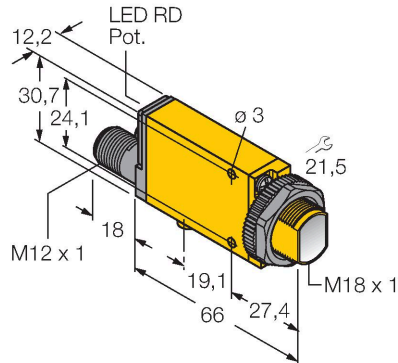


# MI9EQ

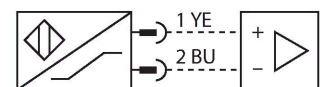
## Photoelectric Sensor – Opposed Mode Sensor (Emitter)



### Features

- M12 × 1 connector, 4-pin
- Degree of protection IP67
- Operating voltage: 5...15 VDC (NAMUR)
- ATEX category II 1 G, Ex zone 0

### Wiring diagram



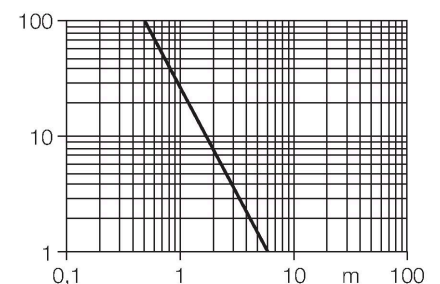
### Technical data

Type	MI9EQ
ID	3040143
<b>Optical data</b>	
Function	Opposed mode sensor
Operating mode	Emitter
Light type	IR
Wavelength	880 nm
Range	0...6000 mm
<b>Electrical data</b>	
Operating voltage	5...15 VDC
Voltage	Nom. 8.2 VDC
No-load current	≤ 2.1 mA
Readiness delay	≤ 0 ms
Setting option	Potentiometer
<b>Mechanical data</b>	
Design	Rectangular with thread, Mini Beam
Dimensions	Ø 18 x 84 x 12.3 x 30.7 mm
Housing material	Plastic, Thermoplastic material, Yellow
Lens	plastic, Acrylic
Electrical connection	Connector, M12 × 1, PVC
Number of cores	4
Ambient temperature	-40...+70 °C
Protection class	IP67
Special features	Encapsulated
<b>Tests/approvals</b>	
MTTF	853 years acc. to SN 29500 (Ed. 99) 40 °C

### Functional principle

Opposed mode sensors consist of an emitter and receiver. They are installed opposite each other so that the light from the emitter is aimed directly at the receiver. When an object interrupts or weakens the light beam, the sensor switches. Opposed mode sensors are the most reliable photoelectric sensors for detection of opaque targets. An excellent contrast between light and dark conditions and an extremely high excess gain are typical of this sensing mode, thus allowing operation over larger distances and under difficult conditions.

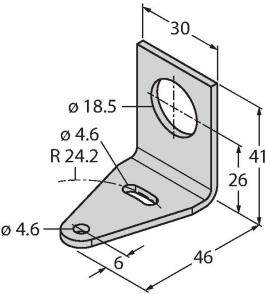
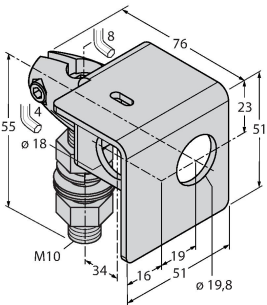
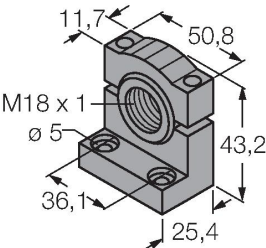
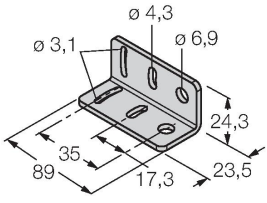
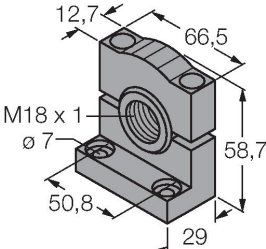
Excess gain curve  
Excess gain in relation to the distance



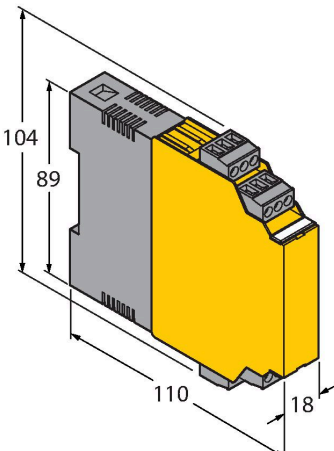
## Technical data

Approvals	CE, FM, CSA
Approvals	ATEX II 1G ATEX II 2G ATEX II 3G
Device marking	Ex II 1 G Ex ia IIC T5 Ga
Ignition protection category	Ex ia IIC T5 Ga
Ex approval acc. to conformity certificate	FM12ATEX0094X

## Accessories

<b>SMB18A</b> 	<b>3033200</b> Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread	<b>SMB18AFAM10</b> 	<b>3012558</b> Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm
<b>SMB18SF</b> 	<b>3052519</b> Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable	<b>SMB312B</b> 	<b>3025519</b> Mounting bracket, stainless steel, for MINI-BEAM NAMUR
<b>SMB3018SC</b> 	<b>3053952</b> Mounting bracket, PTB black, for sensors with 18 mm thread		

Accessories

Dimension drawing	Type	ID	
	IM1-22EX-R	7541231	Isolating switching amplifier, 2-channel; 2 relay outputs; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable output mode (NO / NC mode); removable terminal blocks; width 18 mm; universal power supply unit

## Operating Instructions

Intended use	This device fulfills the directive 94/9/EC and is suited for use in explosion hazardous areas according to EN60079-0:2009, -11:2012, -26:2007. In order to ensure correct operation to the intended purpose it is required to observe the national regulations and directives.
For use in explosion hazardous areas conform to classification	II 1 G (Group II, Category 1 G, electrical equipment for gaseous atmospheres).
Marking (see device or technical data sheet)	Ⓔ II 1 G and Ex ia IIC T5 Ga acc. to EN60079-0, -11 and -26
Local admissible ambient temperature	-25...+70 °C
Installation/Commissioning	These devices may only be installed, connected and operated by trained and qualified staff. Qualified staff must have knowledge of protection classes, directives and regulations concerning electrical equipment designed for use in explosion hazardous areas. Please verify that the classification and the marking on the device comply with the actual application conditions.
	This device is only suited for connection to approved Exi circuits according to EN 60079-0 and EN 60079-11. Please observe the maximum admissible electrical values. After connection to other circuits the sensor may no longer be used in Exi installations. When interconnected to (associated) electrical equipment, it is required to perform the "Proof of intrinsic safety" (EN60079-14).
Installation and mounting instructions	Avoid static charging of cables and plastic devices. Please only clean the device with a damp cloth. Do not install the device in a dust flow and avoid build-up of dust deposits on the device. If the devices and the cable could be subject to mechanical damage, they must be protected accordingly. They must also be shielded against strong electro-magnetic fields. The pin configuration and the electrical specifications can be taken from the device marking or the technical data sheet. In order to avoid contamination of the device, please remove possible blanking plugs of the cable glands or connectors only shortly before inserting the cable or opening the cable socket.
Service/Maintenance	Repairs are not possible. The approval expires if the device is repaired or modified by a person other than the manufacturer. The most important data from the approval are listed.