



(1) EC-TYPE-EXAMINATION CERTIFICATE (Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - Directive 94/9/EC



(3) EC-type-examination Certificate Number:

PTB 14 ATEX 2009

(4) Equipment: Remote I/O-Module ANTARES 8TC, type 17-6143-1014/00**

(5) Manufacturer: BARTEC GmbH

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

(7) This equipment and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(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, given in Annex II to the Directive.


The examination and test results are recorded in the confidential test report PTB Ex 14-24061.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:
EN 60079-0:2012 and EN 60079-11:2012

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

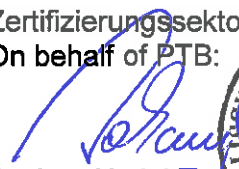
(11) This EC-type-examination Certificate relates only to the design, examination and tests of the specified equipment in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment. These are not covered by this certificate.

(12) The marking of the equipment shall include the following:

 II 2 (1) G Ex ib [Ia Ga] IIC/IIB T4 Gb resp. II (1) D [Ex ia Da] IIIC or
 II 2 (1) G Ex ib [Ia IIC/IIB Ga] IIC T4 Gb resp. II (1) D [Ex ia Da] IIIC

Zertifizierungssektor Explosionschutz
On behalf of PTB:

Braunschweig, September 22, 2014


Dr.-Ing. U. Johann
Direktor und Professor



sheet 1/4

(13)

SCHEDULE

(14)

EC-TYPE-EXAMINATION CERTIFICATE PTB 14 ATEX 2009

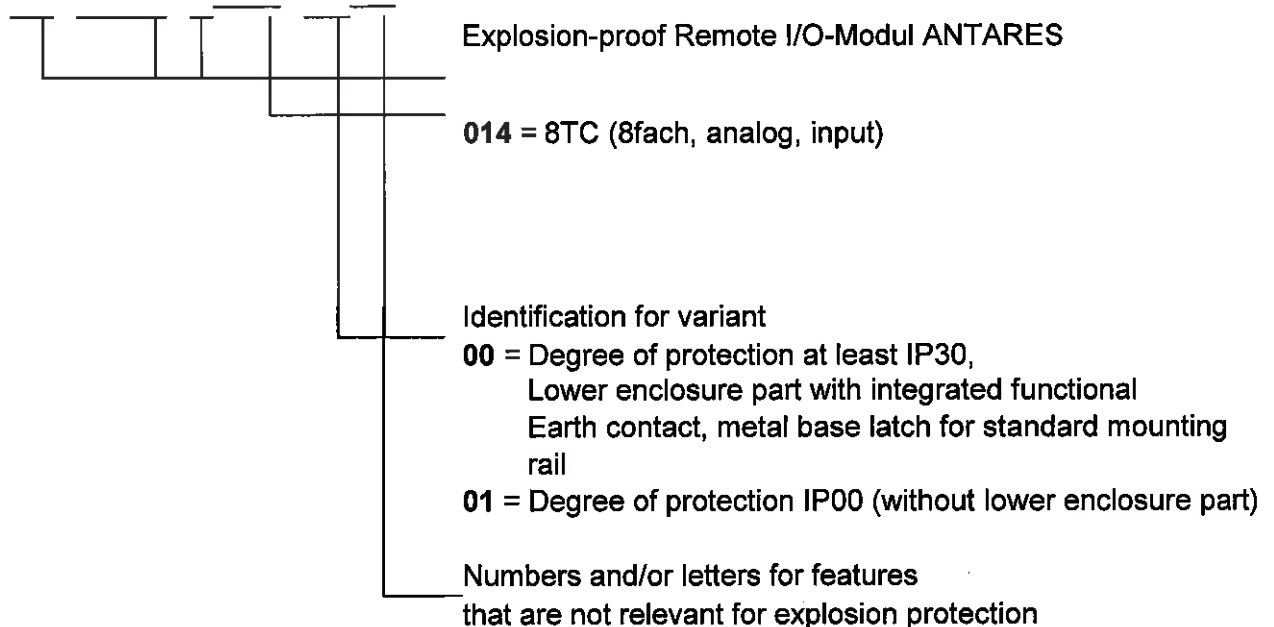
(15) Description of equipment

The remote I/O module ANTARES 8TC type 17-6143-1014/00** is used for connecting thermocouples and Signals in the mV range. It is operated as category-2 equipment in a gas hazardous area or as an associated apparatus for a dust hazardous area outside the dust hazardous area.

The Remote I/O Module is designed for attachment onto a metal DIN mounting rail and through this it is electrostatically connected to the local equipotential bonding. The electronic unit (Remote I/O Module without lower enclosure part) type 17-6143-1014/01** and the lower enclosure part can be either separated from each other or connected to each other during the operation of the Remote I/O Module.

Type key

17 - 6143 - 1*** / ***



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

sheet 2/4

Electrical data

Supply and signal circuit
(10+2 pole plug connectors)

Type of protection Intrinsic Safety Ex ib IIC
Only for connection to the corresponding 10+2 pole plug connectors in 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 (PTB 11 ATEX 2009 X) and other Remote I/O Modules ANTARES with a separate certificate

Equipotential bonding

Through the mounting rail connected to the local equipotential bonding conductor

Signal circuits
(terminal points 1+ and 1-; 2+ and 2-; 3+ and 3-; 4+ and 4-; 5+ and 5-; 6+ and 6-; 7+ and 7-; 8+ and 8-)

Type of protection Intrinsic Safety Ex ia IIC/ IIB for connection to active, passive, grounded or not grounded simple apparatus (e. g. thermocouples)

Maximum values of any combinations of terminals:

$$U_o = 1,4 \text{ V}$$

$$\Sigma I_o = 10,5 \text{ mA}$$

$$P_o = 3,7 \text{ mW (linear characteristic)}$$

$$\Sigma U_i = 6,5 \text{ V}$$

effective internal capacitance and inductance are negligible low.

Ex ia IIC: $C_o = 0,74 \mu\text{F}$, $L_o = 100 \text{ mH}$
or $C_o = 0,84 \mu\text{F}$, $L_o = 50 \text{ mH}$
or $C_o = 0,96 \mu\text{F}$, $L_o = 20 \text{ mH}$
or $C_o = 1,9 \mu\text{F}$, $L_o = 0,5 \text{ mH}$
or $C_o = 8,8 \mu\text{F}$, $L_o = 2 \mu\text{H}$

Ex ia IIB: $C_o = 3,9 \mu\text{F}$, $L_o = 100 \text{ mH}$
or $C_o = 4,3 \mu\text{F}$, $L_o = 50 \text{ mH}$
or $C_o = 4,9 \mu\text{F}$, $L_o = 20 \text{ mH}$
or $C_o = 11 \mu\text{F}$, $L_o = 0,5 \text{ mH}$
or $C_o = 115 \mu\text{F}$, $L_o = 2 \mu\text{H}$

Or for connection to an active, passive, grounded or not grounded certified intrinsically safe circuit with the following maximum values of any combinations of terminals:

$$\Sigma U_i = 6,5 \text{ V}$$

$$\Sigma I_i = 48,5 \text{ mA}$$

Ex ia IIC:

$C_o = 0.53 \mu\text{F}$, $L_o = 14 \text{ mH}$
or $C_o = 0.68 \mu\text{F}$, $L_o = 10 \text{ mH}$
or $C_o = 0.92 \mu\text{F}$, $L_o = 5 \text{ mH}$
or $C_o = 1.2 \mu\text{F}$, $L_o = 2 \text{ mH}$
or $C_o = 2.3 \mu\text{F}$, $L_o = 200 \mu\text{H}$
or $C_o = 6.3 \mu\text{F}$, $L_o = 10 \mu\text{H}$
or $C_o = 8.6 \mu\text{F}$, $L_o = 5 \mu\text{H}$
or $C_o = 8.8 \mu\text{F}$, $L_o = 2 \mu\text{H}$

Ex ia IIB:

$C_o = 2.2 \mu\text{F}$, $L_o = 58 \text{ mH}$
or $C_o = 2.5 \mu\text{F}$, $L_o = 50 \text{ mH}$
or $C_o = 3.9 \mu\text{F}$, $L_o = 20 \text{ mH}$
or $C_o = 4.7 \mu\text{F}$, $L_o = 10 \text{ mH}$
or $C_o = 5.7 \mu\text{F}$, $L_o = 5 \text{ mH}$
or $C_o = 7.1 \mu\text{F}$, $L_o = 2 \text{ mH}$
or $C_o = 8.5 \mu\text{F}$, $L_o = 1 \text{ mH}$
or $C_o = 10 \mu\text{F}$, $L_o = 0.5 \text{ mH}$
or $C_o = 22 \mu\text{F}$, $L_o = 0.05 \text{ mH}$
or $C_o = 80 \mu\text{F}$, $L_o = 5 \mu\text{H}$
or $C_o = 115 \mu\text{F}$, $L_o = 2 \mu\text{H}$

All signal circuits are galvanically connected with each other and safely isolated from ground and the supply and signal circuits.

(16) Test report PTB Ex 14-24061

(17) Special conditions for safe use

None

(18) Essential health and safety requirements

Met by compliance with the standards mentioned above.

Zertifizierungssektor Explosionsschutz
On behalf of PTB:

Braunschweig, June 22, 2014


Dr.-Ing. U. Johannsmeyer
Direktor und Professor

