Verification consists of a visual inspection and/or measurement. The measurement should be done with suitable measuring equipment. The persons doing this measurement should have the competence and knowledge of using this measuring equipment.	EX Mo housing is already certified. P
A.3.2	Castings	
	Castings should be subject to verification that demonstrates conformity, e.g.: a) 100 % visual inspection should be done on each part; b) wall thickness (including those parts not subject to machining); c) flaws, inclusions, blow holes and porosity (by either a visual or test method depending upon the criticality). NOTE Verification can be accomplished by 100 % visual inspection, or by another means deemed appropriate based on the ability of the manufacturer to effectively control production. Recovery of porous castings by impregnation methods, e.g. silicone is not permitted. In the event that a casting is recovered by welding it will become subject to the requirements applicable to welded enclosures, e.g. routine pressure testing.	Ex Mo (Ex d) Cast housing is supplied by Limatherm (FtZU03ATEX002U) and Aluminum housing (FTZU 03ATEX02U). P
A.3.3	Machining	
	Machining should be subject to verification by either 100 % inspection or statistical techniques as appropriate that demonstrates conformity, e.g. the following should be verified: a) flatness of flanged flamepaths. b) surface roughness of non-threaded flamepaths. c) fit of all threaded flamepaths (e.g. threaded entries and threaded access covers);	Fully machined Ex d Housing supplied. n/a

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	d) depth of drilling and tapping of blind holes to ensure adequate residual wall thickness. e) dimensional requirements of all flamepaths. NOTE Suitable statistical techniques are used in ISO 2859-1, ISO 3951-1 or equivalent standard.		
A.3.4	Cemented joints and potted assemblies		
	Documented procedures should address the following, as applicable: a) shelf life and storage of cement, potting compounds. b) mixing. c) surface preparation (degreasing or equivalent is usually required immediately before the potting-operation to ensure good adhesion). d) application e.g. filling instructions, freedom from voids and temperature conditions. e) curing, which should include curing period, any relevant environmental factors, provision to ensure products are undisturbed during the curing period. f) after curing, an inspection should be done on each potted assembly. Depending on the nature and repeatability of the process and the potted assembly, this could be for example using statistical techniques.		n/a
A.3.5	Routine overpressure testing		
A.3.5.1	General		
	The purpose of the test is to check that the enclosure does not suffer damage or permanent deformation. Leakage through cemented joints or potted assemblies would constitute a failure unless otherwise permitted by the issuer of the certificate. The test can be a single test conducted on a complete assembly, or a series of tests on each sub-assembly or component part. For the static routine overpressure test, it is sufficient to test the enclosure empty. The individual parts of a flameproof enclosure (for example,	The housing is already a certified Ex d enclosure (Limatherm).	P

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	cover and base) can be tested separately. For enclosures that contain more than one discrete compartment, each compartment should be tested individually. The method used should ensure that the assembly, sub-assembly or component parts are subjected to representative stress patterns e.g. actual fastening facilities are used. Clamping that affects the mechanical properties of the Type of Protection would invalidate the test results. Due to safety considerations and difficulty in detecting leakage, hydraulic rather than pneumatic methods are recommended.		
A.3.5.2	Batch testing		
	Where permitted by the certificate, routine overpressure testing may be replaced by a batch test according to the following criteria, based on ISO 2859-1: a) For a production batch up to 100, a sampling of 8 should be tested at 1,5 times the reference pressure with no failures. b) For a production batch from 101 to 1 000, a sampling of 32 should be tested at 1,5 times the reference pressure with no failures. c) For a production batch from 1 001 up to 10 000, a sampling of 80 should be tested at 1,5 times the reference pressure with no failures. d) Batches above 10 000 should be subdivided into smaller batches. If there are any non-compliant test results, 100 % of all remaining samples in the batch should be tested at 1,5 times the reference pressure. Future batches should be routine tested at 1,5 times the reference pressure until confidence is established to reconsider batch testing. NOTE Upon non-compliant test results, reconsideration of this batch testing approach is at the discretion of the party issuing the certificate.	The housing is already a certified Ex d enclosure (Limatherm).	n/a
A.3.5.3	Welded construction		
	Where permitted by the certificate, the routine overpressure testing may be replaced by one of the following inspection methods: a) radiographic weld inspection; or b) ultrasonic weld inspection; or		n/a

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	c) magnetic particle weld inspection; or d) liquid penetrant weld inspection. NOTE ISO standards exist for each of the above weld inspection methods.		
A.3.6	Flanged joints		
	Flanged joints should be verified after final assembly to ensure the gap specified in the Schedule Drawings is not exceeded. If it is not practical, special measure should be taken during the production.	Pre certified enclosure (Limatherm).	n/a
A.3.7	Elements, with non-measurable paths, of breathing and draining devices		
	For products containing elements like sintered metal, pressed metal wire or metal foam, see Annex B.		n/a

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A.4 Ex i – intrinsic safety covered by IEC 60079-11			
A.4.1 Components for intrinsically safe products			Verdict
	The following features should be verified with respect to the following components for use in intrinsically safe apparatus and associated apparatus. This normally means verifying the marking on the components or packaging and may be achieved by using statistical techniques where appropriate, as shown in Table A.1:	Components are bought in from franchised suppliers.	P
Table	Table A.1 Component features requiring compatibility		
	Resistors:	value, power, type, tolerance, case size	P
	Capacitors:	value, tolerance, type, rated voltage, case size	P
	Piezo-electric devices:	manufacturer, type, capacitance	P
	Inductive components:	type, inductance, DC. resistance, number of turns, wire gauge and material, material specification of core and bobbin where appropriate	P
	Transformers:	type, manufacturer, isolation, voltage	P
	Optical isolator	Optical isolator type, isolation, voltage"	P
	Semiconductors: – Diodes – Zener diodes – Transistors – Integrated circuits – Thyristors	type number, power value and where appropriate, the manufacturer	P
	Cells and batteries:	manufacturer and type number, or IEC designation	P
	Fuses:	manufacturer, type, value	P
	Insulating materials:	specification, dimensions and where appropriate type number	P
	Connectors (e.g. plugs/sockets and terminals):	type number and where appropriate, the manufacturer	P
A.4.2 Printed circuit boards (PCB)			
A.4.2.1 Non-populated PCBs			
	PCBs may be accepted with a declaration of conformity (see Annex C). The declaration should state compliance to the purchase documents, e.g. a quality plan that lists the factors that together demonstrate conformity of the product. For simple single- or double-sided PCBs, the copper artwork may be visually verified using photographic negative (transparency), certified drawing or controlled inspection samples. Purchase documents should specify copper thickness with tolerances, PCB thickness with tolerances and CTI values.	PCB boards are accepted with a Declaration of conformity covering PCB thickness, tolerances, and CTI values.	P

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A.4.2.2 Populated PCBs			
	Varnish and coatings should be controlled with respect to the specification of material and effectiveness of the application. Documented procedures should ensure that the application of varnish and coatings are in conformity with the certificate and/or schedule drawings. For PCBs the manufacturer should maintain a list of safety critical components used in production (e.g. resistors and Zener diodes) determined during Ex Equipment assessment. The safety critical components placed on the PCB should be verified on a 100 % basis. Specified distances and clearances on manually assembled PCBs should be verified on a 100 % basis. This may be conducted by one of the following methods: a) a visual verification; b) for surface mount components, by ensuring correct loading of the "pick and place" machines and a visual verification of correct placement; c) by automatic test equipment (ATE) if the ATE addresses each individual safety critical component and by a visual verification conducted to verify type number of components in shunt Zener diode/diode assemblies. Where the surface mount component "pick and place" machine selects the component reel based on measuring the component value, the measuring function should be calibrated. Documented procedures should be provided that ensure that workmanship standards are defined with respect to component mounting and soldering. Documented procedures should ensure that segregation of related parts (e.g. terminals) and wiring/cabling is maintained and that specified colours, cross-sectional area,	PCB Boards are procured to specified drawing numbers / part numbers. Documented procedures are in place.	P

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	insulation thickness are in conformity with the schedule drawings.		
A.4.3	Sub-assemblies and assemblies		
	Documented procedures should ensure that production documentation includes all relevant variations to the product design. Production documentation should address all safety critical components, and in the case of encapsulated parts, the compound manufacturer, type, mix and minimum depth. Documented procedures should address the following: a) shelf life and storage of cement and potting compounds. b) mixing. c) surface preparation (degreasing or equivalent is usually required immediately before the potting-operation to ensure good adhesion). d) application e.g. filling instructions, freedom from voids and temperature conditions. e) curing, which should include curing period, any relevant environmental factors, provision to ensure product is undisturbed during the curing period. f) after curing, an inspection should be done on each potted assembly. Depending on the nature and repeatability of the process and the potted assembly, this could be for example using statistical techniques. Documented procedures should also ensure that segregation of related parts (e.g. terminals) and wiring/cabling is maintained and that specified colours, cross-sectional area, insulation thickness and labels (where appropriate) are fitted. Sealing arrangements should be verified for compatibility with the product's ingress protection rating.	Potting is not required for the Ex certified product.	n/a

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A.4.4	Enclosures for Group III or reduced spacing		
	For intrinsically safe apparatus for Group III, or for apparatus that relies on the enclosure for reduced spacing, demonstration of the conformity of the enclosure with the schedule drawings should include the following: a) depths of bore holes and tap holes. b) dimensional requirements for those enclosure parts relevant for sealing effectiveness or mechanical stability. c) insulating coatings and surface conditioning; material, layer thickness. Documented procedures should address the following: d) the gaskets correspond to the quoted specification. e) the sealing elements' effectiveness, e.g. by checking the sealing elements' correct fit. If a gasket's correct fit becomes apparent only after assembly, the imprint could be visually examined, e.g. by use of adequate methods such as use of chalk.	Not relating to current certified product.	n/a
A.4.5	Routine verifications and tests		
	Procedures for all routine verifications and tests specified in the schedule drawings should be reviewed, along with the results of those verifications and tests, e.g. high voltage tests on complete assemblies or individual components such as transformers, should be controlled by documented procedures and conducted on a 100 % basis unless otherwise permitted.	Not currently required for the Ex-product	n/a
A.4.6	Intrinsically safe circuits and assemblies incorporated in Ex equipment of other types of protection		
	Where Ex equipment contains intrinsically safe circuits then precautions should be taken as stated in the certificate to ensure that other items listed in the certificate are selected, mounted and installed in accordance with schedule drawings.		n/a

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A.5	Ex e – Increased safety covered by IEC 60079-7		
A.5.1	Ingress protection (IP)		Verdict
	Documented procedures should ensure that the following is verified: a) weld continuity. b) fitting of gaskets and seals. c) continuity of moulded grooves and tongues. d) application of cement including a visual inspection after curing.	Certified Ex d enclosure (Limatherm).	P
A.5.2	Internal wiring and contact integrity		
	Documented procedures should ensure that the following are verified: a) wiring is clamped as specified in the schedule drawings. b) wiring is terminated as specified in the schedule drawings. c) wires are as specified in the schedule drawings. d) connections are tightened as specified in the schedule drawings. e) creepage distances and clearances are as specified in the schedule drawings and have not been compromised.	No changes to Ex d housing if it affects Ex certified product. Reference Authorized Persons responsibilities.	P
A.5.3	Rotating machines		
	Documented procedures should ensure that the following are verified: a) rotor end connections and fixing bars are as specified in the schedule drawings. b) the fabrication process for die-cast rotors is as specified in the schedule drawings. c) production controls are in place for: – the air gap (rotor to stator) as specified in the schedule drawings. – the fan clearance as specified in the schedule drawings. – the bearing seal clearances as specified in the schedule drawings.		n/a

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	NOTE The schedule drawings might not specify a bearing seal clearance as not all Levels of Protection require a bearing seal clearance for all bearing seal designs.		
A.5.4	Windings		
	Documented procedures should ensure that the following are verified: a) wire and insulation system are as specified in the schedule drawings. b) the impregnations process is as specified in the schedule drawings. c) insulation materials are as specified in the schedule drawings. d) mechanical securing of conductors is as specified in the schedule drawings. e) type and mounting of protective devices (e.g. thermal cut-outs) are as specified in the schedule drawings.		n/a
A.5.5	Terminal boxes		
	Documented procedures should ensure that the following are verified: a) terminals are as specified in the schedule drawings. b) creepage distances and clearances as specified in the schedule drawings have not been compromised.		P
A.5.6	Cable Glands, terminals and other accessories		
	The dimensions specified in the schedule drawings should be confirmed on a statistical basis. Where entry openings are secured by non-Ex temporary plugs (e.g. for transport only), additional information should be provided.		P
A.5.7	Routine verifications and tests		
	Procedures for all routine verifications and tests specified in the schedule drawings should be reviewed, along with the results of those verifications and tests.		P

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4. Observations

Observation(s):

Obs.2025.07.001

Carrie Baily is new to the role of Q.A. Manager and although she has worked for company for some years. There should be some form of training / induction to the role.

Document History:

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