Tippkemper®

ISO 9001:2015 / ATEX

MATRIX elektronik ag

Original operating manual: Glass Fibre Optics

CE 1258 **MSM-****-03-L-BO-OP1 / MSM-****-03-L-BO-OP2 / MSM-****-03-L-BO**

IECEx BVS 14.0108X

- Yellow brass protection sheath, for light barrier measurement method
- MSM-****-03-L-BO-OP1: Authorized for Ex zones 0, 1, 2, 20, 21, 22
- MSM-****-03-L-BO-OP2: Authorized for Ex zones 1, 2, 21, 22
- MSM-****-03-L-BO: Applicable only in Non-Hazardous Locations

Ex op is IIC T4 Ga / Ex op is IIIC T135°C Da
or
Ex op is IIB T4 Gb / Ex op is IIIB T135°C Db

II 1G IIC T4 Ga / II 1D IIIC T135°C Da
or
II 2G IIB T4 Gb / II 2D IIIB T135°C Db

Technical data / Type	MSM-****-03-L-BO-OP1	MSM-****-03-L-BO-OP2	MSM-****-03-L-BO
Standard length and designation	****=Length in mm, 0500, 1000, 2000, 3000 (Overall length)		
Ex Protection, Gas	II 1G IIC T4 Ga	II 2G IIB T4 Gb	none
Ex Protection, Dust	II 1D IIIC T135°C Da	II 2D IIIB T135°C Db	none
For use in Ex Zones	0, 1, 2, 20, 21, 22	1, 2, 21, 22	--
Requirement at connected sensors	Ex op is Ga/Da	Ex op is Gb/Db	none
Maximum optical input power	<=15mW	<=35mW	not limited
Maximum potential radiant intensity	<= 5mW/mm²	<= 5mW/mm²	not limited
Active fibre optic diameter	2.5mm		
Active cross-sectional area	4.9mm²		
Transmission rate, average	50-70%, at 870nm		
Optical aperture	appr. 65°, at 870nm		
Individual fibre diameter	50um		
Minimum bending radius	30mm (Single bend)		
Operating temperature range T_{amb}	0°C < T_{amb} < +120°C		-20°C <T_{amb}< +120°C
Enclosure rating, according to EN 60529	IP68		
Material, adaption probe tip	Special steel, 1.4305		
Material, probe tip	Special steel, 1.4305		
Material, protection sheath	Brass, chromium plated		
Accessories, included	2 x Shrink-down plastic tubing	--	
Options	- MSM-****-03-L-BO-OP1/OP2-S238: With Ex cable gland M20x1.5, brass, type: AGRO EX1000.20.080		

ATEX/IECEx RELATED MARKINGS

CE 1258 T_{amb}= -20°C < T_{amb} < +120°C

Manufacturer with address

Date of production: Numerals 5 to 8 of the serial number (Year/Week)

Date of production: Numerals 5 to 8 of the serial number (Year/Week)

Type: MSM-****-03-L-BO-OP1

Type: MSM-****-03-L-BO-OP2

II 1G IIC T4 Ga, II 1D IIIC T135°C Da

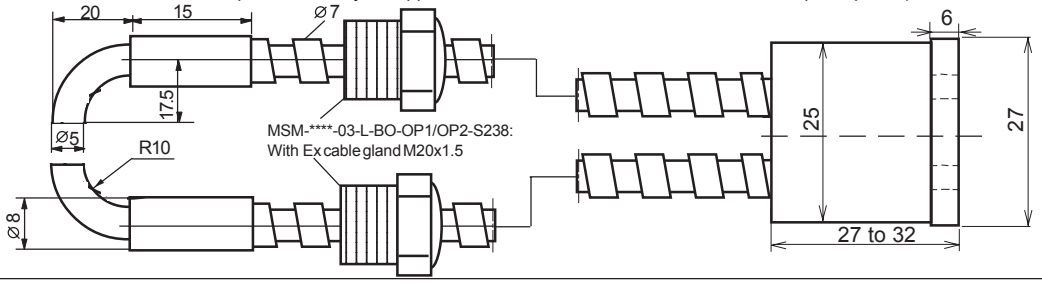
II 2G IIB T4 Gb, II 2D IIIB T135°C Db

EC-Certification No. BVS 10 ATEX E 130 X. DEKRA

IECEx-Certification No. IECEx 14.0108X

(X designation of the certification number: Fibre optics must only be applicated with sensors with certificated limited optical power)

Dimensions:



Operating Manual, EC-/EU - Declaration of Conformity:

Ex mounting prescriptions
Type MSM-**-03-L-BO-OP1: For use in Ex zones 0, 1, 2, 20, 21, 22.**
Type MSM-**-03-L-BO-OP2: Only for use in Ex zones 1, 2, 21, 22.**
General regulations for all types:
The maximum rated optical input power must not be exceeded. The local equipotential bonding have to be done by grounding the fixed sensor. It is necessary to take into consideration the valid international and national rules and regulations (EN 60079-14). Other then original manufacturer, additional optical lenses are not allowed in hazardous locations. The fibre optics have to be installed in a manner to avoid tensile stress and frictional heat. If fibre optics and associated sensors are not mounted in the same hazardous location, the change over of the different areas must be realized in accordance with the valid regulations. With the additional shrink-down plastic tubings (only type MSM-****-03-L-BO-OP1) a required change over can be realized.

Function
The fibre optics series MSM are designed for the construction of light barrier measurement method arrangements in hazardous locations and for high ambient temperatures. The fibre optics can be operated with certificated Matrix sensors, with an optical wave length from 500nm to 900nm. The fibre optics must not be buckled or laid with a small radius. Buckled or bad laid fibre optics results to a strong decrease of performance. Avoid performance decreasing and failures caused by wear, by a functional mounting of the fibre optics.

Maintenance
The fibre optics are maintenance-free. Protect the fibre optics against pollution. If they are contaminated, clean with alcohol. Do not use aggressive solvents. Equipment must only be repaired or serviced by the manufacturer.

Safety Informations
When installing and operating, it is necessary to take into consideration the relevant international and other national regulations. EN 60079-14, ATEX 118a, single directive 1999/92/EC.
Standards met:
EN 60079-0:2012 + A11:2013, EN 60079-28:2007, EN 60529:2014
ATEX directive: 2014/34/EU, Machine directive: 2006/42/EC,
RoHS directive: 2011/65/EU

General Notes, disposal
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. No longer usable or irreparable units must be disposed of in accordance with local waste disposal regulations.

EC-/EU-Declaration of Conformity
IECEx certification No. BVS 14.0108X.
ATEX certification: Certification No. BVS 10 ATEX E 130 X, DEKRA EXAM GmbH, Zertifizierungsstelle, Carl-Beyling-Haus, Dinendahlstrasse 9, D-44809 Bochum, Ident No. 0158.
ATEX certification of quality type production of Ex devices in accordance to the ATEX directive 2014/34/EU, CE 1258, Eurofins, QAR No. CH/SEV/QAR21.0009/00. Certification No: SEV 21 ATEX 4580. 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 9001:2015 with the ATEX module "Production", declares:

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