



[1] **TYPE EXAMINATION CERTIFICATE - Translation**

[2] for non-electrical products of equipment-groups I and II,
equipment-categories M2 and 2 plus products of equipment-category 3

[3] Type examination certificate number **IBExU25ATEXB008 X** | Issue 0

[4] Product: **Temperature Transmitter**
Type: MACX MCR-RTD-I(-SP)(-C)(-...)
MACX MCR-TC-I(-SP)(-C)(-...)
IOA MCR RTD-I(-C)(-...)
IOA MCR-TC-I(-C)(-...)
IOA MCR-T-I(-C)(-...)

[5] Manufacturer: PHOENIX CONTACT GmbH & Co. KG

[6] Address: Flachsmarkstraße 8
32825 Blomberg
GERMANY

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

[8] IBExU Institut für Sicherheitstechnik GmbH 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 Annex II to Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014.

The examination and test results are recorded in the confidential test report IB-24-3-0124.

[9] Compliance with the essential health and safety requirements has been assured by compliance with:
EN IEC 60079-0:2018 and EN IEC 60079-7:2015/A1:2018
except in respect of those requirements listed at item [18] of the schedule.

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

[11] This type examination certificate relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured or supplied.

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

 **II 3 G Ex ec IIC T4 Gc**

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By order

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- Stamp -

Certificates without signature and stamp are not valid. Certificates may only be duplicated completely and unchanged. In case of dispute, the German text shall prevail.

Freiberg, 2026-01-06

[13]

Schedule

[14]

Certificate number IBExU25ATEXB008 X | Issue 0

[15] **Description of product**

The temperature transmitters MACX MCR-[RTD,TC]-I(-SP)(-C)(-...) and IOA MCR-[RTD,TC,T]-I(-C)(-...) are galvanically isolated temperature transmitters designed for use with a standard output signal of 4...20 mA. While the MACX MCR-[RTD,TC]-I(-SP)(-C)(-...) type temperature transmitters are intended for mounting on 35 mm DIN rails, the IOA MCR-[RTD,TC,T]-I(-C)(-...) temperature transmitters are designed for connection via a VIP-BASE element.

The temperature signal may be provided either by means of resistance elements or thermocouple elements.

The temperature Transmitters are supplied with a galvanic isolation between input and output circuit and between input circuit and supply, which is useful for voltages for type MACX MCR-[RTD,TC]-I(-SP)(-C)(-...) up to 265 V_{eff} and for type IOA MCR-[RTD,TC,T]-I(-C)(-...) up to 150 V_{eff}.

Special auxiliaries and accessories may be connected to the modules.

Technical data:

		MACX RTD/TC	IOA RTD/TC	IOA T
ambient temperature range	T _{amb}	-40 °C ... +70 °C		
rated insulation voltage		265 V _{eff} / 375 V _{peak}	150 V _{eff} / 212 V _{peak}	150 V _{eff} / 212 V _{peak}
Terminal 1.1-1.2 / P2+, P2-:				
nominal voltage	U _n	24 V DC (19,2 ... 30 V DC)		
Terminal 3.1-3.2 / Chn+, Chn-:				
in zone 2 / EPL Gc	U _{max}	30 V DC		
Terminal 4.1-4.2 / nA, nC; Terminal 5.1-5.2 / nB, nD (Ex ec):				
Input signal		±1000mV (mV/TO) 2000mV (RTD/RTD in Poti-Modus)		

If using the device in altitudes between 2000 m and 5000 m above sea level the advices for derating from the instructions have to be taken into account.

Derating T_{amb} and U_{isolation} according to IEC 61131-2:2017 and IEC 61010-1:2010 as elevation above sea level increases for type **MACX**:

Altitude:	T _{amb} :	U _{isolation} :
≤ 2000 m	-40 °C ... +70 °C	375 V _{peak} / 300 V _{eff}
> 2000 m ... ≤ 3000 m	-40 °C ... +63 °C	190 V
> 3000 m ... ≤ 4000 m	-40 °C ... +56 °C	60 V
> 4000 m ... ≤ 5000 m	-40 °C ... +49 °C	60 V

Derating T_{amb}, U_n and U_{isolation} according to IEC 61131-2:2017 and IEC 61010-1:2010 as elevation above sea level increases for type **IOA**:

Altitude:	T _{amb} :	U _{isolation} :
≤ 2000 m	-40 °C ... +70 °C	212 V _{peak} / 150 V _{eff}
> 2000 m ... ≤ 3000 m	-40 °C ... +63 °C	212 V _{peak} / 150 V _{eff}
> 3000 m ... ≤ 4000 m	-40 °C ... +56 °C	212 V _{peak} / 150 V _{eff}
> 4000 m ... ≤ 5000 m	-40 °C ... +49 °C	89 V _{peak} / 63 V _{eff}

[16] Test report

The test results are recorded in the confidential test report IB-24-3-0124 of 2025-12-12.
The test documents are part of the test report and they are listed there.

Summary of the test results

The temperature Transmitter mentioned under [4] fulfil the requirements of explosion protection for electrical equipment of Category 3 G in type of protection increased safety "ec".

[17] Specific conditions of use

- When the temperature signal conditioners type MACX... and type IOA... are installed in Zone 2 applying type of protection "ec", the pollution level shall be limited to pollution degree 2 or better as defined in IEC 60664-1, and the modules must be mounted in a suitable enclosure which complies with the requirements of EN IEC 60079-0 and provides a degree of protection not less than IP54. Furthermore, the clearance and creepage distances requirements of EN IEC 60079-7 must be observed.
- The permitted ambient temperature range is -40 °C...+70 °C.
- Detailed information for the intrinsically safe parameter are mentioned in the installation notes.
- The µUSB programming interface must not be connected, disconnected or used in potentially explosive atmospheres.
- Connecting and disconnecting of non-intrinsically safe circuits in Zone 2 is only permitted in a de-energized state or when no potentially explosive atmosphere is present.

[18] Essential health and safety requirements

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item [9], the following are considered relevant to this product, and conformity is demonstrated in the test report:

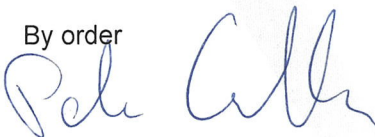
Altitude correction factors according to IEC 61131-2:2017 and IEC 61010-1:2010

[19] Drawings and Documents

The documents are listed in the test report.

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Freiberg, 2026-01-06