IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	**IECEx SIR 18.0065X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 3	Issue 2 (2021-10-08) Issue 1 (2020-11-11) Issue 0 (2019-04-29)
Date of Issue:	2024-06-07		

Applicant: **Pyromation LLC**
5211 Industrial Road
Fort Wayne, IN 46825
United States of America

Equipment: **Resistance Temperature Device (RTD) and Thermocouple Temperature Sensors**

Optional accessory:

Type of Protection: **Flameproof db and Dust Protection by Enclosure tb**

Marking: Ex db IIC T6…T4 Gb
Ex tb IIIC T+60°C… T+110°C Db
Refer to certificate annex for full marking.

Approved for issue on behalf of the IECEx Certification Body: **Michelle Halliwell**

Position: **Director Operations, UK & Industrial Europe**

Signature:
(for printed version)

Date:
(for printed version)

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom

IECEx Certificate of Conformity

Certificate No.: **IECEx SIR 18.0065X**

Date of issue: 2024-06-07

Issue No: 3

Manufacturer: **Pyromation LLC**
5211 Industrial Road
Fort Wayne, IN 46825
United States of America

Manufacturing locations: **Pyromation LLC**
5211 Industrial Road
Fort Wayne, IN 46825
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/CSAE/ExTR21.0065/00 GB/SIR/ExTR19.0121/00 GB/SIR/ExTR20.0205/00
GB/SIR/ExTR24.0066/00

Quality Assessment Report:

GB/SIR/QAR15.0011/07

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

The XP Series sensors are intended to measure temperature in industrial processes where explosive atmospheres are present or may be present. They may be attached directly to process piping or become part of a larger assembly placed into a hazardous location. Sensing elements are either resistance temperature devices (RTD) or thermocouples encased in a cylindrical metal sheath and terminated into a flame proof, dust protected enclosure via NPT tapered threads. The maximum sheath length is 15 meters. The sensor assembly may be connected to a facilities instrumentation wiring via a ½" or ¾" NPT- or M20 conduit opening in the enclosure. Wiring may be connected via a ceramic terminal block or an electronic transmitter which converts the sensor signal to a 4-20 mA output. Sensor probes may be rigidly mounted to the enclosure by welding or brazing or may be spring loaded inside of a thermowell. Model configurations are XP01, XP02, XP03, XP04, XP05, XP06, XP07. Model numbers may be preceded by HL06.

Refer to the Annexe for aditional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:
Refer to the Annexe.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This issue, Issue 3, recognises the following changes; refer to the certificate annex to view a comprehensive history:

1. Addition of new drawings H093701, H093702, H093703, H093704, H094901.
2. Update of existing drawings H068801, H068901, H069001, H069101, H069201, H069401, H069501, H071601.
3. Removal of drawing H068601 – replaced by new drawing H094901.
4. Addition of new transmitters T71, T72, and T142 and new enclosure 76.
5. Addition of new ratings and ambient temperatures for the new components.
6. Clarification of existing ratings and temperature tables.
7. Update to Conditions of Use to specify maximum process temperature for T4 rated equipment.
8. Update to Conditions of manufacture to add new transmitter and enclosure options.

Annex:

IECEx SIR 18.0065X issue 3 Annexe.pdf

Marking:

Ex db IIC T6...T4 Gb
Ex tb IIIC T+60°C... T+110°C Db

Temperature Ambient Range:

Enclosure Order Code	Electrical Connection Order Code	Ambient Temperature Range, T-Code & Dust Surface (with 6HN, 8HN, 6PN, **9HP** OR 8PN Head Mounting Fittings)	Ambient Temperature Range, T-Code & Dust Surface (with 6XU, 8XU or 8RXU Head Mounting Fittings)
75	T142 with or without display	-40°C TO +55°C T6 Gb; T110°C Db	-20°C TO +55°C T6 Gb; T110°C Db
		-40°C TO +70°C T5 Gb; T110°C Db	-20°C TO +60°C T5 Gb; T110°C Db
		-40°C TO +80°C T4 Gb; T110°C Db	
75, 77	T-642E, T-662E	-40°C TO +55°C T6 Gb; T110°C Db	-20°C TO +55°C T6 Gb; T110°C Db
		-40°C TO +70°C T5 Gb; T110°C Db	-20°C TO +60°C T5 Gb; T110°C Db
		-40°C TO +80°C T4 Gb; T110°C Db	
93 or 93,AD	TERMINAL BLOCK	-20°C TO +80°C T6 Gb; T80°C Db	-20°C TO +60°C T6 Gb; T60°C Db
		-20°C TO +95°C T5 Gb; T95°C Db	
93 or 93,AD	T-441, T-442	-20°C TO +55°C T6 Gb; T65°C Db	-20°C TO +55°C T6 Gb; T65°C Db
		-20°C TO +70°C T6 Gb; T80°C Db	-20°C TO +60°C T6 Gb; T70°C Db
		-20°C TO +85°C T5 Gb; T95°C Db	
93 or 93,AD	RTT15S	-20°C TO +85°C T4 Gb; T100C Db	-20°C TO +60°C T5 Gb; T85C Db
		-20°C TO +65°C T5 Gb; T85°C Db	-20°C TO 50°C T6 Gb; T70°C Db
		-20°C TO +50°C T6 Gb; T70°C Db	
93 or 93,AD	T71, T72, T82-00 (w/o display)	-20 TO +55°C T6 Gb T65°C Db	-20 TO +55°C T6 Gb, T65°C Db
		-20 TO +70°C T5 Gb T80°C Db	-20 TO +60°C T6 Gb T70°C Db
		-20 TO +85°C T4 Gb T95°C Db	
94	RTT15S	-40°C TO +85°C T4 Gb; T100°C Db	-20°C TO +60°C T5 Gb; T85°C Db
		-40°C TO +65°C T5 Gb; T85°C Db	-20°C TO +50°C T6 Gb; T70°C Db

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Enclosure Order Code	Electrical Connection Order Code	Ambient Temperature Range, T-Code & Dust Surface (with 6HN, 8HN, 6PN, **9HP** OR 8PN Head Mounting Fittings)	Ambient Temperature Range, T-Code & Dust Surface (with 6XU, 8XU or 8RXU Head Mounting Fittings)
		-40°C TO +50°C T6 Gb; T70°C Db	
94	TERMINAL BLOCK	-40°C TO +80°C T6 Gb; T80°C Db	-20°C TO +60°C T6 Gb; T60°C Db
		-40°C TO +95°C T5 Gb; T95°C Db	
94	T-441, T-442	-40°C TO +55°C T6 Gb; T65°C Db	-20°C TO +55°C T6 Gb; T65°C Db
		-40°C TO +70°C T6 Gb; T80°C Db	-20°C TO +60°C T6 Gb; T70°C Db
		-40°C TO +85°C T5 Gb; T95°C Db	
94	T71, T72, T82-00 (w/o display)	-40 TO +55°C T6 Gb T65°C Db	-20 TO +55°C T6 Gb, T65°C Db
		-40 TO +70°C T5 Gb T80°C Db	-20 TO +60°C T6 Gb T70°C Db
		-40 TO +85°C T4 Gb T95°C Db	
76	T71, T72, T82 (with display)	-40 TO +65°C T6 Gb T85°C Db	-20 TO +60°C T6 Gb T85°C Db
		-40 TO +80°C T5 Gb T100°C Db	
		-40 TO +85°C T4 Gb T105°C Db	
53CA-RTT15S (Silicone Rubber O-rings)	RTT15S	-40°C TO +85°C T5/ T4 Gb; T100C Db	-20°C TO +60°C T6 Gb; T85 Db
		-40°C TO +70°C T6 Gb; T85°C Db	
53MA-RTT15S (Silicone Rubber O-rings)	RTT15S	-40°C TO +85°C T5/ T4 Gb; T100C Db	-20°C TO +60°C T6 Gb; T85 Db
		-40°C TO +70°C T6 Gb; T85C Db	
53CB-RTT15S (FKM O-rings)	RTT15S	-20°C TO +85°C T5/ T4 Gb; T100C Db	-20°C TO +60°C T6 Gb; T85 Db
		-20°C TO +70°C T6 Gb; T85°C Db	
53MB-RTT15S (FKM O-rings)	RTT15S	-20°C TO +85°C T5/T4 Gb; T100C Db	-20°C TO +60°C T6 Gb; T85°C Db
		-20°C TO +70°C T6 Gb; T85°C Db	
54CA-RTT15S	RTT15S	-40°C to 80°C T5/T4 Gb; T100°C Db	-20°C TO 60°C T6 Gb; T85°C Db

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Enclosure Order Code	Electrical Connection Order Code	Ambient Temperature Range, T-Code & Dust Surface (with 6HN, 8HN, 6PN, **9HP** OR 8PN Head Mounting Fittings)	Ambient Temperature Range, T-Code & Dust Surface (with 6XU, 8XU or 8RXU Head Mounting Fittings)
(Silicone Rubber O-rings)		-40°C TO +70°C T6 Gb; T85°C Db	
54MA-RTT15S (Silicone Rubber O-rings)	RTT15S	-40°C TO +80°C T5/T4 Gb; T100°C Db	-20°C TO +60°C T6 Gb; T85°C Db
		-40°C TO +70°C T6 Gb; T85°C Db	
54CB-RTT15S (FKM O-rings)	RTT15S	-20°C TO +80°C T5/T4 Gb; T100°C Db	-20°C TO +60°C T6 Gb; T85°C Db
		-20°C TO +70°C T6 Gb; T85°C Db	
54MB-RTT15S (FKM O-rings)	RTT15S	-20°C TO +80°C T5/T4 Gb; T100°C Db	-20°C TO +60°C T6 Gb; T85°C Db
		-20°C TO +70°C T6 Gb; T85°C Db	

Equipment:

The XP Series sensors are intended to measure temperature in industrial processes where explosive atmospheres are present or may be present. They may be attached directly to process piping or become part of a larger assembly placed into a hazardous location. Sensing elements are either resistance temperature devices (RTD) or thermocouples encased in a cylindrical metal sheath and terminated into a flame proof, dust protected enclosure via NPT tapered threads. The maximum sheath length is 15 meters. The sensor assembly may be connected to a facilities instrumentation wiring via a ½″ or ¾″ NPT- or M20 conduit opening in the enclosure. Wiring may be connected via a ceramic terminal block or an electronic transmitter which converts the sensor signal to a 4-20 mA output. Sensor probes may be rigidly mounted to the enclosure by welding or brazing or may be spring loaded inside of a thermowell. Model configurations are XP01, XP02, XP03, XP04, XP05, XP06, XP07. Model numbers may be preceded by HL06.

Key Model Options that affect the Ambient Temperature Range and Temperature Code are:
Enclosure Options: 75; 76; 77; 93; 93,AD; 94; 53CA-RTT15S; 53CB-RTT15S; 53MA-RTT15S; 53MB-RTT15S; 54CA-RTT15S; 54CB-RTT15S; 54MA-RTT15S; 54MB-RTT15S

Electrical Connection Options: RTT15S, T-642E, T-662E, T-441, T-442, T82-00, T71, T72, T142 and None Specified (Terminal Block). Note – specific part numbers for T71 and T72 that include specific markings on transmitter and with or without display option are designated T71-00, T71C-00, T71-D10, T71C-D10, T72-00, T72C-00, T72-D10, T72C-D10, the T82 may be designated T82-00 without optional display and T82-D10 with optional display)
Head Mounting Fitting Options: 6HN, 8HN, 6PN, 8PN, 6XU & 8XU, 8RXU, 9HP

The rating IPx6 is not part of the methods of protection and were tested independent of the IECEx requirements. The equipment has been independently tested against the requirements of IEC 60529 and it meets IP66.

Specific Conditions of Use:

1. Contact the manufacturer if dimensional information of flame proof joints is needed.

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2. Field connections to the XP sensors shall be appropriately certified for the location and installed in accordance with wiring method requirements of the local electrical code as applicable.
3. Heat transfer from the process must not cause the XP sensor enclosure to exceed the T-code (gas) or Surface Temperature (dust) rating of the sensor assembly (T6≤+85C; T5≤+100C**;** T4≤+130C). Therefore, it is end-user's responsibility to ensure that the ambient around the XP sensor enclosure does not exceed the permitted ambient. Prevention measures include installing suitable insulation or an assembly with suitable length sheath or lagging.
4. Sensors XP05 & XP06 are provided without thermowells. To maintain validity of Dust Ignition Protection by Enclosure level Ex "tb" certification and IP66 rating, the thermowell, piping and fittings must meet the requirements of the installation figure.
5. The ranges of stopping plugs shall not be used in conjunction with any other cable entry device.
6. Reducers shall not be used for the direct inter-connection of enclosures.
7. Any un-used enclosure entry must be filled with a properly certified Ex "db tb" IP66 stopping plug\blanking element.
8. For 93AD or 53 Enclosures
   This equipment has a non-conducting coating and may generate an ignition-capable level of electrostatic charge under certain extreme conditions. When installed in Group III dust atmospheres the user shall take the necessary precautions to minimise the risk from electrostatic discharge. For example; control of the environmental humidity of the installation to minimize the generation of static electricity; protection from direct airflow that could cause a transfer of charge to the surface of the equipment; suitable electrical bonding and earth provisions; cleaning of the equipment only with a damp cloth.

Conditions of Manufacture:

1. The XP Series sensors probe sheath with welds shall be Routine tested in accordance with clause 16.3 of IEC 60079-1. The Routine test may be an Overpressure test at 737 PSI (5081 KpA), or one of the inspection methods identified by IEC 60079-1, section 16.3.
2. The XP Series sensors incorporate the following previously certified components. It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these components, and to inform CSA Group Testing UK Ltd of any modifications to the components which may impinge upon the explosion safety design of the XP Series sensors.
   - Temperature Transmitter, Series 642 and 662. Certificate numbers: IECEx DEK 16.0011 and DEKRA 16ATEX0002. Pyromation code Model RTT15S- temperature transmitter, Certificate numbers: IECEx DEK 16.0062X and DEKRA 16ATEX0102X
   - Temperature Transmitter with enclosure: Pyromation code 53CA-RTT15S, 53CB-RTT15S, 53MA-RTT15S, 53MB-RTT15S, 54CA-RTT15S, 54CB-RTT15S, 54MA-RTT15S, 54MB-RTT15S, Certificate numbers: IECEx DEK 16.0038X and DEKRA 16ATEX0076X
   - Enclosures, Pyromation models 93C & D, 93C-AD & 93D-AD and 94C & D. Certificate numbers: IECEx SIR 15.0109U and SIR 15ATEX1291U.
   - ¾"NPT to ½" NPT thread adapter, manufactured by HLS Model R1.3/4.1/2.N. Certificate numbers: IECEx SIR 07.0046X and Sira 07ATEX1175X.
   - ¾"NPT to M20x1.5 thread adapter, manufactured by HLS Model R1.3/4.20.N. Certificate numbers: IECEx SIR 07.0046X and Sira 07ATEX1175X.
   - ¾"NPT to M25x1.5 thread adapter, manufactured by HLS Model R1.3/4.25.N. Certificate numbers: IECEx SIR 07.0046X and Sira 07ATEX1175X.
   - Union fitting, dust ignition protected by enclosure "tb", manufactured by ELFIT S.p.A CORTEM, models BFF1G or BFF1S. Certificate numbers: IECEx CSA 10.0002U and CESI 99ATEX034U.
   - M20 to ½" NPT sensor fitting adaptor Certificate numbers: IECEx SIR 07.0047X and Sira 07ATEX1175X.
   - Enclosures, Pyromation models 76. Certificate numbers: IECEx DEK 23.0035U and DEKRA 23ATEX0040U.
   - Temperature Transmitter, Pyromation model T71 (without display). Certificate numbers: IECEx EPS 23.0020X, EPS 23 ATEX 1 089 X, CSA 22.80139060.

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- Temperature Transmitter, Pyromation model T82 (without display). Certificate numbers: IECEx EPS 23.0018X, EPS 23 ATX 1 087 X.
- Temperature Transmitter, Pyromation model T71, T72, T82 (with display, 76 enclosure). Certificate numbers: IECEx DEK 23.0036 and DEKRA 23ATEX0041, Enclosure IECEx DEK 23.0035U, DEKRA 23ATEX0040U.
- Temperature Transmitter, Pyromation model T72 (with display) . Certificate numbers: IECEx EPS 23.0020X, EPS 23 ATEX 1 089 X, CSA 22.80139060.
- Temperature Transmitter, Pyromation model T142 (with or without display, with 75 enclosures. Certificate numbers: IECEx DEK 23.0037X, DEKRA 23ATEX0042X

Full Certificate Change History:

Issue 1 – this Issue introduced the following change:

1. Label drawings updated to correct the (ATEX) notified body number from '0518' to '2813'.

Issue 2 – this Issue introduced the following changes:

1. Marking section revised as below:
   a) Ratings revised to include new Schneider electric transmitter RTTS15S; Input: 8-35VDC, 840mW OR 8-30VDC, 750mW Output: 4-20 mA
   b) Added ambient temperature range and T-code for (1) RTT15S transmitter used in 93/94 enclosure (2) RTT15S- ...1, RTT15S- ...2, RTT15S- ...3, RTT15S- ...4
2. Product description has been updated to add (1) enclosure-transmitter options: 53CA-RTT15S, 53CB-RTT15S, 53MA-RTT15S, 53MB-RTT15S, 54CA-RTT15S, 54CB-RTT15S, 54MA-RTT15S, 54MB-RTT15S (2) transmitter: RTT15S (3) Head mounting fitting options: 8RXU.
3. Updated notified body number from '0518' to '2813' from label drawings.
4. Added thread adaptor M20 to ½"NPT, "IECEx SIR 07.0047X" "SIR 07ATEX1175X" for use with enclosures 53, 54.
5. Added designation "C-AD" and "D-AD" for enclosures "93" under condition of Manufacturer, due to update in their certificate.
6. Clarified ambient range for "6XU or 8XU or 8RXU Head Mounting Fittings".
7. Removal of suffix "F" from XP03, XP07 in Product name from "F spring loaded element" to "spring loaded element".
8. Marking section updated to show "year of manufacturer" instead of "tag number" in serial number, year of manufacturer section.
9. Drawings updated to add new enclosure, transmitter, fitting, RTD sensor and thermocouple types, Alloy 600 sheath material, FE sensor option for XP05, XP06.
10. Condition of Manufacturer updated to add new enclosures options and fitting options.

Issue 3 – this Issue introduced the following changes:

1. Addition of new drawings H093701, H093702, H093703, H093704, H094901.
2. Update of existing drawings H068801, H068901, H069001, H069101, H069201, H069401, H069501, H071601.
3. Removal of drawing H068601 – replaced by new drawing H094901.
4. Addition of new transmitters T71, T72, and T142 and new enclosure 76.
5. Addition of new ratings and ambient temperatures for the new components.
6. Clarification of existing ratings and temperature tables.
7. Update to Conditions of Use to specify maximum process temperature for T4 rated equipment.
8. Update to Conditions of manufacture to add new transmitter and enclosure options.

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