Tippkemper®

MATRIX elektronik ag

ISO 9001:2000 / ATEX

ASSURIX Intrinsically Safe Power Supply NEX-108-24VDC

Operating Manual and Control Drawing No. NEX108DC_e

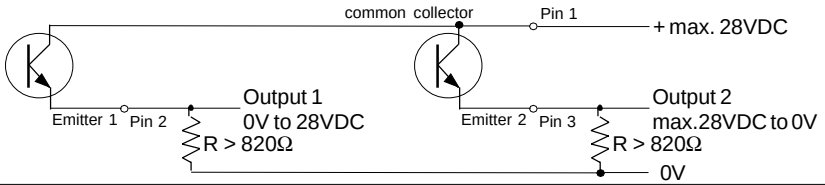
CE 0158

Ex II (1) G [EEx ia] IIC
II (1) D [EEx ia] IIC

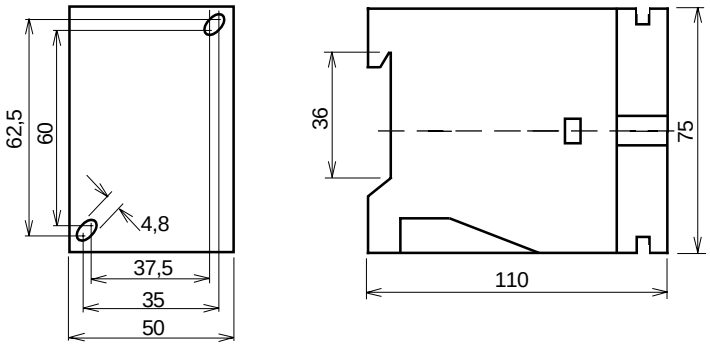
- Power supply and process control equipment for sensors in hazardous Ex zones 0, 1, 2, 20, 21, 22
- Type of Ex protection: Intrinsic safe [EEx ia] IIC
- ATEX Certification: PTB 03 ATEX 2206
- Also applicable for intrinsic safe 3-wire and NAMUR sensors of the series Assurix.
- With relay or photocoupler output
- Also available with adjustable delay function.

Type / Technical Data	NEX-108-24VDC-R	NEX-108-24VDC-E	NEX-108-24VDC-RZ	NEX-108-24VDC-EZ
Type	intrinsically safe process control equipment, mount out of Ex locations			
Supply voltage	24VDC (20VDC to 28VDC)			
Current consumption	250mA			
Connection possibilities (only certificated sensors)	1x Proximity switch or 1x Light barrier or 1x NAMUR-Sensor			
Output voltage, nominal	8.2 VDC, intrinsically safe			
Supply voltage	Um = 30VDC			
Maximum output voltage	Uo = 8.8VDC			
Short circuit current	Io = 118mA			
Usable output current	48mA			
Maximum output power	Po = 488mW			
Max. capacitive load	Co = 460nF			
Max. inductive load	Lo = 2mH			
Switching frequency	5 Hz	1kHz	5Hz	100Hz
Time delay	--	--	0.1 to 10sec.	0 to 10sec.
Drop-in and drop-out delay			adjustable	adjustable
Output	Relay	Photocoupler	Relay	Photocoupler
Maximum AC load	250VAC/4A/100VA cos φ >= 0,7	-- --	250VAC/4A/100VA cos φ >= 0,7	-- --
Maximum DC load	30VDC/4A 100W	28VDC/50mA 1W	30VDC/4A 100W	28VDC/50mA 1W
Housing	Synthetic (Polycarbonate, Polystyrole)			
System of protection	IP 20 at EN 60529			
Ambient temperature range	0°C < TA < +60°C			
Mounting	On DIN-rail at EN 50022 or with 2 screws			
Status indications	Switching status: LED red + LED green / Output overload: LED red			
Options	- Higher switching frequencies on demand			

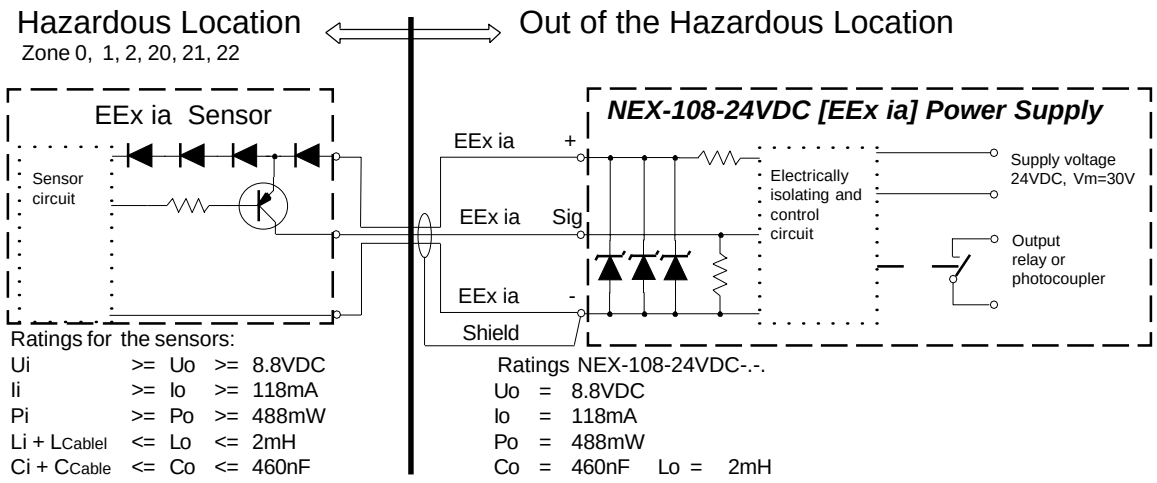
Connections to the photocoupler outputs:
Output 2 inversely to Output 1
(Only for devices with photocoupler output)



Dimensions:



Control Drawing for Hazardous Areas:



Ratings for the sensors:

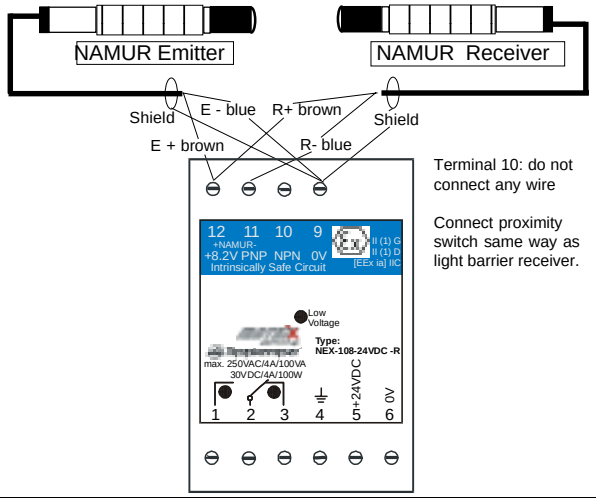
Ui	>=	Uo	>=	8.8VDC
Ii	>=	Io	>=	118mA
Pi	>=	Po	>=	488mW
Li + L_{Cable}	<=	Lo	<=	2mH
Ci + C_{Cable}	<=	Co	<=	460nF

Ratings NEX-108-24VDC-.-.

Uo = 8.8VDC
Io = 118mA
Po = 488mW
Co = 460nF Lo = 2mH

Connections:

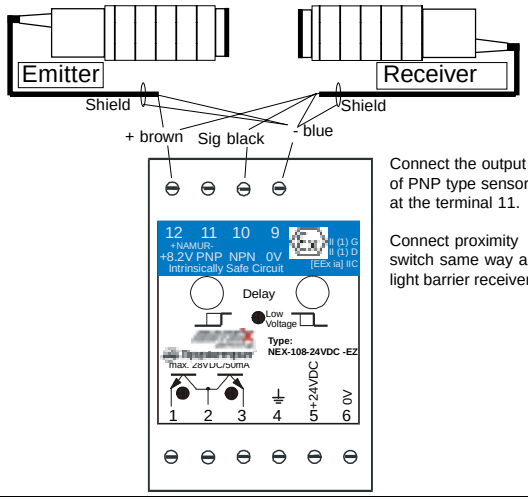
NAMUR sensors at NEX-108-24VDC-R



Terminal 10: do not connect any wire

Connect proximity switch same way as light barrier receiver.

3-wire sensors at NEX-108-24VDC-EZ



Connect the output of PNP type sensors at the terminal 11.

Connect proximity switch same way as light barrier receiver.

ATEX related designations:

CE 0102
Device type
Certification number:
TA: 0° < TA < 60°
Date of construction: Numeral 4 to 7 of the serial number

Manufacturer with address
⟨Ex⟩ II (1) G, II (1) D, [EEx ia] IIC
PTB 03 ATEX 2206
Electrical data according to the chart

Operating Manual / EC - Declaration of Conformity:

Mounting prescriptions

Ex Protection

It is necessary to take into consideration the valid rules, regulations, directives and guidelines referred to Ex protection. The intrinsically safe power supply must be installed out of the explosion risk area. The connection of the intrinsically safe sensors must be realized out of the explosion risk area. For the evaluation of the additional connection cables, the maximum rated capacity and inductivity must be observed. Do not exceed the maximum rated supply voltage of Um=30VDC.

Function

The power supply NEX-108-.. will provide the power and signalling function for intrinsically safe sensors at protection level EEx ia usable in Ex zones 0, 1, 2 , 20, 21, 22. When the PNP or NPN input is activated or I-NAMUR > 2mA, the red LED will light up and the output will be activated. When the inputs are passive or I-NAMUR < 1mA, the LED shows green and the output will be turned out. For the "Z"-versions, the drop-in and dropout time delays can be adjusted by 2 potentiometers. For high switching frequencies use the types with photocoupler outputs. If the intrinsically safe output will be overloaded, the LED "Low Voltage" lights up.

Maintenance:

The power supply does not require any special maintenance. Equipment must only be repaired or serviced by the manufacturer.

General Notes

We reserve the right to modify our equipment. Our equipment is designed such way, that it has the least possible adverse effect on the environment. It neither emit or contain any damaging or siliconized substances and use a minimum of energy and resources. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

Safety Informations

When installing and operating with the sensor, it is necessary to take into consideration the relevant international and other national regulations. ATEX 118a, ElexV, TRbF, TRD, UVV, EX-RL,BetrSichV (ATEX 137), single directive 1999/92/EG.

Standards met:

- EN 50014:1997+A1+A2, EN 50020:2002, EN 50284, EN 50281-1-1; EN 61000-6-1/-2, EN 61000-6-3/4
- Ex protection: 94/9/EG (ATEX 100a)
- Machine directive: 98/37/EG
- Low voltage directive: 73/23/EWG
- EMC 89/336/EWG,92/31/EWG,93/68EWG

Approvals and Declaration of conformity:

PTB 03 ATEX 2206

The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Safety System ISO 9001 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

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