

or



Compact IO module for Ex Zone 1/21 with Profinet or Modbus TCP/IP.
The module include busnode, isolating amplifier and **32 intrinsically safe** analog and digital IO channels on smallest space.

BEx1 module can be installed directly in Zone 1/21 and connects sensors and actuators from Zone 0/20.

Feature

- Fully potted → extreme robust
- IO variations 16DI 8DO 8DO(AIO)
 - 16xDI Namur / 16xDO
 - 16xDI Namur / 8xDO / 8xAIO
 - 16xDI Namur / 8xDO / 8xSwitching Mode
- None configuration on module required
- Separate power supply for sensor and actuator
- Comprehensive diagnostics for each channel
 - open load detection
 - pre-fault detection
 - short circuit detection
- Galvanic separation between channel and system
- Internal temperature monitoring
- Operating hour counter

BEx1 Explosion protection

EPS 19 ATEX 1 219 X

EPS 22 UKEX 1 045 X



II 2(1) G Ex eb mb [ia Ga] IIC T4 Gb

II 2(1) D Ex tb [ia Da] IIIC T110°C Db

IECEX EPS 19.0093X

Ex eb mb [ia Ga] IIC T4 Gb

Ex tb [ia Da] IIIC T110°C Db

Power supply

Operation voltage U_A/U_S	DC 18...30V
Current module and sensor supply I_S	DC 450 mA
Current actuator supply I_A	DC 300 mA
Power dissipation	max. 15 W
Reverse polarity protection	Yes
LED Voltage > 18V	Green
LED Undervoltage	Red

Fieldbus data

Addressing Profinet	via DCP
Addressing Modbus TCP/IP	DHCP or fix
Transfer Rate	10/100 MBit/s
Delay in signal change	< 10ms
LED Ethernet status LINK	Green
LED Ethernet status ACT	Yellow
LED Modul status	Green / Red
LED digital output on	Yellow
LED error detection	Red

Ambient conditions

Operating temperature	-40°C ... +70°C
Storage temperature	-40°C ... +80°C
Enclosure type (EN 60529)	IP66 / IP67

Mechanical data

Dimensions (LxWxH)	214 x 206 x 115 mm
Mounting holes	∅ 6,5
Mounting space	200 mm
Mounting position	any position
Weight	approx. 5400 g
Housing material	Aluminium (electroplated)
Housing marking	laser engraving
Vibration (EN 60068)	20g
Shock (EN 60068)	50g
Cable glands (stainless steel)	M20x1,5

IO variations (X1-X8)

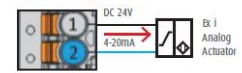
16DI / 16DO 16DI / 8DO / 8AIO 16xDI / 8xDO / 8xSwitching Mode Type : 14310*01	
1	DO / AO / AI / Switch Mode(+)
2	GND / Switch Mode(-)
3	DI
4	GND
5	DI
6	GND
7	DO
8	GND

Multifunction of Pin 1

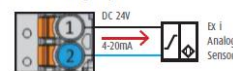
DO - Digital output



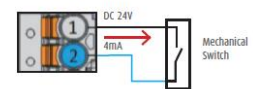
AO - Analog output



AI - Analog input



DI - Switch mode



IO function


DI Namur	8,2V (I < 1,2mA = off) (I > 2,1mA = on)
DO (can also be used as power supply)	24V (I _{max} = 25mA)
AI and AO	24V 4..20mA (0..25mA)
Resolution AI und AO	16 Bit
Measurement deviation (at +25°C)	± 0,1%
Ambient temperature influence	± 0,01%/K
AO to DO	24V (I _{max} = 25mA)
Switching Mode	24V (I _{max} = 4mA)

Commercial data

Zone 1/21	
BEx1 16DI 8DO 8DO(AIO)	
Profinet Order No.	14310101
Modbus Order No.	14310301
Country of origin	DE
Packaging unit	1
Customs tariff number	85176200

Further information see certificate and manual.

Electrical connection

 Earthing / Equipotential bonding
 via M4 screw and eyelet
 Cable cross-section min. 4,0 mm²

CAGE CLAMP® connection technology


X1-X8 (pluggable) Inputs / Outputs (Ex i)
 Cable cross-section max. 1,5 mm²

X9 Power supply (Ex e)
 Cable cross-section max. 2,5 mm²

X10 Bus (Ex e)
 Cable cross-section max. 2,5 mm²

Approval data

Max. U_m X9 / X10 = DC 30 V

Terminals	Parameter																														
<u>Terminal block X1 to X8</u>	(Output parameters of each clamp, clamps are not allowed to be combined)																														
Clamp _{26V}	$U_0 = 26$ V d.c. $I_0 = 82$ mA $P_0 = 533$ mW <table border="1" style="width: 100%; text-align: center;"> <tr><th colspan="5">IIC</th></tr> <tr> <td>L_0</td> <td>3 mH</td> <td>1 mH</td> <td>0,5 mH</td> <td>0 mH</td> </tr> <tr> <td>C_0</td> <td>42 nF</td> <td>62 nF</td> <td>78 nF</td> <td>99 nF</td> </tr> <tr><th colspan="5">Group IIB / III</th></tr> <tr> <td>L_0</td> <td>20 mH</td> <td>2 mH</td> <td>0,5 mH</td> <td>0 mH</td> </tr> <tr> <td>C_0</td> <td>350 nF</td> <td>350 nF</td> <td>490 nF</td> <td>770 nF</td> </tr> </table>	IIC					L_0	3 mH	1 mH	0,5 mH	0 mH	C_0	42 nF	62 nF	78 nF	99 nF	Group IIB / III					L_0	20 mH	2 mH	0,5 mH	0 mH	C_0	350 nF	350 nF	490 nF	770 nF
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