

ASSURIX Shunt-diode safety barrier MZB12-12V-20MA

Operating Manual and Control Drawing No. MZB12-12V-20MA

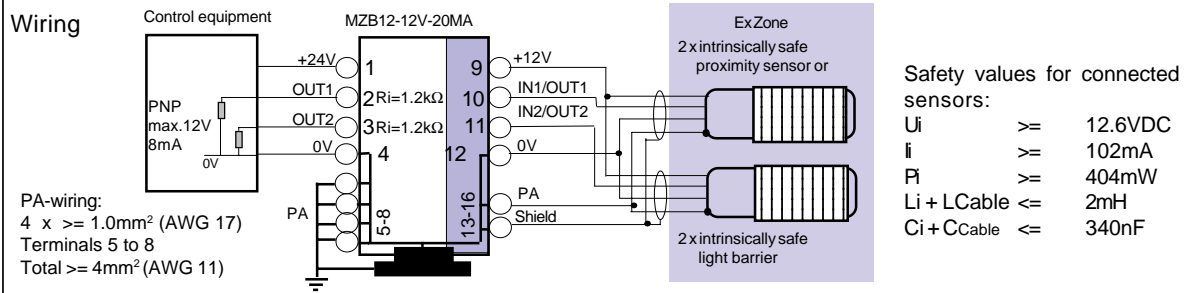


II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC

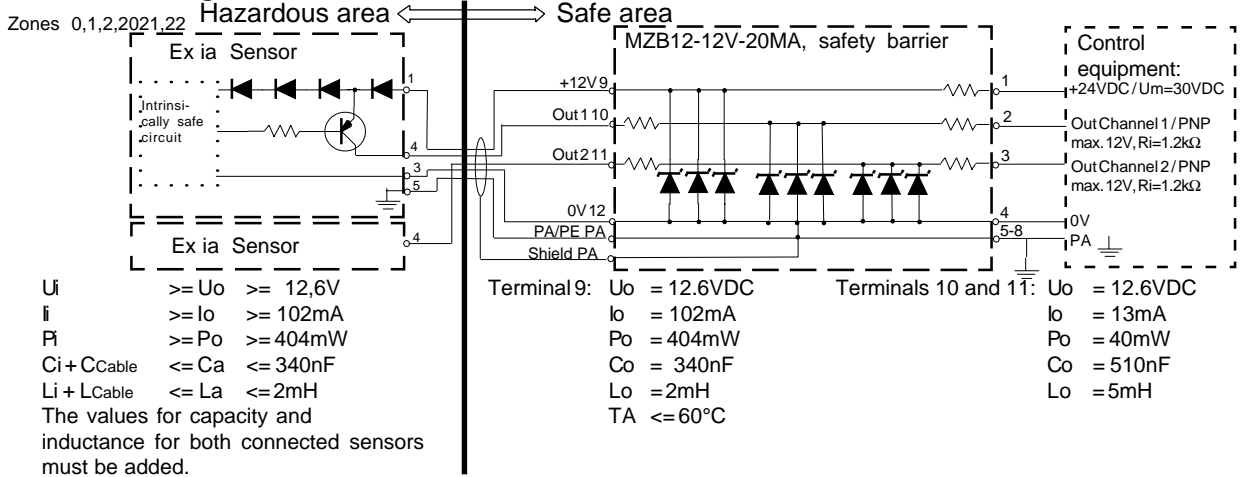
- 12V, intrinsically safe barrier for connection at intrinsically safe sensors in Ex zones 0, 1, 2, 20, 21, 22
- Type of Ex protection: Intrinsically safe II (1) G [Ex ia Ga] IIC
II (1) D [Ex ia Da] IIIC
- ATEX certification: PTB 05 ATEX 2068
- 2 channels in the same package

Technical Data	Type	MZB12-12V-20MA
Type		Intrinsically safe shunt-diode barrier, mount out of hazardous locations
Supply voltage, not intrinsically safe		24VDC +/- 10%
Maximum safe-area voltage Um		30VDC
Maximum current consumption		130mA
Maximum intrinsically safe output voltage, Kl. 9		U _o = 12.6V
Maximum intrinsically safe output current, Kl. 9		I _o = 102mA
Maximum intrinsically safe output power, Kl. 9		P _o = 404mW
Usable intrinsically safe output current		22mA
Maximum permissible external inductance at Kl. 9		C _o = 340nF
Maximum permissible external capacity at Kl. 9		L _o = 2mH
Intrinsically safe inputs, Kl. 10 and 11		2, R _i = 1200R
Intrinsically safe voltage at the inputs, Kl. 10 and 11		U _o = 12.6V
Intrinsically safe current at the inputs, Kl. 10 and 11		I _o = 13mA
Intrinsically safe power at the inputs, Kl. 10 and 11		P _o = 40mW
Maximum permissible external capacity at Kl. 10/11		C _o = 510nF
Maximum permissible external inductance at Kl. 10/11		L _o = 5mH
Inputs, not intrinsically safe		2, PNP max. 12V, 8mA
Switching frequency		5kHz
Housing		Enclosure material: Polycarbonate PC-GF
Enclosure rating at EN 60529		IP 20
Continuous working temperature range T _{amb}		0°C < T _{amb} < +60°C
Mounting		Simple snap on DIN-rail, at EN 60715
Connection		Terminal screws, protected at VBG 4
Elementary diagram / Equipotential bonding PA		
The equipotential bonding must be realized by connection of the terminals 5 to 8 to PA. Isolated wires 4 x >= 1.0mm ² must be used.		
Dimensions		

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Control Drawing for Hazardous Areas, MZB12-12V-20MA:



ATEX RELATED MARKINGS:

CE 0158

Device: MZB12-12V-20MA

Certification No.:

$T_a: 0^\circ C < T_{amb} < +60^\circ C$

Date of production (Year/Week):

Manufacturer with address: Matrix Elektronik AG

II (1) G [Ex ia Ga] IIC, II (1) D, [Ex ia Da] IIIC

PTB 05 ATEX 2068

Electrical data according to the chart

Numbers 5 to 8 of the serial number

Operating Manual, EU - Declaration of Conformity:

Mounting prescriptions:

Installation prescriptions for Ex hazardous locations:

WARNING:

"To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing". It is necessary to take into consideration the valid international and national rules and regulations (IEC 60079-14). Do not exceed the maximum ratings. The safety barrier must be installed out of the explosion risk area. The connection for the intrinsically safe circuit is marked in blue and must be connected outside of hazardous locations. The safety values of the connected sensors must be observed. The maximum allowed capacity and inductance of the connected cable must be observed. The maximum input voltage $U_m=30VDC$ must not be exceeded. The equipotential bonding must be realized by wiring the terminals No PA5 to PA8 to PE/PA. It must be used 4 wires $\geq 1mm^2$. The total cross section must be $\geq 4mm^2$.

Application, Function

The shunt-diode safety barrier MZB12-12V-20MA limit the power (energy) that can be delivered from a safe area into a hazardous area and is used to interface control room equipment with devices in hazardous locations. The maximum 2 connected sensors must also be "intrinsically safe", applicable for Ex zones 0, 1, 2, 20, 21, 22, related to the her certification. The connected intrinsically safe photoelectric proximity switches or light barriers must have a PNP- or push-pull outputs. The outputs are suitable to connect at various electronic control equipment. They can not drive electromechanical relay.

Maintenance

The shunt-diode safety barrier MZB is maintenance-free. It can not be repaired.

General Notes

We reserve the right to modify our equipment. The shunt-diode safety barrier MZB12-12V-20MA 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, standards

The mounting, wiring, application and maintenance must be realized in accordance with this operating manual and the other relevant rules and prescriptions. It is necessary to take into consideration the relevant international and other national regulations. Under others are this: IEC 60079-14, Directive 1999/92/EC. The shunt-diode safety barrier MZB12-12V-20MA corresponds to the following standards:
 EN 60079-0:2012, EN 60079-11:2012,
 EN 60079-26:2007,
 EN 61000-6-2:2001, EN 61000-6-3:2001
 ATEX directive: 2014/34/EU
 Machine directive: 2006/42/EC
 RoHS directive: 2011/65/EC
 EMC directive: 2014/30/EU

EU-Declaration of Conformity

EC-Type-Examination Certificate: PTB 05 ATEX 2068
 ATEX certification of quality management type production of Ex devices according to the ATEX directive 2014/34/EU. Certification No: BVS 15 ATEX ZQS / E118. The conformity of the devices with the EC/UL standards and directives and the EC/UL-type examination certificate and the observation of the Quality Safety Management system ISO 9001:2008 with the ATEX module "Production", declares:

Hans Bracher, Matrix Elektronik AG

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