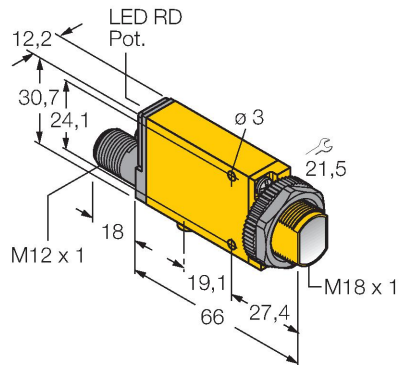


# MIAD9RQ

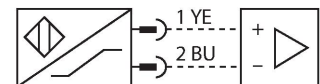
## Photoelectric Sensor – Opposed Mode Sensor (Emitter/Receiver)



### Features

- M12 × 1 connector, 4-pin
- Degree of protection IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 5...15 VDC (NAMUR)
- NAMUR output in accordance with DIN 19234 (IEC/EN 60947-5-6)
- ATEX category II 1 G, Ex zone 0

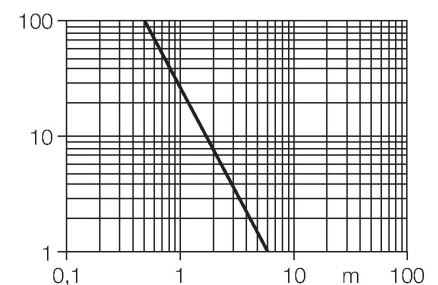
### Wiring diagram



### 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

|                                  |                                         |
|----------------------------------|-----------------------------------------|
| Type                             | MIAD9RQ                                 |
| ID                               | 3040146                                 |
| <b>Optical data</b>              |                                         |
| Function                         | Opposed mode sensor                     |
| Operating mode                   | Receiver                                |
| Range                            | 6000 mm                                 |
| <b>Electrical data</b>           |                                         |
| Operating voltage                | 5...15 VDC                              |
| Voltage                          | Nom. 8.2 VDC                            |
| Current consumption non-actuated | ≤ 1.2 mA                                |
| Actuated current consumption     | ≥ 2.1 mA                                |
| Output function                  | Light operation, NAMUR                  |
| Switching frequency              | ≤ 100 Hz                                |
| Readiness delay                  | ≤ 0 ms                                  |
| Response time typical            | < 2 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                            |



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)                   | Ex 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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |