



# IECEx Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: IECEx PTB 11.0051X issue No.:0 Certificate history:.....

Status: **Current**

Date of Issue: **2012-02-24** Page 1 of 3

Applicant: **BARTEC GmbH**  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
Germany

Electrical Apparatus: **Rail Control Unit (RCU) ANTARES, Remote I/O-System ANTARES and Remote I/O-System ANTARES type series 17-5184-\*\*\*\*/\*\*\*\***  
Optional accessory:

Type of Protection: **Equipment for explosive atmospheres - General Requirements , Flameproof Enclosure, Increased Safety, Intrinsic Safety, Electrical apparatus for use in the presence of combustible dust - General Requirements, Intrinsic Safety, Equipment dust ignition protection by enclosure**

Marking: Rail Control Unit (RCU) ANTARES Ex d e [ib] IIC T4 Gb  
Remote I/O-System ANTARES Ex d e [ia IIC/IIB Ga] IIC T4 Gb  
Remote I/O-System ANTARES type 17-5184-\*\*\*\*/\*\*\*\* Ex tb [ia Da] IIIC T100 °C Db or  
Ex tD [iaDa] A21 IP6X T100°C

Approved for issue on behalf of the IECEx  
Certification Body:

Dr.-Ing. Ulrich Johannsmeyer

Position:

Department Head "Intrinsic Safety and Safety of Systems"

Signature:  
(for printed version)

\_\_\_\_\_  
\_\_\_\_\_

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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





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Manufacturer: **BARTEC GmbH**  
Max-Eyth-Straße 16  
97980 Bad Mergentheim  
**Germany**

Manufacturing location(s):

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 electrical apparatus 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:

<b>IEC 60079-0 : 2007-10</b> Edition: 5	Explosive atmospheres - Part 0: Equipment - General requirements
<b>IEC 60079-1 : 2007-04</b> Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-11 : 2006</b> Edition: 5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'
<b>IEC 60079-7 : 2006-07</b> Edition: 4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
<b>IEC 61241-0 : 2004</b> Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
<b>IEC 61241-1 : 2004</b> Edition: 1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"
<b>IEC 61241-11 : 2005</b> Edition: 1	Electrical apparatus for use in the presence of combustible dusts - Part 11: Protection by intrinsic safety 'iD'

*This Certificate **does not** indicate compliance with electrical 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/ExTR11.0057/00](#)

Quality Assessment Report:

[DE/TUN/QAR06.0017/03](#)



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## Schedule

### EQUIPMENT:

*Equipment and systems covered by this certificate are as follows:*

The Rail Control Unit (RCU) ANTARES, the Remote I/O System ANTARES and the Remote I/O System ANTARES type 17-5184-\*\*\*\*/\*\*\*\* are mounted stationary in the explosion hazardous area.

The RCU ANTARES serves as a power supply and CPU and also as an interface for communication for the Remote I/O Systems.

The Remote I/O Systems ANTARES specified above serve as de-central modular input and output units for use in explosion hazardous areas and they are built up with the RCU ANTARES and various Remote I/O Modules ANTARES type 17-6143-1\*\*\*\*/\*\*\*\* with separate certificates and accessories.

Further details see annex.

### CONDITIONS OF CERTIFICATION: YES as shown below:

Further details see annex.



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

Electrical Apparatus: Rail Control Unit (RCU) ANTARES,  
Remote I/O System ANTARES and  
Remote I/O System ANTARES type 17-5184-\*\*\*\*/\*\*\*\*

### Description

The Rail Control Unit (RCU) ANTARES, the Remote I/O System ANTARES and the Remote I/O System ANTARES type 17-5184-\*\*\*\*/\*\*\*\* are mounted stationary in the explosion hazardous area.

The RCU ANTARES serves as a power supply and CPU and also as an interface for communication for the Remote I/O Systems referred to in the above, in which it is operated singly or at most in a 1+1 redundant configuration in explosion hazardous areas. The Connection Module type 17-5164-9\*\*\*/\* and the Head Module type 17-5174-1\*0\*/\*\*\*\* may be interconnected and disconnected from each other under voltage.

The Remote I/O Systems ANTARES specified in the above serve as de-central modular input and output units for use in explosion hazardous areas and they are built up with the RCU ANTARES (together with a metal DIN mounting rail and certified rail-mounted earth conductor terminal and various Remote I/O Modules ANTARES type 17-6143-1\*\*\*/\* with separate certificate and accessory: SD-card type 17-28BE-F006/000\*, bus beginning module, order no. 05-0078-0084, bus end module, order no. 05-0078-0085, rail beginning module, order no. 05-0041-0320, rail end module, order no. 05-0041-0319, extension module, order no. 05-0078-0123, Ext bus cable: UNITRONIC® BUS CAN, 2 x 2 x 0.34 (max. 20 m, ready-to-use), Ext power cable 1 and 2: ÖLFLEX® Classic 100, 8 x 1.5 (max. 20 m, ready-to-use) and ÖLFLEX® Classic 100, 4 x 1.5 (max. 20 m, ready-to-use), shortening set, order no. 05-0091-0164, strain relief set, order no. 05-0005-0067, end plug, order no. 05-0078-0087, and connector bridge, order no. 05-0078-0086.

Marking according to Directive 94/9/EC:

Rail Control Unit (RCU) ANTARES	Ex d e [ib] IIC T4 Gb
Remote I/O System ANTARES	Ex d e [ia IIC/IIB Ga] IIC T4 Gb
Remote I/O System ANTARES	Ex tb [ia Da] IIIC T100°C Db or
type 17-5184-****/****	Ex tD [ia Da] A21 IP6X T100°C

The permissible ambient temperature range is -20 °C to +60 °C.



### Electrical Data

Power supply circuit Terminal P,+ and N,-	DC 24 V - 15 %/ + 25 % 100 W $U_m = 30$ V DC
Signal circuits	
Terminals RX1+, RX1-, TX1+, TX1- resp. RX2+, RX2-, TX2+, TX2- resp. B, A, BX, AX	max. 5 V resp. 2 V $U_m = 60$ V DC/AC
USB port (industrial quality) Service interface	max. 5 V $U_m = 60$ V DC/AC
System bus circuits 10+2-pole connectors J110+J112/ J111+J113	In type of protection Intrinsic Safety Ex ib IIC. For connecting the accessory, an additional RCU ANTARES (maximum permissible 1+1 redundancy) or the accompanying Remote I/O Modules with separate certificate is used.

### Special conditions

- The Rail Control Unit (RCU) ANTARES is to be mounted vertically (without impairment of the natural convection) and with cable glands pointing downwards.
- The Rail Control Unit (RCU) ANTARES and the Remote I/O System ANTARES must be connected to the local equipotential bonding conductor.
- The various Remote I/O Modules ANTARES type 17-6143-1\*\*\*/\*\* with separate certificate and for an ambient temperature of +60 °C are to be used either with or without spacer module, order no. 05-0078-0106, in the Remote I/O Systems ANTARES, whereby the spacer module must be on both sides of the respective Remote I/O Module ANTARES; unless the Remote I/O Module is placed at the beginning or the end of the mounting rail, in which case a spacer module must be inserted on the right of the I/O Module if it is placed at the beginning of the mounting rail and on the left if it is placed at the end of the mounting rail. If there is not enough mounting rail space, it is permissible to dispense with the use of the spacer module if the Remote I/O System concerned is marked exclusively for the ambient temperature range  $-20\text{ °C} \leq T_a \leq +50\text{ °C}$ .
- The Remote I/O System ANTARES must also be equipped with a protective device / enclosure, which rules out the risk of mechanical danger for Group II in accordance with 26.4.2, Tab. 12, EN 60079-0 for this system.
- The Ext bus cable and the Ext power cables (of both Remote I/O Systems ANTARES) shall not be longer than 20 m each. The cables must be fixed in place and protected effectively against damage and installed together in a bundle. They are included in the ANTARES ExtSet, order no. 05-0090-001\*, together with installation instructions, rail beginning module, rail end module, extension module, shortening set, strain relief set and certified rail-mounted earth conductor terminal.



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- f. The earthing plate in the Connection Module type 17-5164-9\*2\*/\*\*\*\* of the RCU ANTARES (with cable entries made of metal) must be connected to the local equipotential bonding conductor.
  - g. Two RCUs ANTARES (for a max. of 1+1-redundancy) must always be installed on a common metal DIN mounting rail.
  - h. The cores of the cables in the Ex-e termination compartment of the RCU ANTARES must be located below the connection terminals. All wires must be connected to the terminals and the free cores must be suitably and permanently fixed in place.
  - i. Once the locking-bracket has been swivelled open, 15 seconds' delay must be observed before the RCU ANTARES Head Module may be removed from the Connection Module.
  - j. The RCU ANTARES Ex-e termination compartment which includes a USB port (service interface for loading configuration data into the CPU) may not be opened during operation in an explosive gas atmosphere.
  - k. The electrical connections in the Remote I/O System ANTARES which consist of 10+2-pole plug connectors (including 10-pole plug connectors in the beginning and end modules) or consist of terminal points in an extension module may not be joined or separated under voltage if there is a possibility of an explosive gas atmosphere.
  - l. The RCU ANTARES and accordingly the Remote I/O Systems ANTARES are classified as over voltage category II in accordance with IEC-60664-1 and therefore intended for connection to a fixed installation.
  - m. In areas with an explosive dust atmosphere, the Remote I/O System ANTARES type 17-5184-\*\*\*\*/\*\*\*\* with the Ex tb [ia Da] IIIC T100°C Db or Ex tD [ia Da] A21 IP6X T100°C marking shall be operated only in enclosures with separate certificate, whereby enclosures which have separate certificate with the Ex tb ... or Ex tD ... marking for explosive dust hazardous atmospheres can be used. The Remote I/O System ANTARES type 17-5184-\*\*\*\*/\*\*\*\* must be connected to a local equipotential bonding conductor.