

... an intelligent sensor for detection of persons and objects



## Features

- Time-of-Flight principle (TOF)
- Detection of persons and objects
- Operates under a wide range of environmental conditions
- Fixed detection range, no adjustments needed
- Ideal for OEM applications
- Customer specific versions up to 1.5 m on request
- Small dimensions: 102 x 27 x 23 mm
- Very easy installation & integration
- Plug-and-Play system

## Technical data

### Optical

|                         |                |
|-------------------------|----------------|
| Operating range         | Up to 1.5 m    |
| Detection area at 1.5 m | 700 mm x 30 mm |
| Wave length IR          | 840 nm         |
| Min. object detection   | 50 mm          |
| Direct solar radiation  | 5,000 Lux      |
| Max. ambient light      | 50,000 Lux     |

### Mechanical

|                             |                         |
|-----------------------------|-------------------------|
| Dimensions (w x h x d)      | 102 x 27 x 23 mm        |
| Mechanical adjustment range | ±30°                    |
| Enclosure rating            | IP54                    |
| Temperature range           | -20 °C ... +45 °C       |
| Housing material            | Aluminum, Polycarbonate |

### Electrical

|                              |                               |
|------------------------------|-------------------------------|
| Supply voltage $U_{SP}$      | 24 VDC ±10%                   |
| Ripple at $U_{SP}$           | Max. 10%                      |
| Current consumption at 24 V  | < 200 mA (peak max. 450 mA)   |
| Output                       | PNP or NPN                    |
| Output load                  | Max. 50 mA, 100 nF            |
| Operation mode logic         | ON = active, OFF = sleep mode |
| Response time                |                               |
| - Object detection           | Max. 100 ms                   |
| - Sleep mode                 | Max. 20 ms                    |
| Indication LED (red; status) | ON = object detected          |
| Operation mode               |                               |
| - Permanent mode             | Only with heat sink extension |
| - Intermittent mode          | Active or sleep mode          |

### Connection cable

|                         |                   |
|-------------------------|-------------------|
| Cable type and color    | PVC, black        |
| Diameter                | Ø 3.5 mm          |
| Sensor cable length     | 0.5 m             |
| Connection cable length | 2.8 m             |
| Connecting plug         | M8, 4-pin         |
| Four wires              |                   |
| • brown                 | $U_{SP}$ (24 VDC) |
| • blue                  | GND (0 V)         |
| • black                 | Output            |
| • white                 | Operation mode    |

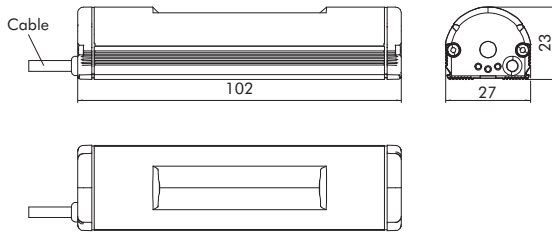
### General

|                 |                        |
|-----------------|------------------------|
| Eye safety norm | EN 62471               |
| EMC emission    | EN 61000-6-3, EN 12015 |
|                 | EN 50155, EN 50121     |
| EMC immunity    | EN 61000-6-2, EN 12016 |
|                 | EN 50155, EN 50121     |

|                   |                               |
|-------------------|-------------------------------|
| Vibration / Shock | IEC 61373, EN 50155, EN 50121 |
| Cable durability  | IEC 60227-2                   |
| RoHS              | Fulfills 2002/95/EC           |
| Certificates      | CE, CSA                       |

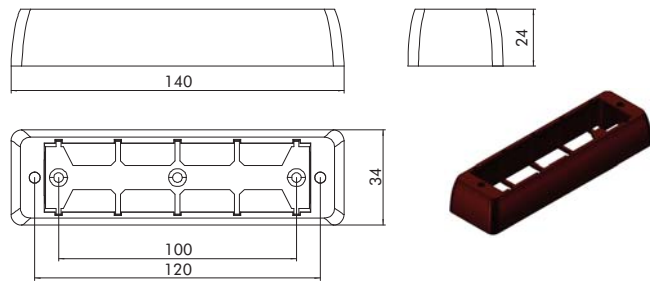
## Dimensions

### Sensor

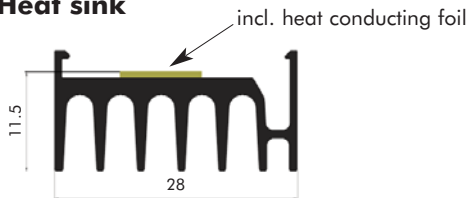


### Mounting kits

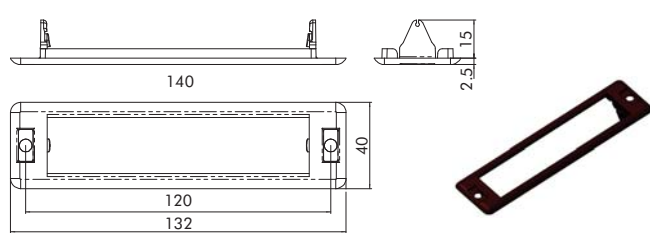
#### Surface mounting



### Heat sink



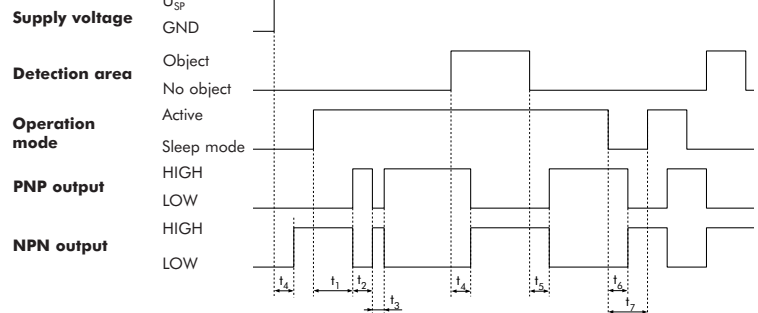
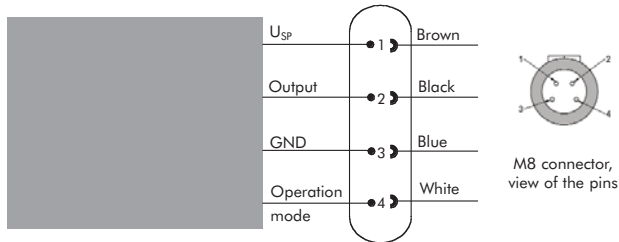
#### Flush mounting



(All dimensions in mm)

## Electrical connection

### TOF/Statix PNP / NPN



#### Operation mode

|  |            | Value                  |
|--|------------|------------------------|
| Permanent mode                                     | Active     | $> \frac{2}{3} U_{SP}$ |
| Intermittent mode<br>(connected with other signal) | Active     | $> \frac{2}{3} U_{SP}$ |
|  | Sleep mode | $< \frac{1}{3} U_{SP}$ |

|                           | Value   |
|---------------------------|---|
| Operation mode active     | $> \frac{2}{3} U_{SP}$                          |
| Operation mode sleep mode | $< \frac{1}{3} U_{SP}$                          |
| PNP output ON             | $> (U_{SP} - 2 V)$                              |
| PNP output OFF            | $< 2 V$<br>(ext. Pull-down resistor)            |
| NPN output ON             | $< 2 V$   |
| NPN output OFF            | $> (U_{SP} - 2 V)$<br>(ext. Pull-down resistor) |

|                            | Time  | Value         |
|----------------------------|-------|---------------|
| Restart time               | $t_1$ | 39 ... 100 ms |
| Pulse time                 | $t_2$ | 5 ms          |
| Delay time                 | $t_3$ | 2 ms          |
| Response time              | $t_4$ | 100 ms        |
| Release time               | $t_5$ |               |
| Response time - sleep mode | $t_6$ | $< 20 ms$     |
| Min. off-time              | $t_7$ | $> 200 ms$    |

## Ordering information

| Part no. | Type  | Description  |
|----------|---|--|
| 109 247  | <b>TOF/Statix-150-PNP, surface mounting</b> | TOF-based detection sensor, PNP output, with surface mounting kits |
| 109 248  | <b>TOF/Statix-150-PNP, flush mounting</b>   | TOF-based detection sensor, PNP output, with flush mounting kit    |
| 109 703  | <b>TOF/Statix-150-NPN, surface mounting</b> | TOF-based detection sensor, NPN output, with surface mounting kit  |
| 109 705  | <b>TOF/Statix-150-NPN, flush mounting</b>   | TOF-based detection sensor, NPN output, with flush mounting kit    |
| 110 814  | <b>TOF/Statix-120-PNP, flush mounting</b>   | TOF-based detection sensor, PNP output, with flush mounting kit    |

### Accessories

|         |                             |   |
|---------|-----------------------------|---|
| 109 249 | <b>TOF/Statix-150-PNP</b>   | Sensor, PNP output, protection area 1.5 m                 |
| 109 504 | <b>TOF/Statix-150-NPN</b>   | Sensor, NPN output, protection area 1.5 m                 |
| 110 848 | <b>TOF/Statix-120-PNP</b>   | Sensor, PNP output, protection area 1.2 m                 |
| 109 507 | <b>Heat sink</b>            | Heat sink incl. heat conducting foil, flush mounting only |
| 104 195 | <b>Extension cable, 3 m</b> | Extension cable, 3 m, M8 4-pin, male-female               |
| 103 602 | <b>Relay module</b>         | Interface module for sensors with semi-conductor output   |

Other configurations on request

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