# M18-3NAES-Q8
# Photoelectric Sensor – Opposed Mode Sensor (Emitter)
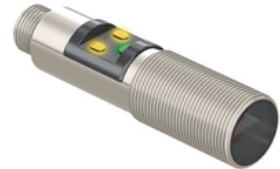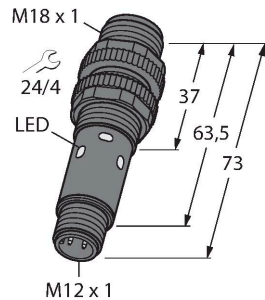


## Technical data

| | |
|---|---|
| Type | M18-3NAES-Q8 |
| ID no. | 3092560 |
| **Optical data** | |
| Function | Opposed mode sensor |
| Operating mode | Emitter |
| Light type | Red |
| Wavelength | 624 nm |
| Range | 0…25000  mm |
| **Electrical data** | |
| Operating voltage | 10…30  VDC |
| No-load current | ≤ 17 mA |
| Short-circuit protection | yes / Cyclic |
| Reverse polarity protection | yes |
| Readiness delay | ≤ 100 ms |
| Response time typical | < 1.5  ms |
| Setting option | Potentiometer |
| **Mechanical data** | |
| Design | Threaded barrel, M18 |
| Dimensions | Ø 18 x 73  mm |
| Housing material | Metal, Nickel-plated brass |
| Lens | Acrylic |
| Electrical connection | Connectors, M12 × 1, PVC |
| Number of cores | 4 |
| Ambient temperature | -40…+70  °C |
| Protection class | IP67 IP69 |
| Special features | Wash down |

## Features

■ M12 × 1 male connector, 4-pin
■ Protection classes IP67/IP69K
■ Ambient temperature: -40…+70° C
■ Operating voltage: 10…30 VDC

## Wiring diagram



BN (1)    +

BU (3)    −
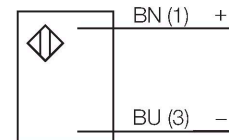
## Functional principle

Opposed mode sensors consist of an emitter and a receiver. They are installed opposite to each other whereby the emitted light aims 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 objects. The high light/dark contrast and the very high excess gain are typical for this function mode and enable operation over large distances and under difficult conditions.
Excess gain curve
Excess gain in relation to distance

## Technical data

| | |
|---|---|
| Power-on indication | LED, Green |
| Excess gain indication | LED |
| **Tests/approvals** | |
| Approvals | CE, cULus |

## Excess Gain Curve





Distance [m]
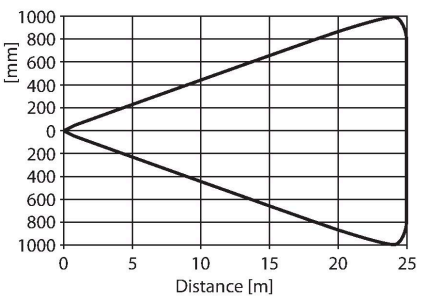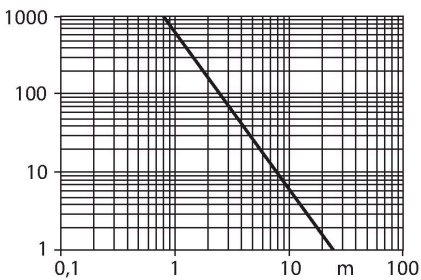
## Accessories

| MW-18 | 6945004 |
|---|---|



Mounting bracket for threaded barrel sensors; material: Stainless steel A2 1.4301 (AISI 304)

| SMB18A | 3033200 |
|---|---|



Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread

| SMB18FAM10 | 3011184 |
|---|---|



Mounting bracket, material VA 1.4401, for M10 x 1.5 thread, thread length 18 mm
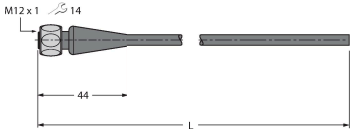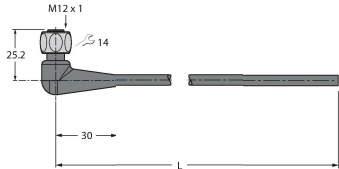
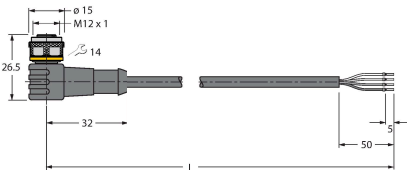| SMB18SF | 3052519 |
|---|---|



Mounting bracket, PBT black, for sensors with 18 mm thread, rotatable

| SMBS18-2-1 | 3085931 |
|---|---|

## Accessories

| Dimension drawing | Type | ID no. | |
|---|---|---|---|
| | RKH4.4-2/TFG | 6933086 | Connection cable, M12 female, straight, 4-pin, stainless steel coupling nut, cable length: 2 m, jacket material: TPE, gray temperature range -40…+105 °C; other cable lengths and designs available, see www.turck.com |
| | WKH4.4-2/TFG | 6933093 | Connection cable, M12 female, angled, 4-pin, stainless steel coupling nut, cable length: 2 m, jacket material: TPE, gray temperature range -40…+105 °C; other cable lengths and designs available, see www.turck.com |
| | RKC4.4T-2/TEL | 6625013 | Connection cable, female M12, straight, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |
| | WKC4.4T-2/TEL | 6625025 | Connection cable, female M12, angled, 4-pin, cable length: 2 m, sheath material: PVC, black; cULus approval; other cable lengths and qualities available, see www.turck.com |