1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **SIRA 18ATEX1250X** Issue: **4**

4 Equipment: **XP Series resistance temperature device (RTD) and thermocouple temperature sensors**

5 Applicant: **Pyromation LLC**

6 Address: 5211 Industrial Rd
Fort Wayne, Indiana 46825
USA

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN IEC 60079-0:2018 EN 60079-1:2014 EN 60079-31:2014

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

II 2GD
Ex db IIC T6…T4 Gb
Ex tb IIIC T+60°C… T+110°C Db

Signed: Michelle Halliwell

Title: Director of Operations

PRODUCTS RvA C 652

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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)
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
		-40°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)
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	

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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)
54CA-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	
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	

13 **DESCRIPTION OF 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)

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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.

Variation 1 - This variation introduced the following change:

i. Label drawings updated to correct the notified body number from '0518' to '2813'.

Variation 2 - This variation introduced the following changes:

i. 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
ii. 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.
iii. Updated notified body number from '0518' to '2813' from label drawings.
iv. Added thread adaptor M20 to ½"NPT, "IECEx SIR 07.0047X" "SIR 07ATEX1175X" for use with enclosures 53, 54.
v. Added designation "C-AD" and "D-AD" for enclosures "93" under condition of Manufacturer, due to update in their certificate.
vi. Clarified ambient range for "6XU or 8XU or 8RXU Head Mounting Fittings".
vii. Removal of suffix "F" from XP03, XP07 in Product name from "F spring loaded element" to "spring loaded element".
viii. Marking section updated to show "year of manufacturer" instead of "tag number" in serial number, year of manufacturer section.
ix. Drawings updated to add new enclosure, transmitter, fitting, RTD sensor and thermocouple types, Alloy 600 sheath material, FE sensor option for XP05, XP06.
x. ondition of Manufacturer updated to add new enclosures options and fitting option.

Variation 3 - This variation introduced the following changes:

i. Addition of new drawings H093701, H093702, H093703, H093704, H094901.
ii. Update of existing drawings H068801, H068901, H069001, H069101, H069201, H069401, H069501, H071601.
iii. Removal of drawing H068601 **–** replaced by new drawing H094901.
iv. Addition of new transmitters T71, T72, and T142 and new enclosure 76.
v. Addition of new ratings and ambient temperatures for the new components.
vi. Clarification of existing ratings and temperature tables.
vii. Update to Conditions of Use to specify maximum process temperature for T4 rated equipment.
viii. Update to Conditions of manufacture to add new transmitter and enclosure options.

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14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	29 April 2019	R70210519A	The release of the prime certificate.
1	15 October 2019	4168	Transfer of certificate SIRA 18ATEX1250X from Sira Certification Service to CSA Netherlands B.V.
2	11 November 2020	R80045376A	The introduction of Variation 1.
3	08 October 2021	R80059341A	The introduction of Variation 2.
4	07 June 2024	R80176937A	The introduction of Variation 3

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

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

15.2 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.

15.3 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.

15.4 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.

15.5 The ranges of stopping plugs shall not be used in conjunction with any other cable entry device.

15.6 Reducers shall not be used for the direct inter-connection of enclosures.

15.7 Any un-used enclosure entry must be filled with a properly certified Ex "db tb" IP66 stopping plug\blanking element.

15.8 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.

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16 **ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II** (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 **CONDITIONS OF MANUFACTURE**

17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.

17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.

17.3 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.

17.4 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.
- Temperature transmitter, Model RTT15S. 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
- Temperature Transmitter, Pyromation model T82 (without display). Certificate numbers: IECEx EPS 23.0018X, EPS 23 ATX 1 087 X

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- 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