



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 IBE 20.0002X	Page 1 of 5	<u>Certificate history:</u>
Status:	Current	Issue No: 1	Issue 0 (2020-05-28)
Date of Issue:	2021-03-09		
Applicant:	eltherm Production GmbH Ernst-Heinkel-Straße 6-10 57299 Burbach Germany		
Equipment:	Electronic Temperature Controllers Ex-TC/*-*		
Optional accessory:			
Type of Protection:	Ex eb Ex ib Ex mb Ex tb		
Marking:	Ex eb ib mb IIC T6...T5 Gb Ex ib tb IIIC T85°C...T 100°C Db		

Approved for issue on behalf of the IECEx
Certification Body:

Alexander Henker

Position:

Deputy Head of department Certification Body

Signature:
(for printed version)

Date:
(for printed version)

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2. This certificate is not transferable and remains the property of the issuing body.
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Certificate issued by:

IBExU Institut für Sicherheitstechnik GmbH
Fuchsmühlenweg 7
09599 Freiberg
Germany





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Manufacturer: **eltherm Production GmbH**
Ernst-Heinkel-Straße 6-10
57299 Burbach
Germany

Manufacturing
locations:

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

IEC 60079-18:2014 Explosive atmospheres – Part 18: Equipment protection by encapsulation "m"
Edition:4.0

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

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

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:

DE/IBE/ExTR20.0004/00

DE/IBE/ExTR20.0004/01

DE/TUN/ExTR19.0020/00

Quality Assessment Report:

FR/INE/QAR12.0007/06



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The electronic temperature controllers type Ex-TC/*-* are intended for use for control and limitation of operating equipment in explosion hazardous areas. The types Ex-TC/*-W and Ex-TC/*-10 are for wall mounting and type Ex-TC/*-It is for mounting on pipes.

type	function	intrinsically safe circuits for Pt100	output
Ex-TC/A-*	Controller	1	With Alarm output
Ex-TC/L-*	Limiter	1	With Alarm output
Ex-TC/AL-*	Controller + Limiter	2	With Alarm output
Ex-TC/M-*	Controller + MODBUS	1	With MODBUS

For technical data see Equipment (continued)

SPECIFIC CONDITIONS OF USE: YES as shown below:

- For the circuits "MODBUS" and "supply voltage", an overvoltage category I/II/III according to IEC 60664-1 is permissible.
- The supply circuit has to be fused externally with max. 25 A (40 °C) resp. 20 A (50 °C).
- The Pt100 sensors connected to the intrinsically safe circuits can be assessed as simple electrical apparatus according to section 5. 7 of IEC 60079-11.
- The device can be used in an extended ambient temperature range:

Types ...-W: -45 °C to 40 °C (25 A) and -45 °C to 50 °C (20 A)

Types ...-It: -20 °C to 40 °C (25 A) and -20 °C to 50 °C (20 A)

Types ...-10: -55 °C to 40 °C (25 A) and -50 °C to 50 °C (20 A)

- When using connection cables with a cable cross-section of 3x1.5 mm², T5/T100 °C must be marked and temperature resistant cables according to the manual must be used. For larger cable cross sections, T6/T85 °C applies.
- The selection of the cable glands, blanking plugs and reduction fittings used depends on the ambient temperature range and may vary.
- The installation of the Types ...-It is only possible with mounting post „eltherm Ex-It“
- The use of cable glands, blanking plugs and reducing glands is only allowed combined with sealing gasket / o-ring and rated for protection level „e“ or „t“ with EPL Gb or Db



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Equipment (continued):

Technical Data

enclosure material:	Polyamide, glas filled, UV resistant
ambient temperature Types ...-W	-45 °C to 40 °C / 50 °C (dep. on current)
ambient temperature Types ...-It	-20 °C to 40 °C / 50 °C (dep. on current)
ambient temperature Types ...-10	-55 °C to 40 °C / 50 °C (dep. on current)
IP rating	at least IP65
supply voltage (Connections L, N)	Un = 230 V AC, $\pm 10\%$, 50 Hz Um = 253 V AC The load input has to be fused with 25 A (40 °C) resp. 20 A (50 °C)
Load output (Connections No, Lo)	for connection of heating devices load current max. 25 A (40 °C), resistive load and max. 20 A (50 °C), resistive load
Relay output common alarm, Ex-TC/A-*, Ex-TC/L-*, Ex-TC/M-* (2 Connections A)	1 NO contact: permissible values: 250 V AC, 3 A, 100 VA resp. 24 V DC, 5A, 100 W
Modbus, Ex-TC/M-* (Connections D+, D-, GND)	RS485 RTU, Um= 6 V
Measuring circuits (Connections 1, 2, 3 [TC/A: Controller: TC/L: Limiter] 1, 2, 3 [TC/AL: Controller] 4, 5, 6 [TC/AL: Limiter] 1, 2, 3 [TC/M: Controller])	in type of protection intrinsic Safety Ex ib IIC/IIB resp. Ex ib IIIC Maximum values per circuit: Uo = 2.5 V Io = 36.8 mA Po = 40 mW R = 155 Ω Characteristic line: trapezoidal Only for the connection of Pt100-resistance Thermometers

Ex ib	IIC			IIB, IIIC		
maximum external inductance	44 mH	10 mH	1 mH	100 mH	10 mH	1 mH
maximum external capacitance	1.2 μ F	7.1 μ F	14 μ F	28 μ F	65 μ F	110 μ F



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Addition of type Ex-TC/*-10

Additional types of terminals