

## MSM-\*\*\*\*-02-T-GR-OP7

### Fibre optics



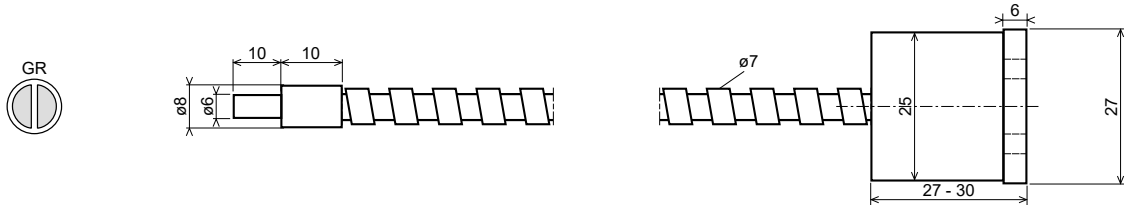
1258



- Fibre optics with chromium plated brass protection sheath and stainless steel reinforcement for proximity switch measurement arrangements.

Technical Data	MSM-****-02-T-GR-OP7
Gas Ex protection designation	II 2G Ex op is IIC T5 Gb
Dust Ex protection designation	II 2D Ex op is IIIC T100°C Db
For use in Ex Zones	0, 1, 2, 20, 21 and 22
Permitted sensors	Only for operating with ATEX/IECEX certificated sensors from Matrix Elektronik AG of type: **D-****-***-OP
Total length	****=Length in mm, 200/500/1000/1500/2000 (Overall length)
Active fibre optic diameter	2mm
Active cross-sectional area	3.14mm <sup>2</sup> (Transmitter and receiver fibres split)
Single fiber diameter	50um
Average transmission	50-70% at 880nm
Optical acceptance angle	approx. 65° at 880nm
Minimum bending radius	30mm (Single bend)
Materials	protection sheath: Chromium plated brass probe tip: Special steel, 1.4305 adaption probe tip: Special steel, 1.4305
Enclosure rating	IP68
Ambient working temperature range, T <sub>amb</sub>	-20°C up to +100°C

#### Dimensions



#### EX related markings

CE 1258

Gas: II 2G Ex op is IIC T5 Gb

ATEX:

IECEX:

Tamb: -20°C up to +100°C

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

Manufacturing date: Digits 5 to 8 of the serial number(Year / CW)

Dust: II 2D Ex op is IIIC T100°C Db

BVS 10 ATEX E 130 X

IECEX BVS 14.0108X

Manufacturer with address

#### Operating Manual / EU-declaration of conformity

##### Ex installation prescriptions

It is necessary to take into consideration the valid international and national rules and regulations (IEC 60079-14). The optical fibre must only be operated with ATEX/IECEX homologated sensors from Matrix Elektronik AG. The maximum rated optical input power must not be exceeded. The local equipotential bonding have to be done by grounding the fixed sensor. Other than original manufacturer, additional optical lenses are not allowed in hazardous locations. The fibre optics have to be installed in a manner that avoids 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. The product MSM-\*\*\*\*-02-T-GR-OP7 is applicable in Ex zones 0, 1, 2, 20, 21 and 22.

##### Function

The fibre optics series MSM-\*\*\*\*-02-T-GR-OP7 are designed for the construction of proximity switch measurement method arrangements in hazardous locations and for high ambient temperatures. The fibre optics must only be operated with certificated Matrix sensors, with limited optical radiation power and 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.

##### General safety

When installing and operating the product, it is necessary to take into consideration all relevant international and other national regulations, especially those regarding explosion protection.

##### Maintenance

No special maintenance is required.

Protect the product and any optical ports (if applicable) from pollution. Clean with **non-aggressive** solvents only. Strong solvents may damage certain fibre optics. The equipment must only be repaired or serviced by the manufacturer.

##### General notes and disposal

We reserve the right to modify our products. Our products are designed in such a way, that it has the least possible adverse effect on the environment. It neither emits or contains 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.

##### EU-Declaration of Conformity

The product meets the requirements of the following standards and directives:

EN IEC 60079-0:2018, IEC 60079-28:2015, IEC 60079-31:2013, ATEX directive 2014/34/EU, Machine directive 2006/42/EC, RoHS directive 2011/65/EU

ATEX/IECEX-Designation:

Gas: II 2G Ex op is IIC T5 Gb

Dust: II 2D Ex op is IIIC T100°C Db

ATEX EU-type examination certificate No.: BVS 10 ATEX E 130 X

IECEX CoC No.: IECEX BVS 14.0108X

Ex CB IECEX: DEKRA Testing and Certification GmbH, Carl-Beyling-Haus, Dinen-dahlstrasse 9, D-44809 Bochum.

ATEX certification of quality management system, type production of Ex devices, in accordance to the directive 2014/34/EU:

Certification No.: SEV 21 ATEX 4580, QAR No.: CH/SEV/QAR21.0009/01, CB: Eurofins Electric & Electronic Product Testing AG, Luppmenstrasse 3, CH-8320 Fehraltorf CE 1258 Ident. Number: 1258

Pablo Ledergerber, Matrix Elektronik AG, is authorized to generation of documentation.

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

Ehrendingen, 12.9.2023

Pablo Ledergerber, Matrix Elektronik AG

MSM-xxxx-02-T-GR-OP7\_e1/2023-09-12/MIP