



(1) **EU-TYPE-EXAMINATION CERTIFICATE**
(Translation)

(2) Equipment or Protective Systems Intended for Use in
Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 11 ATEX 2018

Issue: 1

(4) Product: Remote I/O-Modules ANTARES 4AIO type 17-6143-1006/**** and
ANTARES 4AIOH type 17-6143-1007/****

(5) Manufacturer: BARTEC GmbH

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

(7) This product and any acceptable variation thereto is 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 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 22-28014.

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

EN IEC 60079-0:2018+AC:2020 EN 60079-11:2012

(10) If the sign "X" 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 EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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

 **Refer schedule**

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, May 17, 2022

On behalf of PTB:


Dr.-Ing. T. Horn
Regierungsdirektor



(13)

SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 11 ATEX 2018, Issue: 1**

(15) Description of Product

The Remote I/O-Modules ANTARES 4AIO type 17-6143-1006/**** and ANTARES 4AIOH type 17-6143-1007/**** are 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-Modules ANTARES 4AIO type 17-6143-1006/**** and ANTARES 4AIOH type 17-6143-1007/**** are intended to provide the power supply and data acquisition for intrinsically safe 2-, 3- or 4-wire-transmitters or alternatively analog actuators and control elements with a maximum level of protection 'ia'.

The Remote I/O-Modules ANATRES 4AIO type 17-6143-1006/00** and ANTARES 4AIOH type 17-6143-1007/00** are 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 Electronic Units (Remote I/O-Module without enclosure base) type 17-6143-1006/01** or type 17-6143-1007/01** and the enclosure base can be connected to each other or be separated from each other.

Marking according to Directive

2014/34/EU:

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

and / or

	II (1) D	[Ex ia Da] IIIC bzw.
	II (1) GD	[Ex ia Da] [Ex ia IIC Ga] [Ex ia IIB Ga] IIIC

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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	006	4AIO (4-channel, analog, input/output)
	007	4AIOH (4-channel, analog, input/output, HART)
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

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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 (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

Supply- and output circuits
(terminal points
1P+ and 1P-; 1S+ and 1S-;
2P+ and 2P-; 2S+ and 2S-;
3P+ and 3P-; 3S+ and 3S-;
4P+ and 4P-; 4S+ and 4S-)

In type of protection Intrinsic Safety Ex ia IIC/IIB/IIIC

Maximum values per circuit:

**Remote I/O-Module ANTARES 4AIO
type 17-6143-1006/****:**

$U_o = 27.5 \text{ V}$ $I_o = 87 \text{ mA}$ $P_o = 598 \text{ mW}$

$C_i = 11 \text{ nF}$ L_i – negligibly low linear characteristic

Ex ia IIC: $C_o = 75 \text{ nF}$; $L_o = 4.69 \text{ mH}$

Ex ia IIB/IIIC: $C_o = 661 \text{ nF}$; $L_o = 18.79 \text{ mH}$

When connected to a device:

Ex ia IIC:

$C_o = 75 \text{ nF}$ and $L_o = 4.69 \text{ mH}$ at either $C_i' < 0.75 \text{ nF}$ or $L_i' < 46.9 \text{ } \mu\text{H}$;

$C_o = 37.5 \text{ nF}$ and $L_o = 2.34 \text{ mH}$ at $C_i' \geq 0.75 \text{ nF}$ and $L_i' \geq 46.9 \text{ } \mu\text{H}$

Ex ia IIB/IIIC:

$C_o = 661 \text{ nF}$ and $L_o = 18.79 \text{ mH}$ at either $C_i' < 6.61 \text{ nF}$ or $L_i' < 187.9 \text{ } \mu\text{H}$;

$C_o = 330.5 \text{ nF}$ and $L_o = 9.39 \text{ mH}$ at $C_i' \geq 6.61 \text{ nF}$ and $L_i' \geq 187.9 \text{ } \mu\text{H}$

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Remote I/O-Module ANTARES 4AIOH type 17-6143-1007/****:

$U_o = 27.5 \text{ V}$	$I_o = 92 \text{ mA}$	$P_o = 633 \text{ mW}$
$C_i = 11 \text{ nF}$	L_i – negligibly low	linear characteristic
Ex ia IIC:	$C_o = 75 \text{ nF};$	$L_o = 4.2 \text{ mH}$
Ex ia IIB/IIIC:	$C_o = 661 \text{ nF};$	$L_o = 16.8 \text{ mH}$

When connected to a device:

Ex ia IIC:

$C_o = 75 \text{ nF}$ and $L_o = 4.2 \text{ mH}$ at either $C_i' < 0.75 \text{ nF}$ or $L_i' < 42 \mu\text{H}$;
 $C_o = 37.5 \text{ nF}$ and $L_o = 2.1 \text{ mH}$ at $C_i' \geq 0.75 \text{ nF}$ and $L_i' \geq 42 \mu\text{H}$

Ex ia IIB/IIIC:

$C_o = 661 \text{ nF}$ and $L_o = 16.8 \text{ mH}$ at either $C_i' < 6.61 \text{ nF}$ or $L_i' < 168 \mu\text{H}$;
 $C_o = 330.5 \text{ nF}$ and $L_o = 8.4 \text{ mH}$ at $C_i' \geq 6.61 \text{ nF}$ and $L_i' \geq 168 \mu\text{H}$

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 24 V, 4 × 20 mA, up to about 4 × 0.5 W

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

Modifications to the EC-Type-Examination Certificate:

Update to aforementioned standard versions EN IEC 60079-0 und EN 60079-11.

The changes concern the application of the aforementioned 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.

(16) Test Report PTB Ex 22-28014

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(17) Specific conditions of use

none

(18) Essential health and safety requirements


Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz

Braunschweig, May 17, 2022

On behalf of PTB



Dr.-Ing. T. Horn
Regierungsdirektor