

# TM186EQ5

## Photoelectric Sensor – Opposed Mode Sensor (Emitter)

### Technical data

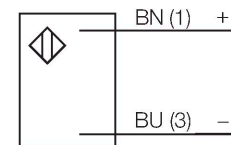
|                        |                                            |
|------------------------|--------------------------------------------|
| Type                   | TM186EQ5                                   |
| ID                     | 3042054                                    |
| <b>Optical data</b>    |                                            |
| Function               | Opposed mode sensor                        |
| Operating mode         | Emitter                                    |
| Light type             | Red                                        |
| Wavelength             | 625 nm                                     |
| Range                  | 0...20000 mm                               |
| <b>Electrical data</b> |                                            |
| Operating voltage      | 10...30 VDC                                |
| Residual ripple        | < 10 % U <sub>ss</sub>                     |
| No-load current        | ≤ 25 mA                                    |
| Readiness delay        | ≤ 100 ms                                   |
| Response time typical  | < 1.5 ms                                   |
| <b>Mechanical data</b> |                                            |
| Design                 | Tube, TM18                                 |
| Dimensions             | Ø 18 x 30 x 30 x 41 mm                     |
| Housing material       | Metal, Zinc Die-Cast with Nickel-Plating   |
| Lens                   | plastic, Polycarbonate                     |
| Electrical connection  | Cable with connector, M12 × 1, 0.15 m, PVC |
| Number of cores        | 4                                          |
| Core cross-section     | 0.5 mm <sup>2</sup>                        |
| Ambient temperature    | -40...+70 °C                               |
| Protection class       | IP67<br>IP69                               |
| Special features       | Encapsulated<br>Wash down                  |
| Power-on indication    | LED, Green                                 |
| Excess gain indication | LED                                        |
| <b>Tests/approvals</b> |                                            |
| Approvals              | CE, UL                                     |



### Features

- Cable with male end M12 × 1, 4-pin, PUR, 150 mm
- Protection class IP67
- Ambient temperature: -40 °C...+70 °C
- Metal housing
- Operating voltage: 10...30 VDC

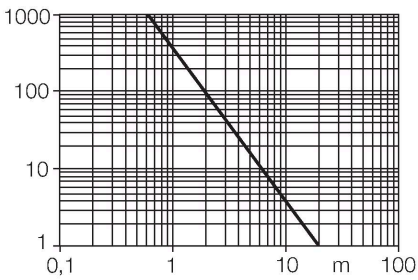
### Wiring diagram



### Functional principle

Opposed mode sensors consist of an emitter and receiver. They are installed opposite to 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. The excellent light/dark contrast and the high excess gain allow operation over larger distances and under difficult conditions.

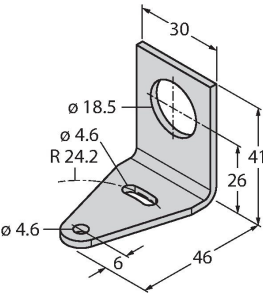
Excess gain curve  
Excess gain in relation to the distance



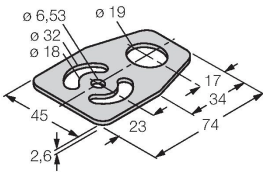
Accessories

|                                                                                                         |         |
|---------------------------------------------------------------------------------------------------------|---------|
| SMBT18Y                                                                                                 | 3069554 |
| mounting bracket, rectangular, for sensors with 18 mm thread, 15.3 mm cable feedthrough or M12 x 1 male |         |

|                                                                               |         |
|-------------------------------------------------------------------------------|---------|
| SMB18A                                                                        | 3033200 |
| Mounting bracket, rectangular, stainless steel, for sensors with 18 mm thread |         |



|                                                                  |         |
|------------------------------------------------------------------|---------|
| SMBAMS18P                                                        | 3073134 |
| Mounting bracket, stainless steel, for sensors with 18 mm thread |         |



Accessories

| Dimension drawing | Type          | ID      |                                                                                                                                                                                                                  |
|-------------------|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   | 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 <a href="http://www.turck.com">www.turck.com</a> |
|                   | 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 <a href="http://www.turck.com">www.turck.com</a>   |