Tippkemper®

ISO 9001:2015 / ATEX

MATRIX elektronik ag

Original operating manual: Glass Fibre Optics

CE 0158

MSM-****-04-T-GR-OP1 / MSM-****-04-T-GR-OP2 / MSM-****-04-T-GR

IECEx BVS 14.0108X

- Stainless steel protection sheath, for reflective measurement method
- MSM-****-04-T-GR-OP1: Authorized for Ex zones 0, 1, 2, 20, 21, 22
- MSM-****-04-T-GR-OP2: Authorized for Ex zones 1, 2, 21, 22
- MSM-****-04-T-GR: Only applicable 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

Technical data / Type	MSM-****-04-T-GR-OP1	MSM-****-04-T-GR-OP2	MSM-****-04-T-GR
Standard length and designation	****=Length in mm, 200, 500, 1000, 1500, 2000 (Overall length)		
Ex Protection, Gas	II 1G op is IIC T4 Ga	II 2G op is IIB T4 Gb	none
Ex Protection, Dust	II 1D op is IIIC T135°C Da	II 2D op is IIIB T135°C Db	none
Applicable 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	4mm		
Active cross-sectional area	12.6mm²		
Transmission rate, average	50-70%, at 870nm		
Optical aperture	appr. 65°, at 870nm		
Individual fibre diameter	50um		
Minimum bending radius	50mm (Single bend)		
Operating temperature range T_{amb}	0°C < T_{amb} < +120°C	0°C < T_{amb} < +120°C	-20°C < T_{amb} < +120°C
Enclosure rating, according to EN 60529	IP 68		
Material, adaption probe tip	Special steel, 1.4305		
Material, probe tip	Special steel, 1.4305		
Material, protection sheath	Special steel, 1.4301		
Accessories, included	1 x Shrink-down plastic tubing	--	
Accessories, not included	- Additional optics type OT-VA (Material: brass, Ni plated)		
Options	- Type MSM-****-04-T-GR-OP1-S247: Without shrink-down plastic tubing		

ATEX/IECEx RELATED MARKINGS — Manufacturer with address

CE 0158 T_{amb}= 0°C < T_{amb} < +120°C — Date of production: Numerals 5 to 8 of the serial number (year/calendar week)

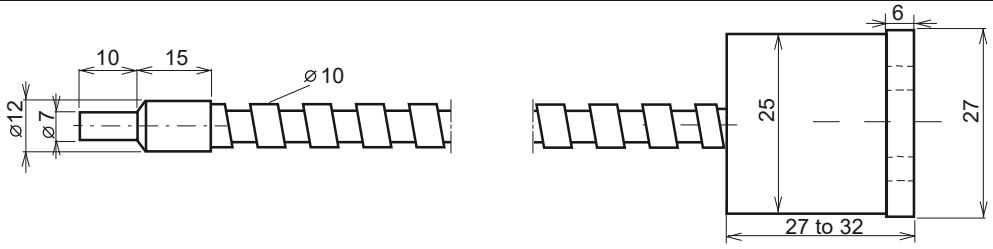
Date of production: Numerals 5 to 8 of the serial number (Year/Week)

Type: MSM-****-04-T-GR-OP1 (Ex) II 1G op is IIC T4 Ga, II 1D op is IIIC T135°C Da EC-Certification No. BVS 10 ATEX E 130 X. DEKRA

Type: MSM-****-04-T-GR-OP2 II 2G op is IIB T4 Gb, II 2D op is IIIB T135°C Db IECEx-Certification No. IECEx BVS 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-**-04-T-GR-OP1(-S247): Applicable in Ex zones (0), 1, 2,(20), 21, 22.**

Type MSM-**-04-T-GR-OP2: Only applicable 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 types MSM-****-04-T-GR-OP1, not included for the type MSM-****-04-T-GR-OP1-S247) a required change over can be realized.

Function

The fibre optics series MSM are designed for the construction of proximity switch measurement method arrangements in hazardous locations and for high ambient temperatures up to +120°C. 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 60079-0:2018, EN 60079-28:2015. 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

ATEX EU type examination certificate no. BVS 10 ATEX E 130 X, IECEx CoC: IECEx BVS 14.0108X. NB: Dekra Testing and Certification GmbH, Carl-Beyling-Haus, Dinendahlstrasse 9, D-44809 Bochum, Ident No. 0158.

ATEX certificate for the production of Ex products in accordance to the ATEX directive 2014/34/EU, No: BVS 18 ATEX ZQS / E118, QAR No. DE/BVS/QAR13.0004/05, Dekra Testing and Certification GmbH, Carl-Beyling-Haus, Dinendahlstrasse 9, D-44809 Bochum, Ident No. 0158.

The conformity of the devices with the EC standards and directives and the EC-type examination certificate and the observation of the Quality Management System ISO 9001:2015 with the ATEX module "Production", declares:

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