



Position sensors and object recognition

# Easy, quick and precise from all angles.



## Robust optical fork and angle sensors with a high switching frequency.

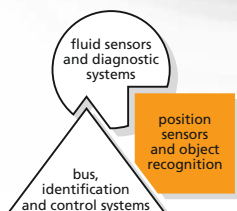
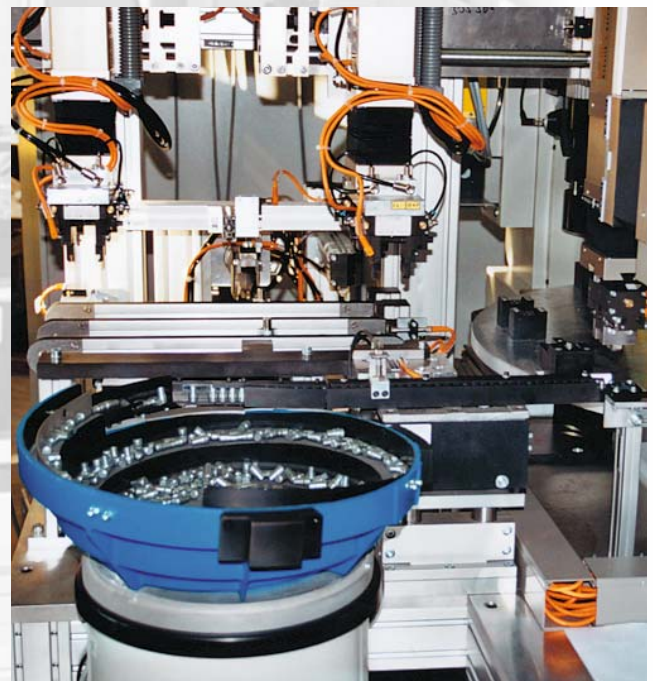
- Metal housing reduces distortion.
- Quick set-up: no need to align transmitter and receiver.
- Easy sensitivity setting via potentiometer.
- Light-on /dark-on mode via rotary switch.
- Across the whole fork width: fine and precise light beam!

|                   |              |                          |             |
|-------------------|--------------|--------------------------|-------------|
| Visible red light | M8 connector | High switching frequency | Easy-to-use |
|-------------------|--------------|--------------------------|-------------|

### Optical sensors in new designs

The new ifm units with robust metal housing resist distortion compared to conventional plastic forks. Compared to through-beam sensors, their advantage is that the time-consuming alignment of transmitter and receiver is not necessary.

These optical sensors are used in particular for part monitoring in feeder and handling systems. Further application examples are belt edge or double feed monitoring with the exact sensitivity setting via potentiometer being very helpful. The fine light beam with its constant small diameter is also ideal for monitoring shaft imbalance.



| Fork width (w) [mm] | Fork depth (d) [mm] | Smallest detectable object Ø [mm] | Switching frequency [Hz] | Output<br>L = light-on mode<br>D = dark-on mode | Order no. |
|---------------------|---------------------|-----------------------------------|--------------------------|---|-----------|
|---------------------|---------------------|-----------------------------------|--------------------------|---|-----------|

**Optical fork sensor type OPU · M8 connector · 3-pole · infrared · PNP/NPN**

|    |    |     |       |                   |        |
|----|----|-----|-------|-------------------|--------|
| 10 | 17 | 0.3 | 10000 | L / D, selectable | OPU200 |
|----|----|-----|-------|-------------------|--------|

**Optical fork sensor type OPU · M8 connector · 3-pole · red light · PNP**

|     |    |     |      |                   |        |
|-----|----|-----|------|-------------------|--------|
| 20  | 25 | 0.4 | 4000 | L / D, selectable | OPU201 |
| 30  | 35 | 0.5 | 4000 | L / D, selectable | OPU202 |
| 50  | 55 | 0.5 | 4000 | L / D, selectable | OPU203 |
| 80  | 55 | 0.5 | 4000 | L / D, selectable | OPU204 |
| 120 | 60 | 0.8 | 2000 | L / D, selectable | OPU205 |

**Optical fork sensor type OPU · M8 connector · 3-pole · red light · NPN**

|     |    |     |      |                   |        |
|-----|----|-----|------|-------------------|--------|
| 20  | 25 | 0.4 | 4000 | L / D, selectable | OPU207 |
| 30  | 35 | 0.5 | 4000 | L / D, selectable | OPU208 |
| 50  | 55 | 0.5 | 4000 | L / D, selectable | OPU209 |
| 80  | 55 | 0.5 | 4000 | L / D, selectable | OPU210 |
| 120 | 60 | 0.8 | 2000 | L / D, selectable | OPU211 |

| Side lengths (x, y) [mm] | Sensor width (z) [mm] | Smallest detectable object Ø [mm] | Switching frequency [Hz] | Output<br>L = light-on mode<br>D = dark-on mode | Order no. |
|--------------------------|-----------------------|-----------------------------------|--------------------------|---|-----------|
|--------------------------|-----------------------|-----------------------------------|--------------------------|---|-----------|

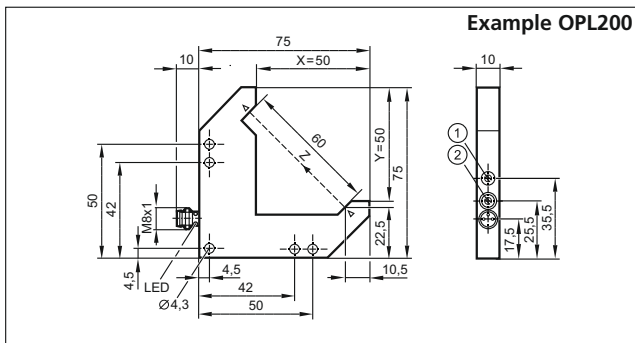
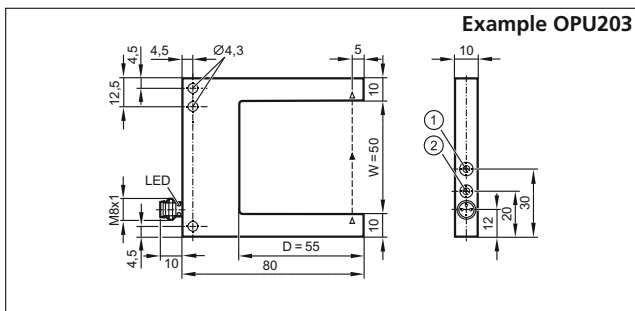
**Optical angle sensor type OPL · M8 connector · 3-pole · PNP**

|    |     |     |      |                   |        |
|----|-----|-----|------|-------------------|--------|
| 50 | 60  | 0.5 | 4000 | L / D, selectable | OPL200 |
| 80 | 100 | 0.7 | 4000 | L / D, selectable | OPL201 |

**Optical angle sensor type OPL · M8 connector · 3-pole · NPN**

|    |     |     |      |                   |        |
|----|-----|-----|------|-------------------|--------|
| 50 | 60  | 0.5 | 4000 | L / D, selectable | OPL202 |
| 80 | 100 | 0.7 | 4000 | L / D, selectable | OPL203 |

**Dimensions**







- 1) Potentiometer sensitivity
- 2) Output function switch

**Common technical data**

| Types<br>OPU / OPL                     |        |              |
|--|--------|--------------|
| Operating voltage                      | [V DC] | 10...35      |
| Short-circuit protection, pulsed       |        | •            |
| Reverse polarity / overload protection |        | • / •        |
| Operating temperature                  | [°C]   | -25...60     |
| Current rating                         | [mA]   | 200          |
| Protection                             |        | IP 67, III   |
| Housing materials                      |        | Diecast zinc |

**Connectors and splitter boxes**

| Type  | Description                              | Order no. |
|---|--|-----------|
|  | Socket, M8, 3-pole, 2 m black, PUR cable | E11486    |
|  | Socket, M8, 3-pole, 5 m black, PUR cable | E11487    |
|  | Socket, M8, 3-pole, 2 m black, PUR cable | E11489    |
|  | Socket, M8, 3-pole, 5 m black, PUR cable | E11490    |