



[1]

UNITED KINGDOM CONFORMITY ASSESSMENT
UK-TYPE EXAMINATION CERTIFICATE

[2]

**Product or Protective System Intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1**

[3] UK-Type Examination Certificate No.: **UL21UKEX2371X Rev. 0**

[4] Product: **Pressure transmitter, type series SPX-T and SPXGEN2**

[5] Manufacturer: **Dynisco Instruments**

[6] Address: **38 Forge Parkway, Franklin, MA 02038, USA**

[7] This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8] UL International (UK) Ltd, Approved Body number 0843, in accordance with Regulation 44 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended by UKSI 2019:696), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in the confidential report **UKRCC-4790168232.1**.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:


EN IEC 60079-0:2018 EN 60079-11:2012 EN 60079-26:2015

Except in respect of those requirements listed at section 19 of the schedule to this certificate.

[10] If the sign "X" is placed after the certificate number, it indicates that the product is subject to specific conditions of use specified in the schedule to this certificate.

[11] This UK-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

[12] The marking of the product shall include the following:

 **II 1 G Ex ia IIC T6...T4 Ga**
or

 **II 2 G Ex ia IIC T6...T4 Gb**

Certification Manager

Andrew Moffat

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the UKEx Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Regulations. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2022-04-29

Approved Body

UL International (UK) Ltd Unit 1-3 Horizon Kingsland Business Park Wade Road, Basingstoke RG24 8AH, UK
Phone : +44 (0)1256 312100



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Schedule

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Description of Product

The pressure transmitters of type series SPX-T and SPXGEN2 are used to convert a mechanical quantity (pressure) into a proportional electrical quantity in the field of process control. Both type series are supplied by an intrinsically safe 4...20 mA current loop with superimposed digital data communication in accordance with the HART-protocol. The conditioned measured value is available as an analog 4...20 mA current signal. Type series SPX-T is optionally provided with an additional intrinsically safe 4...20 mA current loop which is used to display temperature, however, without digital data communication, as well as an optionally available secondary resistive temperature detector (RTD). HALL-switches (SPX-T) or pushbuttons (SPXGEN2) enable adjustments of Zero and Span. These are installed inside the enclosure. The transmitters may be operated as category-1- or category-2-equipment according to the specifications listed below

Category-1-equipment:

For application as category-1-equipment the following marking and ambient temperatures apply:

Marking:  **II 1 G Ex ia IIC T6...T4 Ga**

For relationship between maximum permissible ambient temperatures, maximum permissible medium temperatures and temperature class reference is made to the following table:

Temperature class	T6	T4
Max. Permissible ambient temperature	50°C	85°C
Max. Permissible medium temperature	60°C	85°C

The minimum permissible ambient and medium temperature is -20°C

Category-2-equipment:

For application as category-2-equipment the following marking and ambient temperatures apply:

Marking:  **II 2 G Ex ia IIC T6...T4 Gb**

For relationship between maximum permissible ambient temperatures, maximum permissible medium temperatures and temperature class reference is made to the following table:

Temperature class	T6	T4
Max. Permissible ambient temperature	60°C	85°C
Max. Permissible medium temperature	60°C	85°C

The minimum permissible ambient and medium temperature is -20°C

Electrical data

SPX-T and SPXGEN2

Supply and evaluation circuit (plug connector or open ended cable, terminals: PWR+/SIG+, PWR-/SIG-, RCAL+, RCAL-)

Type of protection Intrinsic Safety Ex ia IIC only for connection to a certified intrinsically safe circuit

Maximum values:

- Ui = 30 V
- Ii = 100 mA
- Pi = 750 mW
- Ci = 4.5 nF
- Li = 40 µH

Only passive components without internal power source and without external circuits shall be connected to the terminals RCAL+/RCAL-

Sensor circuit

Internal, in type of protection Intrinsic Safety



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SPX-T

Supply and evaluation circuit (plug connector or open ended cable, terminals: PWR+/SIG+, PWR-/SIG-, RCAL+, RCAL-, RTD-, RTD+, RTD+2nd PWR+/SIG+, 2nd PWR-/SIG-)

Type of protection Intrinsic Safety Ex ia IIC only for connection to a certified intrinsically safe circuit

Maximum values per circuit:

$U_i = 30 \text{ V}$
 $I_i = 100 \text{ mA}$
 $P_i = 750 \text{ mW}$
 $C_i = 4.5 \text{ nF}$
 $L_i = 40 \text{ }\mu\text{H}$

Only passive components without internal power source and without external circuits shall be connected to the terminals RCAL+/RCAL-

Sensor circuit

Internal, in type of protection Intrinsic Safety

Routine tests

None

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Test Report No. (associated with this certificate issue)
DE/PTB/ExTR17.0044/01

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Specific conditions of use:

- The housing of the pressure transmitters, type series SPX-T and SPXGEN2 shall be connected reliably to the local equipotential bonding system.
- Those variants of the pressure transmitters, type series SPX-T and SPXGEN2 which include the material aluminium, shall be installed in such a way that sparking as a result of impact or friction between aluminium and steel is excluded. Impact or friction between aluminium and stainless steel is allowed if the existence of rust particles can be excluded.
- For application as category-1-equipment the connecting cable shall be equipped with a suitable conductive coating ($R_{\text{surface}} < 10^9 \text{ }\Omega$) to avoid possible electrostatic charge.


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Conditions of certification:
None

[19]

Essential Health and Safety Requirements (Regulations Schedule 1)
In addition to the Essential Health and Safety Requirements covered by the standards listed at item 9, all other requirements are demonstrated in the relevant reports.



The trademark  will be used as the company identifier on the marking label.

The manufacturer shall inform the approved body concerning all modifications to the technical documentation as described in Annex III to UKSI 2016:1107 (as amended by UKSI 2019:696) – Schedule 3A, Part 1.



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Schedule
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[20] Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
Safety Documentation			
I.S. Safety Description	975051 (47 sheets)	H	2020-03-19
Description of changes			2020-03-19
Calculations	(29 sheets)		2009-09-29
Drawing of Creepage and Clearance Distances (Schematics)	975066 (11 sheets)	B	2009-07-07
PCB Layout (Artwork) + assembly			
8-Pin Con. Bd. w/ HALL Switches for a Welded Shell	975129 (2 sheets)	A	2009-07-07
8-Pin Con. Bd. w/ HALL Switches for a Welded Shell	975152 (2 sheets)	A	2009-09-29
Digital Bd.	975131 (4 sheets)	A	2009-07-07
Digital Bd.	975154 (2 sheets)	A	2009-09-29
Analog Bd.	975130 (4 sheets)	B	2009-07-07
Analog Bd.	975153 (2 sheets)	A	2009-09-29
6-Pin Con. Bd. w/ HALL Switches for a Welded Shell	975126 (2 sheets)	A	2009-07-07
6-Pin Con. Bd. w/ HALL Switches for a Welded Shell	975149 (2 sheets)	A	2009-09-29
6-Pin Con. Bd. w/ Pushbuttons for a Welded Shell	975127 (2 sheets)	A	2009-07-07
6-Pin Con. Bd. w/ Pushbuttons for a Welded Shell	975150 (2 sheets)	A	2009-09-29
6-Pin Con. Bd. w/ Pushbuttons for an O-Ring Sealed Shell	975128 (2 sheets)	A	2009-07-07
6-Pin Con. Bd. w/ Pushbuttons for an O-Ring Sealed Shell	975151 (2 sheets)	A	2009-09-29
2nd 4-20mA Bd.	975125 (4 sheets)	A	2009-07-07
2nd 4-20mA Bd.	975148 (2 sheets)	A	2009-09-29
RTD Protection Bd.	975132 (2 sheets)	B	2009-07-07
RTD Protection Bd.	975155 (2 sheets)	A	2009-09-29
Construction			
Amplifier Potting Detail, SPX-T Series	640901	E	2009-09-29
Mating Connector Solder, Heat Shrink, & Potting Detail	640909	D	2009-07-07
Label, SPT-T (Intrinsically Safe-Entity)	640630	E	2022-03-14
Nameplate	856345	K	2022-03-02
Schematics			
8-Pin Con. Bd. w/ HALL Switches for a Welded Shell	999577C	E	2009-07-07
Digital Bd.	999579C (2 sheets)	E	2009-07-07
Analog Bd.	999592C (2 sheets)	E	2009-07-07
6-Pin Con. Bd. w/ HALL Switches for a Welded Shell	999594C	E	2009-07-07
6-Pin Con. Bd. w/ Pushbuttons for a Welded Shell	999595C	E	2009-07-07
6-Pin Con. Bd. w/ Pushbuttons for an O-Ring Sealed Shell	999596C	E	2009-07-07
2nd 4-20mA Bd.	999593C	E	2009-07-07
RTD Protection Bd. Non Ex	999537C	D	2009-07-07
RTD Protection Bd. Ex	999539C	B	2009-07-07
SPX ATEX/UKEx Intrinsic Safety Instructions	974182	A	2022-03-11
DYNISCO SPXT Test Specification + Report Max. Surface Temperature	(16 pages)	V1.1	2009-09-24
Test report, TÜV Nord	8000604800 / 04CR076 (2 sheets)		2004-03-24
Bill of material	BM999*** (9 sheets)		



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Title:	Drawing No.:	Rev. Level:	Date:
Clearances and creepage distances	975081 (2 sheets)	A	2009-03-18
Clearances and creepage distances	975082 (5 sheets)	A1	2009-03-19
Clearances and creepage distances	975083 (4 sheets)	B	2009-07-02
Clearances and creepage distances	975085 (2 sheets)	A	2009-03-18
Clearances and creepage distances	975086 (2 sheets)	A	2009-03-18
Clearances and creepage distances	975087 (2 sheets)	A	2008-08-22
Clearances and creepage distances	975084 (5 sheets)	A	2009-03-20
Clearances and creepage distances	975124 (2 sheets)	B	2009-06-19
PCB-specification	975057 (3 sheets)	C	2009-02-20
PCB-specification	975061 (3 sheets)	C	2009-03-19
PCB-specification	975062 (3 sheets)	C	2009-07-06
PCB-specification	975058 (3 sheets)	C	2009-02-20
PCB-specification	975059 (3 sheets)	C	2009-02-20
PCB-specification	975060 (3 sheets)	C	2009-02-20
PCB-specification	975063 (3 sheets)	C	2009-02-20
PCB-specification	975105 (3 sheets)	C	2009-05-26
Data sheets			

