



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 LCIE 13.0023X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 4	Issue 3 (2023-05-09)
Date of Issue:	2024-02-07		Issue 2 (2020-04-27)
Applicant:	Ashcroft Instruments GmbH Max-Planck-Straße 1 52477 Alsdorf Germany		Issue 1 (2015-02-25)
Equipment:	Temperature probe - Type: S **		Issue 0 (2013-07-08)
Optional accessory:			
Type of Protection:	"Ex ia" or "Ex ib"		
Marking:	Ex ia IIC T6...T4 Ga Ex ia IIB T6...T4 Ga Ex ib IIC T6...T4 Gb Ex ib IIB T6...T4 Gb IECEX LCIE 13.0023 X See attachment for full marking.		

Approved for issue on behalf of the IECEx
Certification Body:

Certification Officer

Position:

Julien GAUTHIER

Signature:
(for printed version)

Date:
(for printed version)

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Certificate issued by:

Laboratoire Central des Industries Electriques (LCIE)
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France





IECEX Certificate of Conformity

Certificate No.: **IECEX LCIE 13.0023X**

Page 2 of 4

Date of issue: 2024-02-07

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Manufacturer: **Ashcroft Instruments GmbH**
Max-Planck-Straße 1
52477 Alsdorf
Germany

Manufacturing locations: **Ashcroft Instruments GmbH**
Max-Planck-Straße 1
52477 Alsdorf
Germany

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 60079-11:2011](#) Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

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:

[FR/LCIE/ExTR13.0022/00](#)
[FR/LCIE/ExTR23.0008/00](#)

[FR/LCIE/ExTR13.0022/01](#)
[FR/LCIE/ExTR23.0068/00](#)

[FR/LCIE/ExTR20.0023/00](#)

Quality Assessment Reports:

[GB/CSAE/QAR24.0001/00](#)

[GB/SIR/QAR10.0013/10](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX LCIE 13.0023X**

Page 3 of 4

Date of issue: 2024-02-07

Issue No: 4

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The equipment consists of:

- a sensor cable jacketed, with or without a connection head enclosure (minimum degree of protection IP20),
- terminals with or without temperature transmitter certified Ex ia or ib IIC or IIB integrated inside connection head,
- an extension cable with terminal block or connector shell.

The insert can be mounted in a thermowell that will be fixed to the head of connector.

See attachment for more details.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- The intrinsically safe apparatus shall only be connected to associated intrinsically safe apparatus certified for the intended use. This association shall comply with the requirements of the standard IEC 60079-25:2010.
- The maximum permitted probe length is 200m.
- For equipment constructed with aluminium alloy enclosure, it must be installed in such a manner as to eliminate the risk of sparks caused by friction or impact.
- For temperature probes equipped with transmitter, the transmitters allowed must be a certificated one listed in the equipment description. Refer to the attachment for the details.
- Ambient temperature range: refer to the attachment for the details.
- Temperature classification concerns only head connection. It is the responsibility of the manufacturer or end user to ensure that the external source of heating or cooling (if available) doesn't impact the temperature classification of the equipment.
- For the probes having a diameter between 0.5mm and 1.6mm, the power supply shall be isolated from earth.



IECEX Certificate of Conformity

Certificate No.: **IECEX LCIE 13.0023X**

Page 4 of 4

Date of issue: 2024-02-07

Issue No: 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 0:

Initial issue according to IEC 60079-0 Ed.6.0 and IEC 60079-11 Ed.6.0 standards.

Issue 1:

- Addition of the models S40, S41, S96.
- Addition of several 4-20mA certified transmitters.
- Modification of the operating ambient temperature for connection head (-55°C to +60°C).

Issue 2:

- Normative update according to IEC 60079-0 Ed.7.0 standard.
- Updating of the electrical parameters, the temperature classifications and the specific conditions of use.

Issue 3:

- Addition of type of certified 4-20mA HART, Profibus, Fieldbus transmitters:
ABB TTH200-H1 / TTR200-H1 / TTF200-H1 / TTH300-H1H / TTF300-H1H;
Rosemount 248 / 644R / 644 / 644H;
PR electronics 5335D / 5337D / 5331D3B / 5334B3B.
- Addition of temperature probes S90, S91.
- Removal of S30, S31, S60, S61 et S62.
- Modification of the operating ambient temperature near the connection head (following the information on the temperature table).

Issue 4:

Change of the Applicant's/Manufacturer's name and address: from **Rüeger SA** to **Ashcroft Instruments GmbH**.

Annex:

[Annex 01 to IECEX LCIE 13.0023X issue 04.pdf](#)

FULL EQUIPMENT DESCRIPTION

The equipment consists of:

- a sensor cable jacketed, with or without a connection head enclosure (minimum degree of protection IP20),
- terminals with or without temperature transmitter certified Ex ia/ib IIC/IIB integrated inside the connection head,
- an extension cable with terminal block or connector shell.

The insert can be mounted in a thermowell that will be fixed to the head of connector.

Connection head enclosure are made of aluminium alloy or stainless steel.

The maximum length of the probe is 200m for:

- the models without or with transmitter,

The measuring element is connected either to a terminal block or or one of the transmitters from the associated transmitters table below.

Manufacturer	Type	Certificate reference & Standards
ABB	TTH200-H1	IECEX PTB 20.0035X Issue 0 IEC 60079-0:2017 and IEC 60079-11:2011
	TTR200-H1	
	TTF200-H1	
	TTH300-H1H	
	TTF300-H1H	
Rosemount	248	IECEX BAS 18.0062X Issue 0 IEC 60079-0:2017 and IEC 60079-11:2011
	644R	IECEX BAS 07.0053X Issue 4 IEC 60079-0:2017 and IEC 60079-11:2011
	644	IECEX BAS 12.0069X Issue 2 IEC 60079-0:2017 and IEC 60079-11:2011
	644H	IECEX BAS 07.0053X Issue 4 IEC 60079-0:2017 and IEC 60079-11:2011
PR electronics	5335D / 5337D	IECEX DEK 20.0063X Issue 0 IEC 60079-0:2017 and IEC 60079-11:2011
	5331D3B / 5334B3B	IECEX DEK 20.0059X Issue 0 IEC 60079-0:2017 and IEC 60079-11:2011

Temperature classification in relation to the ambient temperature range:

Models	Temperature classification	Ambient temperature range
Without transmitter	Category ia	-55°C to +55°C -55°C to +70°C -55°C to +90°C
	T6	
	T5	
	T4	
With transmitter ABB: TTH200-H1 / TTR200-H1 / TTF200-H1 TTH300-H1H /TTF300-H1H (HW-Rev. 2.00)	Category ia	-50°C to +55°C -50°C to +56°C -50°C to +85°C
	T6	
	T5	
	T4	
With transmitter Rosemount (Emerson): 248 (HA17)	Category ia	-55°C to +55°C -55°C to +70°C
	T6 T5	
With transmitter Rosemount (Emerson): 644R (AI7)	Category ia	-55°C to +40°C -55°C to +50°C -55°C to +80°C
	T6 (Pi≤0.67W)	
	T5 (Pi≤0.67W) T4 (Pi≤1.0W)	
With transmitter Rosemount (Emerson): 644 (HA17 or SA17 or FA17 or DA17)	Category ia	-55°C to +40°C -55°C to +50°C -55°C to +80°C
	T6 (Pi≤0.67W)	
	T5 (Pi≤0.67W) T4 (Pi≤0.80W)	

Models	Temperature classification	Ambient temperature range
With transmitter Rosemount (Emerson): 644H (FI7 or WI7)	Category ia T4	-50°C to +60°C
With transmitter PR electronics: 5335D, 5337D, 5331D3B, 5334B3B	Category ia T6 (Pi≤0.75W) T5 (Pi≤0.75W) T4 (Pi≤0.75W)	-40°C to +50°C -40°C to +65°C -40°C to +85°C

MARKING

Complete marking:

⇒ Models without transmitters:



Ashcroft Instruments GmbH. or

Address: ...

Type: S**

Serial number: ...

Year of manufacturing: ...

Ex ia IIC T6...T4 Ga (1)

IECEX LCIE 13.0023 X

U_i : 30 V; I_i : 100 mA; P_i : 0.75W; C_i : 280pF/m; L_i : 15µH/m

(1) See temperature table in clause "FULL EQUIPMENT DESCRIPTION"

Complete marking:

⇒ Models with transmitters:



Ashcroft Instruments GmbH. or

Address: ...

Type: S**

Serial number: ...

Year of manufacturing: ...

Ex ia IIC T... Ga (1)

Ex ia IIB T... Ga (1)

Ex ib IIC T... Gb (1)

Ex ib IIB T... Gb (1)

IECEX LCIE 13.0023 X

U_i : ... ; I_i : ... ; P_i : ... ; C_i : ... ; L_i : ... (2)

(1) See temperature table in clause "FULL EQUIPMENT DESCRIPTION"

(2) Adapted according to the certificate of the used transmitter.

RANGE DETAILS

S 01: Insert thermometer with thermocouple or RTD

S 10: Consisting of

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Protection connection \geq IP 20

S 20: Consisting of

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Protection connection \geq IP 20
- Build-up thermowell according to standard DIN 43772 / T.2 Form 2-2G-2F.

S 21: Consisting of

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Protection connection \geq IP 20
- Hammered thermowell according to standard DIN 43772 / T.2 Form 3-3G-3F.

S 22: Consisting of

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Protection connection \geq IP 20
- Stepped and welded thermowell according to standard DIN 43772 / T.2 Form 2-2G-2F.

S 40: Consisting of

- Connection head with cable gland \geq IP 20
- Inset with ceramic insulation
- Ceramic or metallic thermowell (AK, AMK, AM)

S 41: Consisting of

- Connection head with cable gland \geq IP 20
- Inset with ceramic insulation
- Ceramic thermowell (AK, AKK)

S 50 drawing no. 3S50 92-334

Consisting of:

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Ensuring threads \geq IP 20

S 70 drawing no. 4S70 92-108

Consisting of:

- Connection head with cable gland \geq IP 20
- Inset S 01 diameter \geq 2 mm
- Connection in three parts:

Options:

- Reduction in steel with internal thread from 1/2" to 1" and external thread from 1" to 2" NPT
- To be threaded with a minimum engaged length of 5 threads.
- With spiral to compensate the thermal expansion
- Different welding executions: welding point for RTD, crimped execution and welded execution Sealing

S 80 and S82: Consisting of

- TC K-J-E-T-U-L-N-S-R-B according to standard
- MgO insulating or Glue insulating
- Metallic outer sheath diameter from 0.5 to 20 mm usually, up to 200m length max.
- Compensated Terminals and differentiated
- Extension isolated shielded cable

S 81 and S 83: Consisting of

- RTD Pt, Ni or Cu with ceramic or glass insulating according to standard
- MgO insulating or Glue insulating
- Metallic outer sheath diameter from 0.5 to 20 mm usually, up to 200m length max.
- Optional connectors as in the drawing
- Extension isolated shielded cable

- S 90: Consisting of
- Bimetallic thermometer and one or two PT100 sensors
 - Standard connection head and cable gland \geq IP 20
 - Inset diameter 6, 8, 9 mm
- S 91: Consisting of
- Gas pressure thermometer and one or two PT100 sensors
 - Standard connection head and cable gland \geq IP 20
 - Inset diameter 6, 8, 9 mm
 - Flexible execution
(S91 = TF1+ PT100)
 - Straight execution
(S91 = TG1+ PT100)
- S 96 (S96_FS-347): Consisting of
- Execution flexible
 - Thermosensor RTD or TC
 - Inset S 01 diameter \geq 2 mm
 - Ex i execution with insulated sensor or hot junction
 - Standard connection head and cable gland \geq IP 20

- S 96 (S96_56-350): Consisting of
- Execution flexible
 - Thermosensor RTD or TC
 - Inset S 01 diameter \geq 2 mm
 - Ex i execution with insulated sensor or hot junction
 - Standard connection head and cable gland \geq IP 20
 - Security chamber for leak detection

	S**	*	***	*	*****	*	**	*	*	
	Char 27									Option 22 Ambient temperature extended (Ex ia to Ex ib) - Ambient temperature for Ex ia B Ambient temperature for Ex ib
										Option 21 - = Without transmitter 1-2 = ABB TTF200 3 = ABB TTF300.**F 4-5 = ABB TTF300.**H 6-7 = ABB TTF300.**P 8 = ABB TTH200 9 = ABB TTH300.**F A = ABB TTH300.**H B = ABB TTH300.**P C = ABB TTR200 D = PR 5331D3B E = PR 5334B3B Char 26 F = PR 5335D G = PR 5337D I = Rosemount 248HA J = Rosemount 248RA K = Rosemount 644HA L = Rosemount 644HF M = Rosemount 644HW N = Rosemount 644RA P = Rosemount 644SA W = Rosemount 644TA X = Rosemount 644FA Y = Rosemount 644DA

(continued on next page)

			<p>Option 19-20 No impact on Ex i certification</p> <p>Char 25 Any value = Additional marking</p> <p>Char 23-24 Any value = Calibration report</p>
			<p>Option 18 Certificates</p> <p>A = ATEX</p> <p>S = ATEX + SIL 2</p> <p>X = IECEx</p> <p>I or W = IECEx + INMETRO</p> <p>D = ATEX + IECEx</p> <p>Char 22 M = ATEX + IECEx + INMETRO</p> <p>P = ATEX + SIL2 + IECEx</p> <p>V = IECEx + FM</p> <p>T = ATEX + IECEx + INMETRO + FM</p> <p>Any value = Including ATEX and/or IECEx certificate</p>
			<p>Option 6-17 No impact on Ex i certification</p> <p>Char 21 Any value = Mounting option (i.e. with transmitter, with terminal block)</p> <p>Char 19-20 Any value = Process connection</p> <p>Char 18 Any value = Lag, connection or cable extension type</p> <p>Char 17 Any value = Lag or cable extension type</p> <p>Char 16 Any value = Fixing Clamp or Insert Quantity</p> <p>Char 15 Any value = Extension or cable length</p> <p>Char 14 Any value = Inset Nominal length</p> <p>Char 13 Any value = Cable gland</p> <p>Char 12 Any value = Cable Entry</p> <p>Char 11 Any value = Head Type or Wire termination</p> <p>Char 10 Any value = Sheath material</p> <p>Char 9 Any value = Electrical circuit (i.e. single 4 wires)</p>
	For TC		<p>Option 5 No impact on Ex i certification for RTD</p> <p>1 = insulated</p> <p>Char 8 3 = insulated, vibrations-proof</p>
	For RTD		<p>Any value = Sensing element type</p>
			<p>Option 2-4 No impact on Ex i certification</p> <p>Char 7 Any value = Precision element Class</p> <p>Char 6 Any value = TC or RTD Type</p> <p>Char 5 Any value = Insert Ø code</p>
			<p>Option 1 Exécution / Execution</p> <p>J = Intrinsic Safety – ia for TC</p> <p>Char 4 3 = Intrinsic Safety – ia for RTD</p> <p>B = Intrinsic Safety – ib for TC and RTD</p>
			<p>Type du produit / Product Type</p> <p>01 = Inset TC or RTD</p> <p>10 = Metric inset TC or RTD with head</p> <p>20 = Metric inset TC or RTD with head and Form 2 TW</p> <p>21 = Metric inset TC or RTD with head and Form 3 TW</p> <p>22 = Metric inset TC or RTD with head and Form 2 stepped TW</p> <p>40 = Inset TC with head and metal or ceramic TW max 1200°C</p> <p>Char 2-3 41 = Inset TC with head and ceramic TW max 2000°C</p> <p>50 = Imperial inset TC or RTD with head</p> <p>70 = Surface probe TC or RTD with head</p> <p>80 = Inset TC with extension cable</p> <p>81 = Inset RTD with extension cable</p> <p>90 = Bimetallic thermometer with one or two PT100 sensors</p> <p>91 = Gas pressure thermometer with one or two PT100 sensors</p> <p>96 = Multiple insets TC or RTD with one junction box</p>



Annex to Certificate IECEx LCIE 13.0023X issue 04



RATINGS

- ⇒ Models without transmitters:
 U_i : 30 V; I_i : 100 mA; P_i : 0.75W; C_i : 280pF/m; L_i : 15μH/m
- ⇒ Models with transmitters:
According to the certificate of the used transmitters.

ROUTINE TESTS

None.