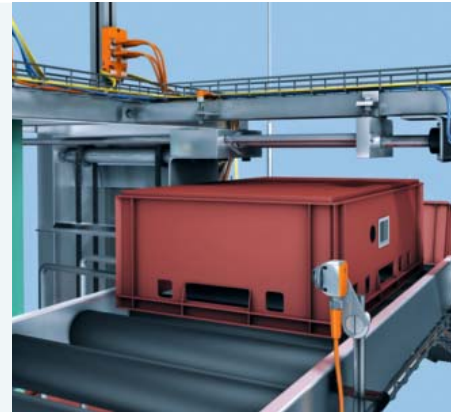




Position sensors

# Precise object detection under extreme conditions



## Ultrasonic sensors



**Robust high-grade stainless steel housing for demanding applications**

**Sensing range up to 1.2 m in M18 cube design and 2.2 m in M18 design**

**The vibrating sound transducer reduces the deposit of dirt**

**Retro-reflective operation for orientation-independent object detection**

**Easy setting via teach button, wire teach or IO-Link**



Ultrasound



High-grade stainless steel



TEACH-IN



IO-Link

### The alternative for difficult surfaces

Ultrasonic sensors transmit and receive sound waves in the ultrasonic range. The object to be detected reflects the sound waves and the distance information is determined via time of flight measurement. As opposed to photoelectric sensors, colour, transparency or the object's surface shine do not play a role. Blister packages in packaging technology or transparent plastic bowls in the food industry, for example, can be reliably detected.

### High performance

The ifm ultrasonic sensors in M18 design provide a particularly small blind zone and long sensing ranges which are usually only achieved by sensors of a considerably larger design.










The sensors operate reliably with heavy soiling so that they can be used in applications in which photoelectric sensors meet their limits.



| Type  | Housing length/<br>dimensions<br>[mm] | Setting             | Output          | Order<br>no.   | Order<br>no.   | Order<br>no.    | Order<br>no.    | Order<br>no.    |
|---|---------------------------------------|---------------------|-----------------|----------------|----------------|-----------------|-----------------|-----------------|
| <b>Ultrasonic diffuse-reflection sensor · 3-wire DC, 4-pole</b> |                                       |                     |                 | <b>300 mm*</b> | <b>800 mm*</b> | <b>1200 mm*</b> | <b>1600 mm*</b> | <b>2200 mm*</b> |
| M18   | 60                                    | Wire                | PNP             | <b>UGT500</b>  | <b>UGT503</b>  | <b>UGT506</b>   | –               | –               |
| M18   | 60                                    | Wire                | NPN             | <b>UGT521</b>  | <b>UGT522</b>  | <b>UGT523</b>   | –               | –               |
| M18   | 60                                    | Wire                | 4...20 mA       | <b>UGT501</b>  | <b>UGT504</b>  | <b>UGT507</b>   | –               | –               |
| M18   | 60                                    | Wire                | 0...10 V        | <b>UGT502</b>  | <b>UGT505</b>  | <b>UGT508</b>   | –               | –               |
| M18   | 60                                    | IO-Link             | PNP             | <b>UGT524</b>  | <b>UGT525</b>  | <b>UGT526</b>   | –               | –               |
| <b>Ultrasonic diffuse-reflection sensor · 3-wire DC, 4-pole</b> |                                       |                     |                 | <b>300 mm*</b> | <b>800 mm*</b> | <b>1200 mm*</b> | <b>1600 mm*</b> | <b>2200 mm*</b> |
| M18 Cube  | 53 x 20 x 38                          | Pushbutton          | PNP + 4...20 mA | <b>UGT580</b>  | <b>UGT582</b>  | <b>UGT584</b>   | –               | –               |
| M18 Cube  | 53 x 20 x 38                          | Pushbutton          | PNP + 0...10 V  | <b>UGT581</b>  | <b>UGT583</b>  | <b>UGT585</b>   | –               | –               |
| M18 Cube  | 53 x 20 x 38                          | Pushbutton          | NPN + 4...20 mA | <b>UGT586</b>  | <b>UGT588</b>  | <b>UGT590</b>   | –               | –               |
| M18 Cube  | 53 x 20 x 38                          | Pushbutton          | NPN + 0...10 V  | <b>UGT587</b>  | <b>UGT589</b>  | <b>UGT591</b>   | –               | –               |
| M18 Cube  | 53 x 20 x 38                          | Pushbutton, IO-Link | PNP             | <b>UGT592</b>  | <b>UGT593</b>  | <b>UGT594</b>   | –               | –               |
| <b>Ultrasonic diffuse-reflection sensor · 3-wire DC, 4-pole</b> |                                       |                     |                 | <b>300 mm*</b> | <b>800 mm*</b> | <b>1200 mm*</b> | <b>1600 mm*</b> | <b>2200 mm*</b> |
| M18   | 98                                    | Pushbutton, IO-Link | 2 x PNP         | –              | –              | –               | <b>UGT509</b>   | <b>UGT512</b>   |
| M18   | 98                                    | Pushbutton, IO-Link | PNP + 4...20 mA | –              | –              | –               | <b>UGT510</b>   | <b>UGT513</b>   |
| M18   | 98                                    | Pushbutton, IO-Link | PNP + 0...10 V  | –              | –              | –               | <b>UGT511</b>   | <b>UGT514</b>   |
| M18   | 98                                    | Pushbutton          | 2x NPN          | –              | –              | –               | <b>UGT515</b>   | <b>UGT518</b>   |
| M18   | 98                                    | Pushbutton          | NPN + 4...20 mA | –              | –              | –               | <b>UGT516</b>   | <b>UGT519</b>   |
| M18   | 98                                    | Pushbutton          | NPN + 0...10 V  | –              | –              | –               | <b>UGT517</b>   | <b>UGT520</b>   |
| <b>Ultrasonic retro-reflective sensor · 3-wire DC, 3-pole</b>   |                                       |                     |                 | <b>300 mm*</b> | <b>800 mm*</b> | <b>1200 mm*</b> | <b>1600 mm*</b> | <b>2200 mm*</b> |
| M18   | 98                                    | Pushbutton, IO-Link | PNP             | –              | –              | –               | <b>UGR500</b>   | <b>UGR501</b>   |
| M18   | 98                                    | Pushbutton          | NPN             | –              | –              | –               | <b>UGR502</b>   | <b>UGR503</b>   |

\* Max. range


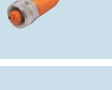


## Accessories

| Type  | Description  | Order<br>no.  |
|---|--|---------------|
|  | Sound tube,<br>M18, POM  | <b>E23000</b> |
|  | Sound deflection angle for sensors with<br>a range of ≤ 1,2 m, stainless steel | <b>E23001</b> |
|  | Sound deflection angle for sensors with<br>a range of ≤ 2,2 m, stainless steel | <b>E23002</b> |
|  | Mounting set for clamp mounting,<br>diecast zinc, Ø 12 mm                      | <b>E20720</b> |
|  | Mounting set for clamp mounting,<br>stainless steel, Ø 12 mm                   | <b>E21206</b> |
|  | Mounting set for clamp mounting,<br>diecast zinc, Ø 12 mm                      | <b>E20721</b> |
|  | Mounting set for clamp mounting,<br>stainless steel, Ø 12 mm                   | <b>E21207</b> |
|  | Rod, 100 mm, Ø 12 mm,<br>M10 thread, stainless steel                           | <b>E20938</b> |
|  | Cube for mounting on an aluminium<br>profile, M10 thread, diecast zinc         | <b>E20951</b> |

## Common technical data

|                             |        |               |
|-----------------------------|--------|---------------|
| Operating voltage           | [V DC] | 10...30       |
| Current rating              | [mA]   | 100           |
| Switching output            |        |               |
| Operating temperature range | [°C]   | -20...70      |
| Temperature compensation    |        | •             |
| Protection                  |        | IP 67         |
| Connection                  |        | M12 connector |
| Status indications          | LED    | yellow        |
| Echo                        | LED    | green         |

## Connection technology

| Type  | Description                                 | Order<br>no.  |
|---|---|---------------|
|  | Socket, M12, 4-pole<br>2 m black, PUR cable | <b>EVC001</b> |
|  | Socket, M12, 4-pole<br>5 m black, PUR cable | <b>EVC002</b> |
|  | Socket, M12, 4-pole<br>2 m black, PUR cable | <b>EVC004</b> |
|  | Socket, M12, 4-pole<br>5 m black, PUR cable | <b>EVC005</b> |