



# 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](http://www.iecex.com)

Certificate No.: **IECEx PTB 11.0058** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 1 [Issue 0 \(2012-02-24\)](#)  
Date of Issue: 2022-03-25  
Applicant: **BARTEC GmbH**  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
Germany  
Equipment: **Remote I/O-Module ANTARES 4TI type 17-6143-1003/00\*\*, 17-6143-1003/01\*\***  
Optional accessory:  
Type of Protection: **Equipment for explosive atmospheres - General Requirements, Intrinsic Safety, Electrical apparatus for use in the presence of combustible dust - General Requirements, Intrinsic Safety**  
Marking: Ex ib [ia Ga] IIC T4 Gb resp.  
Ex ib [ia IIC Ga] [ia Ga] [ia IIIC Da] IIB T4 Gb  
and / or  
[Ex ia Da] IIIC resp.  
[Ex ia Da] [Ex ia IIC Ga] [Ex ia IIB Ga] IIIC

Approved for issue on behalf of the IECEx  
Certification Body:

**Dr.-Ing. Martin Thedens**

Position:

**Head of Department "Explosion Protection in Sensor Technology  
and Instrumentation"**

Signature:  
(for printed version)

Date:  
(for printed version)

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Certificate issued by:

**Physikalisch-Technische Bundesanstalt (PTB)**  
Bundesallee 100  
38116 Braunschweig  
Germany





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Max-Eyth-Straße 16  
97980 Bad Mergentheim  
**Germany**

Manufacturing  
locations: **BARTEC GmbH**  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
**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 Report:

[DE/PTB/ExTR11.0065/02](#)

Quality Assessment Report:

[DE/TUN/QAR06.0017/13](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

The Remote I/O-Module ANTARES 4TI type 17-6143-1003/\*\*\*\* is intended for use as electrical equipment in locations with gas hazardous atmosphere or as associated apparatus for locations with dust hazardous atmosphere located and operating outside the dust hazardous atmosphere.

As associated apparatus, the Remote I/O-Module ANTARES 4TI type 17-6143-1003/\*\*\*\* is intended to provide the power supply and data acquisition for intrinsically safe Pt100 or Pt100 -temperature sensors in 2-, 3- or 4- line circuits or potentiometers in 3- line circuits with a maximum level of protection 'ia'.

The Remote I/O-Module ANATRES 4TI type 17-6143-1003/00\*\* is designed for installation with DIN Rails made of metal used as connection with the potential Equalization location.

In the operation of the Remote I/O-Modules, the Electronics Unit (Remote I/O-Module without enclosure base) type 17-6143-1003/01\*\* and the enclosure base can be connected to each other or be separated from each other.

For further details see annex.

**SPECIFIC CONDITIONS OF USE: NO**



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

Update to latest version of standards indicated as associated with this ExTR.

The changes concern the application of the above mentioned standards and the internal construction.

The indications of the possible Co/Lo- connections at the supply- and output circuits have been extended within the electrical data.

Modification of the marking

## **Annex:**

[Annex of IEC Ex Certificate.pdf](#)



Applicant: BARTEC GmbH  
Max-Eyth-Strasse 16  
97980 Bad Mergentheim/ Germany

Electrical Apparatus: **Remote I/O-Module ANTARES 4TI type 17-6143-1003/\*\*\*\***

Description:

The Remote I/O-Module ANTARES 4TI type 17-6143-1003/\*\*\*\* is intended for use as electrical equipment in locations with gas hazardous atmosphere or as associated apparatus for locations with dust hazardous atmosphere located and operating outside the dust hazardous atmosphere.

As associated apparatus, the Remote I/O-Module ANTARES 4TI type 17-6143-1003/\*\*\*\* is intended to provide the power supply and data acquisition for intrinsically safe Pt100 or Pt100 -temperature sensors in 2-, 3- or 4- line circuits or potentiometers in 3- line circuits with a maximum level of protection 'ia'.

The Remote I/O-Module ANATRES 4TI type 17-6143-1003/00\*\* is designed for installation with DIN Rails made of metal used as connection with the potential Equalization location.

In the operation of the Remote I/O-Modules, the Electronics Unit (Remote I/O-Module without enclosure base) type 17-6143-1003/01\*\* and the enclosure base can be connected to each other or be separated from each other.

Type code

Type no.	17	-	6	1	4	3	-	1	*	*	*	/	*	*	*	*
Key no.	A		B	C	D	E		F	G	H	I		J	K	L	M

Key	Variations:	Description
A - F	17-6143-1	Explosion-proof Remote I/O-Module ANTARES
G - I	003	4TI (4-channel, temperature, input)
J, K	00	Protection degree at least IP30, Enclosure base with integrated functional earth contact, standard rail mounting
	01	Protection degree IP00 (without enclosure base)
L, M	Number and/or letter for characteristics without influence on the explosion protection	

Permissible ambient temperature range Ta: -20°C to +60 °C



## Electrical Data

Supply- and signal circuit (10+2 pole plug connectors) In type of protection Intrinsic Safety Ex ib IIC  
Only for connection to the corresponding 10+2 pole plug connectors in the Rail Control Unit (RCU) ANTARES or the Remote I/O-System ANTARES or the Remote I/O-System ANTARES type 17-5184-\*\*\*\* each with accessory parts (IECEx PTB 11.0051X) and other Remote I/O-Modules ANTARES with a separate certificates.

Equipotential bonding Through the mounting rail connected to the local equipotential bonding conductor

Supply- and output circuits (terminal points) In type of protection Intrinsic Safety Ex ia IIC/IIB/IIIC  
Maximum values per circuit:  
1P+ and 1P-; 1S+ and 1S-;  
2P+ and 2P-; 2S+ and 2S-;  
3P+ and 3P-; 3S+ and 3S-;  
4P+ and 4P-; 4S+ and 4S-)

$$\begin{array}{lll} U_o = 6.5 \text{ V} & I_o = 25.9 \text{ mA} & P_o = 42.1 \text{ mW} \\ C_i = 16.6 \text{ nF} & L_i - \text{negligibly low} & \text{linear characteristic} \\ \text{Ex ia IIC:} & C_o = 24.98 \text{ } \mu\text{F}; & L_o = 53 \text{ mH} \\ \text{Ex ia IIB/IIIC:} & C_o = 569.98 \text{ } \mu\text{F}; & L_o = 212 \text{ mH} \end{array}$$

When connected to a device:

Ex ia IIC:

$$C_o = 24.98 \text{ } \mu\text{F} \text{ and } L_o = 53 \text{ mH} \text{ at either } C_i' < 249 \text{ nF} \text{ or } L_i' < 530 \text{ } \mu\text{H};$$
$$C_o = 600 \text{ nF} \text{ and } L_o = 26.5 \text{ mH} \text{ at } C_i' \geq 249 \text{ nF} \text{ and } L_i' \geq 530 \text{ } \mu\text{H}$$

Ex ia IIB/IIIC:

$$C_o = 569.98 \text{ } \mu\text{F} \text{ and } L_o = 212 \text{ mH} \text{ at either } C_i' < 5.69 \text{ } \mu\text{F} \text{ or } L_i' < 2.12 \text{ mH};$$
$$C_o = 1 \text{ } \mu\text{F} \text{ and } L_o = 106 \text{ mH} \text{ at } C_i' \geq 5.69 \text{ } \mu\text{F} \text{ and } L_i' \geq 2.12 \text{ mH}$$

$C_i'$  – the total internal capacitance of the external circuit (excluding the cable)

$L_i'$  – the total internal inductance of the external circuit (excluding the cable)

(The internal capacitance  $C_i$  is taken into account for the  $C_o$ -indication)

Nominal ratings: DC 5 V, 4 × 2.5 mA, up to about 4 × 12 mW

The supply and signal circuit is safely galvanically isolated from the supply and output circuits.