# FIA Series

## FIA-L-S-d0.2-...-RL-TypA-3pol



- Visible red laser light
- Class 1 laser product (680 nm, P<0.39 mW)
- Integrated electronics
- Various fork sizes available
- Laser beam typ. Ø 0.2 mm
- Insensitive to dirt accumulation, insensitive to outside light
- Optical long-pass filter
- High switching frequency (typ. 50 kHz)
- Switching state indication (yellow LED)
- Scratch-resistant optics
- **3-pole M8-connector (180° rotated compared to the standard version)**
- Sturdy aluminum housing, compact design

## Design

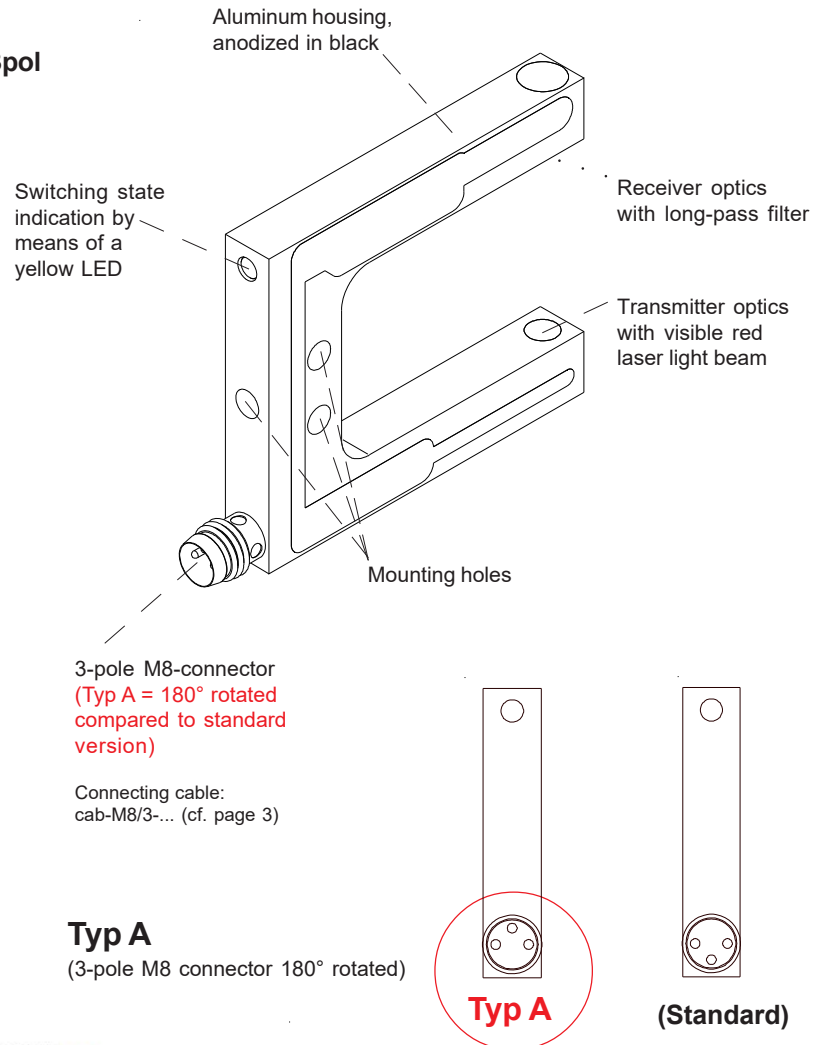
**Product name:**

**FIA-L-S-d0.2-(fork size)-(switching output)-RL-TypA-3pol**

**Laser beam diameter:**
**d0.2** (Ø 0.2 mm)

**Available fork sizes:** (cf. dimensions page 3)
**10/30** (fork width A=10 mm, fork depth B=30 mm)
**20/30** (fork width A=20 mm, fork depth B=30 mm)
**20/40** (fork width A=20 mm, fork depth B=40 mm)
**25/50** (fork width A=25 mm, fork depth B=50 mm)
**25/80** (fork width A=25 mm, fork depth B=80 mm)
**30/30** (fork width A=30 mm, fork depth B=30 mm)
**30/40** (fork width A=30 mm, fork depth B=40 mm)
**40/30** (fork width A=40 mm, fork depth B=30 mm)
**40/40** (fork width A=40 mm, fork depth B=40 mm)
**40/60** (fork width A=40 mm, fork depth B=60 mm)
**60/60** (fork width A=60 mm, fork depth B=60 mm)

**Switching output:**
**Q** pnp bright-switching / npn dark-switching
**Qinv** pnp dark-switching / npn bright-switching



## Technical Data

| Type | FIA-L-S-d0.2-...-RL-TypA-3pol |
|---|---|
| Light source | Solid state laser 680 nm, DC operation, 0.39 mW max. opt. power, laser class 1 acc. to DIN EN 60825-1. The use of these laser transmitters therefore requires no additional protective measures. |
| Laser beam | typ. Ø 0.2 mm |
| Min. detectable object | typ. 0.2 mm |
| Reproducibility | typ. 5 µm |
| Optical filter (receiver side) | long-pass filter |
| Voltage supply | +24VDC (± 10%), reverse polarity protected |
| Ambient light | up to 5000 Lux |
| Current consumption | typ. 20 mA |
| Aperture size (receiver side) | Circular aperture Ø 0.5 mm |
| Switching output (1x) | either Q or Qinv:<br>Q = pnp bright-switching (pnp n.c.) / npn dark-switching (npn n.o.)<br>Qinv = pnp dark-switching (pnp n.o.) / npn bright-switching (npn n.c.)<br>100mA, short-circuit protection |
| Enclosure rating | IP67 |
| Operating temperature range | -20°C ... +50°C |
| Storage temperature range | -20°C ... +85°C |
| Housing material | Aluminum, anodized in black |
| Housing dimensions | cf. page 3 |
| Connector type | 3-pole M8-connector (metal) |
| EMC test acc. to | DIN EN 60947-5-2 CE |
| Switching frequency | typ. 50 kHz |
| Switching state indicator | by means of a yellow LED integrated in the sensor housing<br>LED on = sensor free LED off = sensor covered |

## Laser Information

The laser transmitter of FIA-L Series comply with laser class 1 according to EN 60825-1. Under reasonably foreseeable conditions a class 1 laser is safe. The reasonably foreseeable conditions are kept during specified normal operation. The use of these laser transmitters therefore requires no additional protective measures.

The laser transmitter of FIA-L Series are supplied with an information label „CLASS 1 LASER PRODUCT“.

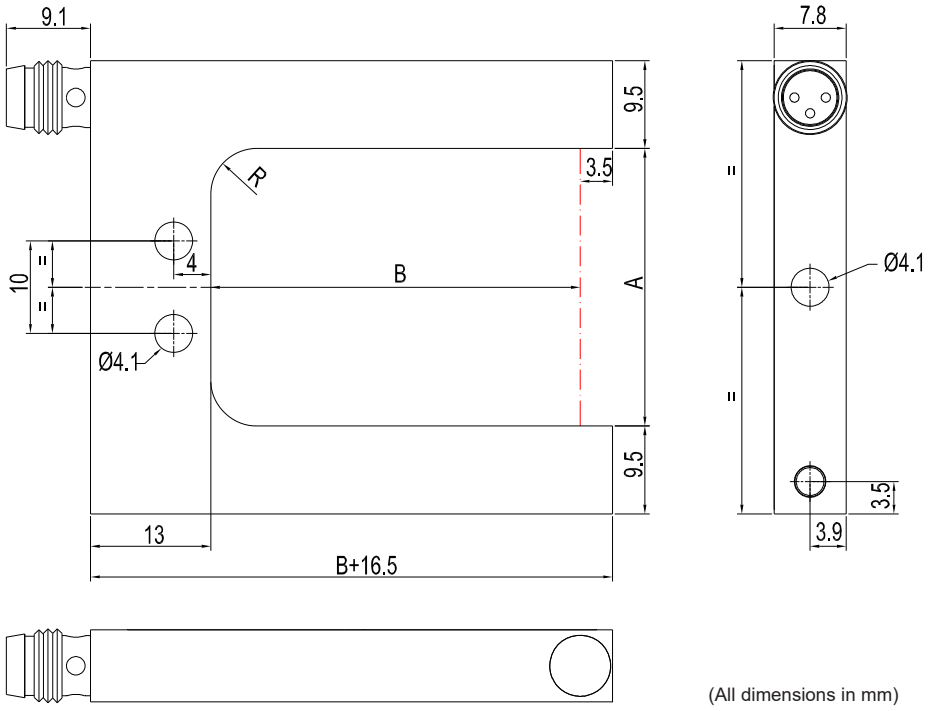




## Dimensions

**FIA-L-S-d0.2-(fork size)-RL-TypA-3pol:**

| Fork-size | Dim. A | Dim. B |
|---|---|---|
| 10/30 | 10 mm | 30 mm |
| 20/30 | 20 mm | 30 mm |
| 20/40 | 20 mm | 40 mm |
| 25/50 | 25 mm | 50 mm |
| 25/80 | 25 mm | 80 mm |
| 30/30 | 30 mm | 30 mm |
| 30/40 | 30 mm | 40 mm |
| 40/30 | 40 mm | 30 mm |
| 40/40 | 40 mm | 40 mm |
| 40/60 | 40 mm | 60 mm |
| 60/60 | 60 mm | 60 mm |

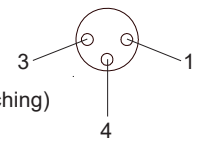



(All dimensions in mm)

## Connector Assignment

**FIA-L-S-d0.2-(fork size)-Q-RL-TypA-3pol**
(3-pole M8 connector)

Pin: Assignment:
1 +Ub (+24VDC ± 10%)
3 GND (0V)
4 Q: Output
(pnp bright-switching / npn dark-switching)

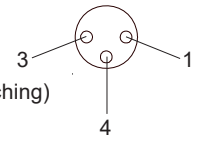



**Available connecting cables to PLC:**

**cab-M8/3-g-2** (l=2m)
**cab-M8/3-g-5** (l=5m)
**cab-M8/3-w-2** (angle type, l=2m)
**cab-M8/3-w-5** (angle type, l=5m)

**FIA-L-S-d0.2-(fork size)-Qinv-RL-TypA-3pol**
(3-pole M8 connector)

Pin: Assignment:
1 +Ub (+24VDC ± 10%)
3 GND (0V)
4 Qinv: Output invers
(pnp dark-switching / npn bright-switching)






**cab-M8/3-g-...** **cab-M8/3-w-...**