Physikalisch-Technische Bundesanstalt

Braunschweig and Berlin

(1) # EC TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems intended for use in hazardous (potentially explosive) atmospheres - **Directive 94/9/EC**

(3) EC Type Examination Certificate number

PTB 11 ATEX 2009 X

(4) Equipment: Rail Control Unit (RCU) ANTARES,
Remote I/O System ANTARES and
Remote I/O System ANTARES Type 17-5184-****/****

(5) Manufacturer: BARTEC GmbH

(6) Address: Max-Eyth-Strasse 16, 97980 Bad Mergentheim, Germany

(7) This equipment and any permissible variation of it are specified in the schedule to this certificate and the documents referred to there.

(8) The Physikalisch-Technische Bundesanstalt, notified body no. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, specified in Annex II to the Directive.

The examination and test results are recorded in the confidential assessment and test report PTB Ex 11-29255.

(9) Compliance with the Essential Health and Safety Requirements has been assured by conformance to:

EN 60079-0:2009, EN 60079-1:2007, EN 60079-7:2007, EN 60079-11:2007,
EN 60079-31:2009, EN 61241-0:2006, EN 61241-1:2004, EN 61241-11:2006

(10) If the sign "X" is placed after the certificate number, this indicates that the equipment is subject to special conditions for safe use; which are specified in the schedule to this certificate.

(11) This EC-type-examination certificate relates only to the design, examination and tests of the specified equipment in accordance with Directive 94/9/EC. Further requirements in this directive apply to the manufacturing process and supply of this equipment. These requirements are not covered by this certificate.

(12) The marking on the equipment must include the following:

see schedule

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, November 8, 2011

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Page 1/4

(13) # S C H E D U L E

(14) ## EC TYPE EXAMINATION CERTIFICATE PTB 11 ATEX 2009 X

(15) Description of equipment

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	**Ⓔx II 2 G Ex d e [ib] IIC T4 Gb**
Remote I/O-System ANTARES	**Ⓔx II 2 (1) G Ex d e [ia IIC/IIB Ga] IIC T4 Gb**
Remote I/O-System ANTARES Typ 17-5184-****/****	**Ⓔx II 2 (1) D Ex tb [ia Da] IIIC T100°C Db or**
	Ⓔx II 2 (1) D 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.

(16) Assessment and test report PTB Ex 11-29255

(17) Special conditions for safe use

a. The Rail Control Unit (RCU) ANTARES must be mounted vertically (without impairment the natural convection) and with cable glands pointing downwards.

b. The Rail Control Unit (RCU) ANTARES and the Remote I/O System ANTARES must be connected to the local equipotential bonding conductor.

c. 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 °C ≤ Ta ≤ +50 °C.

d. 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.

e. 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.

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) shall 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 shall 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 under overvoltage 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 Ⓔx II 2 (1) D Ex tb [ia Da] IIIC T100°C Db or Ⓔx II 2 (1) D Ex tD [ia Da] A21 IP6X T100°C marking may 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 atmospheres can be used. The Remote I/O System ANTARES type 17-5184-****/**** must be connected to a local equipotential bonding conductor.

(18) Essential health and safety requirements

Met by compliance with the standards mentioned above.

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. U. Johannsmeyer
Direktor und Professor

Braunschweig, November 8, 2011