



The ANTARES 4AIO Remote I/O Module is operated and supplied with power by means of the Rail Control Unit (RCU) ANTARES. This module allows the direct linking of 4 intrinsically safe transmitters with 2, 3 or 4 conductors or the output of 0 to 20 mA or 4 to 20 mA signals. The hot-swap capability allows the electronic unit to be replaced without disconnecting from voltage even in an explosive atmosphere. The internal and galvanically isolated bus connection is established by simply plugging the modules to the RCU. A bus rail is not necessary. Open circuit/short circuit monitoring can be programmed for each channel. The bus status messages and individual messages per channel are displayed by the LEDs. This also enables diagnostics on the module. The Software ANTARES Designer allows parameters to be set for the signal range, channel type (in or out) and a 4-stage input filter for each channel. See the system description for installation instructions.

Explosion protection

Marking ATEX	Ex II 2(1) G Ex ib [ja IIC/IIB Ga] IIC T4 Gb Ex II (1) D [Ex ia Da] IIIC
Certification	PTB 11 ATEX 2018
Marking IECEx	Ex ib [ja IIC/IIB Ga] IIC T4 Gb [Ex ia Da] IIIC
Certification	IECEx PTB 11.0061
Marking CSA	Class I, Zone 1
Certification	CSA 2567944
Other approvals and certificates, see www.bartec.de	
Ambient temperature range	-20 °C to +60 °C

Safety data per transmission Channel

Module	U_o/U_i	I_o/I_i	P_o	C_i	L_i
4AIO	27.5 V	87 mA	598 mW	6 nF	negligible
Ex ia IIC	$C_o \text{ max.}$	$L_o \text{ min.}$		$C_o \text{ min.}$	$L_o \text{ max.}$
4AIO	79 nF	0.2 mH	or	37 nF	1.7 mH
Ex ia IIB	$C_o \text{ max.}$	$L_o \text{ min.}$		$C_o \text{ min.}$	$L_o \text{ max.}$
4AIO	666 nF	0.1 mH	or	264 nF	16 mH

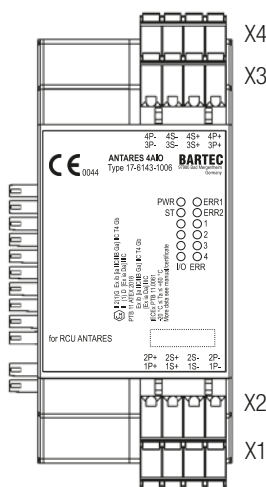
Technical data

Enclosure material	PA
Protection class (EN 60529)	Enclosure: IP 30 in the ANTARES system construction
Electrical connections	plug-in tension spring-loaded clamps, up to 2.5 mm ² optional coding and numbering
Mounting rail	TH 35-15 DIN EN 60715 (steel, galvanised)
Device and terminal designation	see accessories
Dimensions (W x H x D)	45 mm x 110 mm x 114.5 mm
Weight	approx. 390 g
Storage and transport temperature	-25 °C to +85 °C
Humidity	5 to 95 %, non-condensing
Degree of contamination (IEN 60664-1)	2
Vibration (EN 60068-2-6)	2 g/7 mm; 5 Hz to 200 Hz in all 3 axes
Shock (EN 60068-2-27)	15 g, 11 ms, ± 3 shocks per direction

Electrical data

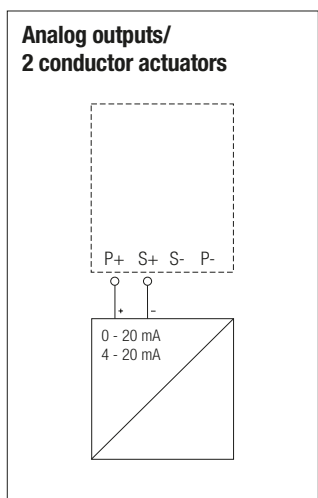
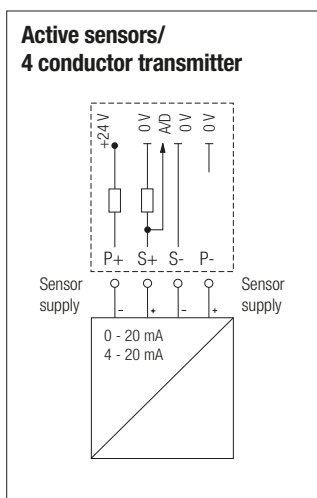
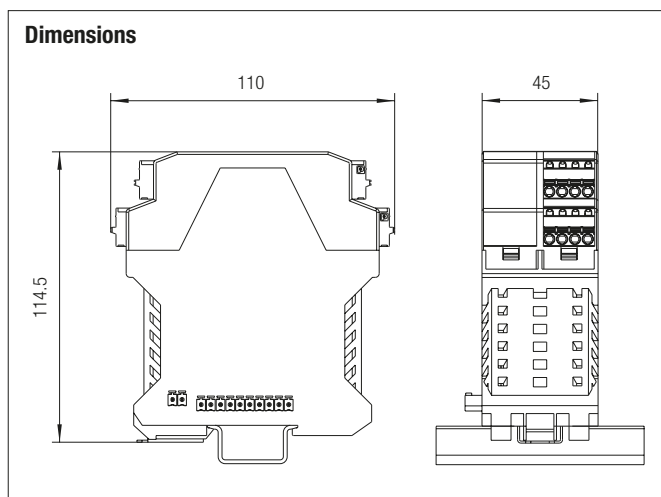
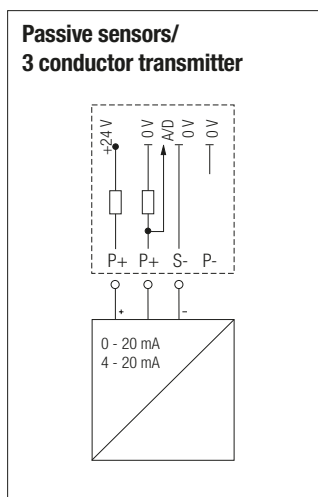
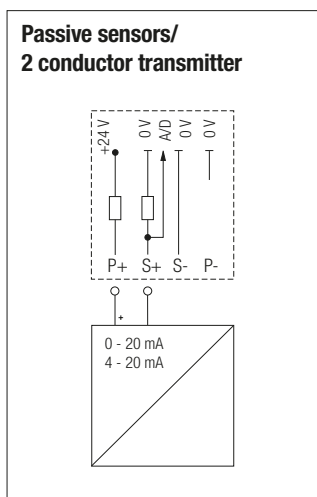
Inputs/outputs	
Number of Channels	4 inputs or outputs Ex i (short-circuit-proof) Inputs active/passive
Galvanic Isolation	between inputs or outputs and internal bus
Open circuit/short circuit	settable for each Channel with Software
Input channel	
Signal range	0 to 20 mA or 4 to 20 mA
Signal	min. 0 mA, max. 21 mA
Short-circuit current	max. 21.3 mA
Input resistance	$R_i = 10 \Omega$
Resolution	16 bit (15 bit + prefix)
Tolerance	± 0.1 % of the measuring range at +25 °C
Influence of the ambient temperature	± 0.01 %/K of the measuring range
Minimum voltage at 20 mA	16 V
Output channel	
Signal range	0 to 20 mA or 4 to 20 mA
Signal	min. 0 mA, max. 21 mA
Short-circuit current	max. 21.3 mA
Load	max. 750 Ω
Resolution	14 bit
Tolerance	± 0.1 % of the measuring range at +25 °C
Influence of the ambient temperature	± 0.01 %/K of the measuring range
Displays	LEDs in enclosure front: Status: PWR, ST, ERR1, ERR2 Inputs/Outputs: 2 LEDs per Channel 1 x LED yellow, Channel setting 1 x LED red, Channel error

Wiring diagram/terminal assignment



Terminal block	Terminal	Description	
X4	4P-	Supply -	Channel 4
	4S-	Signal -	Channel 4
	4S+	Signal +	Channel 4
	4P+	Supply +	Channel 4
X3	3P-	Supply -	Channel 3
	3S-	Signal -	Channel 3
	3S+	Signal +	Channel 3
X2	3P+	Supply +	Channel 3
	2P+	Supply +	Channel 2
	2P+	Signal +	Channel 2
X1	2S-	Signal -	Channel 2
	2P-	Supply -	Channel 2
	1P+	Supply +	Channel 1
	1S+	Signal +	Channel 1
	1S-	Signal -	Channel 1
	1P-	Supply -	Channel 1

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LED	Colour	Meaning
PWR	GN	Power OK, goes out in the event of undervoltage
ST	GN	Data exchange active
ERR1	RT	Communication error
ERR2	RT	Error in the module
ON 1-4	GE	Differentiation input/output module
ERR 1-4	RT	Channel error line break/short circuit

Ordering information
 ANTARES Remote I/O Module 4AIO **17-6143-1006/0000**
 Technical data subject to change without notice.