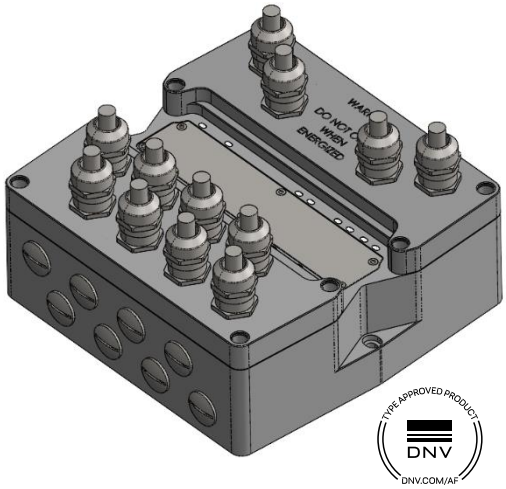
BEx1 IP67Ex i IO module for Zone 1/21



or

Compact IO module for Ex Zone 1/21 with Profinet or Modbus TCP/IP in one device.
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
  - prefault detection
  - short circuit detection
- Galvanic separation between channel and system
- Internal temperature monitoring
- Operating hour counter

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

Intertek 5025332
Class I, Division 2, Groups A, B, C, D
Class I, Zone 1, AEx eb mb [ia Ga] IIC T4 Gb
Class II, Division 2, Groups F, G
Zone 21, AEx 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

(Order No. -00) Dimensions (LxWxH)	214x214x125 mm
(Order No. -01) Dimensions (LxWxH)	286x214x90 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

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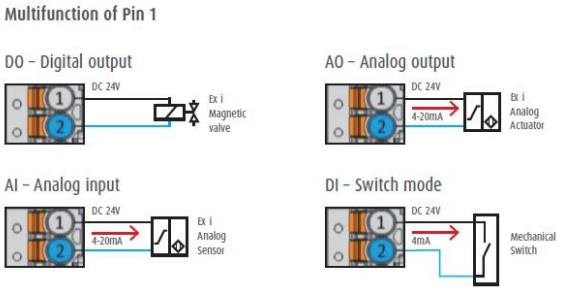
IO variations (X1-X8)

	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



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)

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

Commercial data

Zone 1/21
BEx1 IP67 Ex i 16DI 8DO 8DO(AIO)
Profinet / Modbus TCP

Order No. 14310101-00

Order No. 14310101-01

Country of origin	DE
Packaging unit	1
Customs tariff number	85176200

Further information see certificate and manual.

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Approval data

Max. U_m X9 / X10 = DC 30 V

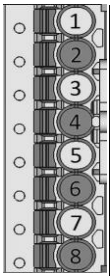
Terminals	Parameter
Terminal block X1 to X8	(Output parameters of each clamp, clamps are not allowed to be combined)
$Clamp_{26V}$	U_0 = 26 V d.c. I_0 = 82 mA P_0 = 533 mW

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

$Clamp_{9,6V}$ ..... U_0 = 9,6 V d.c.
I_0 = 31 mA
P_0 = 75 mW

IIC				
L_0	49 mH	10 mH	1 mH	0 mH
C_0	310 nF	640 nF	1.1 µF	3.6 µF
Group IIB / III				
L_0	100 mH	10 mH	1 mH	0 mH
C_0	2 µF	3.6 µF	6.1 µF	26 µF

$Clamp_{GND}$ ..... galvanically separated from input GND



	Type : **14310*01**
Clamp 1	U_0 = 26 V d.c.
Clamp 2	GND
Clamp 3	*U_0 = 9,6 V d.c.*
Clamp 4	GND
Clamp 5	*U_0 = 9,6 V d.c.*
Clamp 6	GND
Clamp 7	U_0 = 26 V d.c.
Clamp 8	GND

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