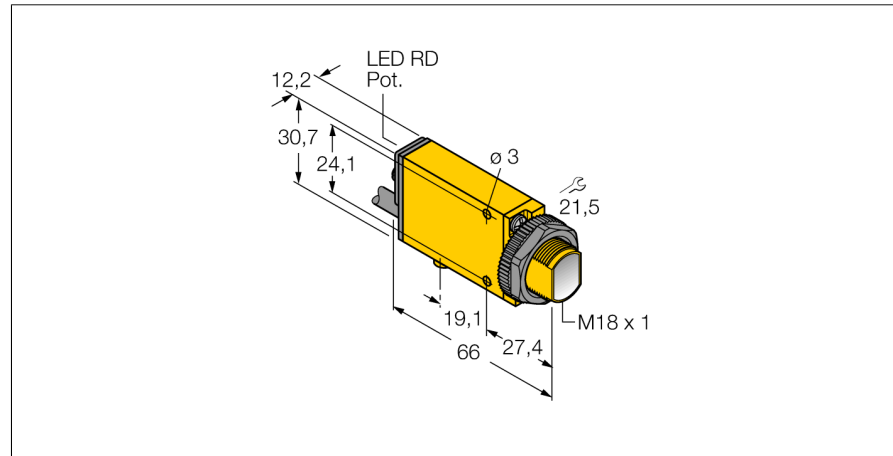
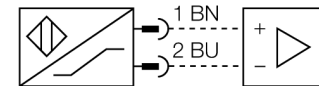


**Photoelectric sensor  
retroreflective sensor  
MIAD9LV**



- ATEX II 1 G approval
- Acc. to EN 60947-5-6 (NAMUR)
- Cable, PVC, 2 m
- Protection class IP67
- Sensitivity adjustable via potentiometer
- Alignment indicator
- Operating voltage: 5...15 VDC (NAMUR)
- Switching output, bipolar
- Light/dark operation

**Wiring diagram**



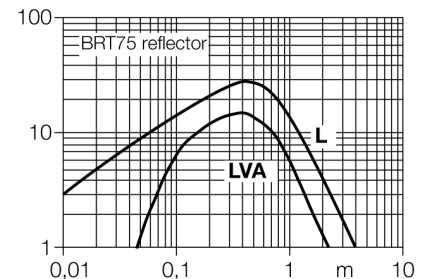
<b>Type code</b>	MIAD9LV
Ident no.	3037717
<b>Operating mode</b>	retro-reflective sensor
Light type	red
Wavelength	650 nm
Range	15...5000 mm
Ambient temperature	-40...+70 °C
<b>Voltage</b>	Nom. 8.2 VDC
Non-actuated current consumption	≤ 1.2 mA
Actuated current consumption	≥ 2.1 mA
Output function	light operation, NAMUR
Switching frequency	≤ 100 Hz
<b>Device designation</b>	Ex II 1 G Ex ia IIC T5
<b>Design</b>	rectangular, Mini Beam
Dimensions	66 x 12.3 x 30.7 mm
Housing material	plastic, PBT, yellow
Lens	plastic, acrylic
Connection	cable
Cable length	2 m
Cable cross section	2 x 0.5 mm <sup>2</sup>
Protection class	IP67
Protection type	Ex ia IIC T5 Ga
Ex approval acc. to conformity certificate	FM12ATEX0094X
<b>Switching state</b>	LED red
Excess gain indication	LED red flashing

**Functional principle**

Retro-reflective sensors incorporate emitter and receiver in a single compact housing. The light beam of the emitter is directed towards a reflector which returns the light back to the receiver. An object is detected when it interrupts this beam. Retro-reflective sensors incorporate some of the advantages of opposed mode sensors (good contrast and high excess gain). Further it is merely required to install and wire a single device. A smaller sensing range and susceptibility of devices without polarisation filter can be of disadvantage when shiny objects have to be detected.

**Excess gain curve**

Excess gain in relation to the distance (type LV)

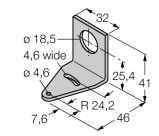
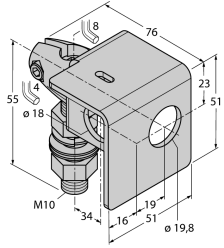
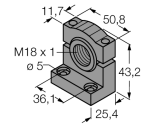
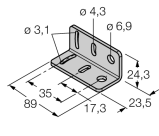
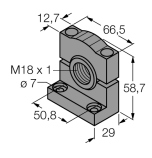


Photoelectric sensor  
retroreflective sensor  
MIAD9LV

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**Accessories**

Type code	Ident no.	Description	Dimension drawing
SMB18A	3033200	Mounting bracket, stainless steel, for sensors with 18 mm thread	 <p>Technical drawing of the SMB18A mounting bracket. Dimensions include: top width 32, hole diameter <math>\phi 18.5</math>, hole offset 4.6, hole diameter <math>\phi 4.6</math>, hole offset 25.4, hole diameter <math>\phi 4.6</math>, hole offset 7.6, radius R 24.2, and total width 46.</p>
SMB18AFAM10	3012558	Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm	 <p>Technical drawing of the SMB18AFAM10 mounting bracket. Dimensions include: top width 76, hole diameter <math>\phi 18</math>, hole offset 55, hole diameter <math>\phi 18</math>, hole offset 4, hole diameter 8, hole offset 19, hole diameter <math>\phi 19.8</math>, hole offset 16, hole diameter 16, hole offset 34, hole diameter M10, hole offset 51, hole diameter 23, and hole offset 51.</p>
SMB18SF	3052519	Mounting bracket, PTB black steel, for sensors with 18 mm thread	 <p>Technical drawing of the SMB18SF mounting bracket. Dimensions include: top width 50.8, hole diameter <math>\phi 18</math>, hole offset 11.7, hole diameter <math>\phi 5</math>, hole offset 36.1, hole diameter 25.4, and hole offset 43.2.</p>
SMB312B	3025519	Mounting bracket, stainless steel, for MINI-BEAM NAMUR	 <p>Technical drawing of the SMB312B mounting bracket. Dimensions include: top width 89, hole diameter <math>\phi 3.1</math>, hole offset 35, hole diameter <math>\phi 4.3</math>, hole offset 17.3, hole diameter <math>\phi 6.9</math>, hole offset 23.5, and hole offset 24.3.</p>
SMB3018SC	3053952	Mounting bracket, PTB black, for sensors with 18 mm thread	 <p>Technical drawing of the SMB3018SC mounting bracket. Dimensions include: top width 66.5, hole diameter <math>\phi 18</math>, hole offset 12.7, hole diameter <math>\phi 7</math>, hole offset 50.8, hole diameter 29, and hole offset 58.7.</p>

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Function accessories

Type code	Ident no.	Description	Dimension drawing
IM1-22EX-R	7541231	Isolating switching amplifier, dual-channel; 2 relay outputs NO; input NAMUR signal; selectable ON/OFF mode for wire-break and short-circuit monitoring; adjustable signal flow (NO/ NC mode); removable terminal blocks; 18 mm width; universal voltage supply unit	
BRT-3	3016164	Round reflector, reflection coefficient 1.0, material acrylic, ambient temperature -20 ... +60 °C	

# Photoelectric sensor retroreflective sensor MIAD9LV

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## Operating manual

### 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 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 compliant to EN60079-0 and -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.