

# FIA Series

## ► FIA-S-...-TypA

- Insensitive to outside light due to optical filter
- Infrared light beam (IR LED 905 nm)
- High resolution
- Various aperture sizes available
- Various fork sizes available
- Switching frequency typ. 5 kHz
- Oil-resistant cable with PUR sheath
- Compact and sturdy metal housing
- Typ A: 3-pole M8-connector (180 ° rotated compared to the standard version)



### Design

#### Part number:

FIA-S-(aperture)-(fork size)-(switching output)-IR-TypA

#### Available apertures:

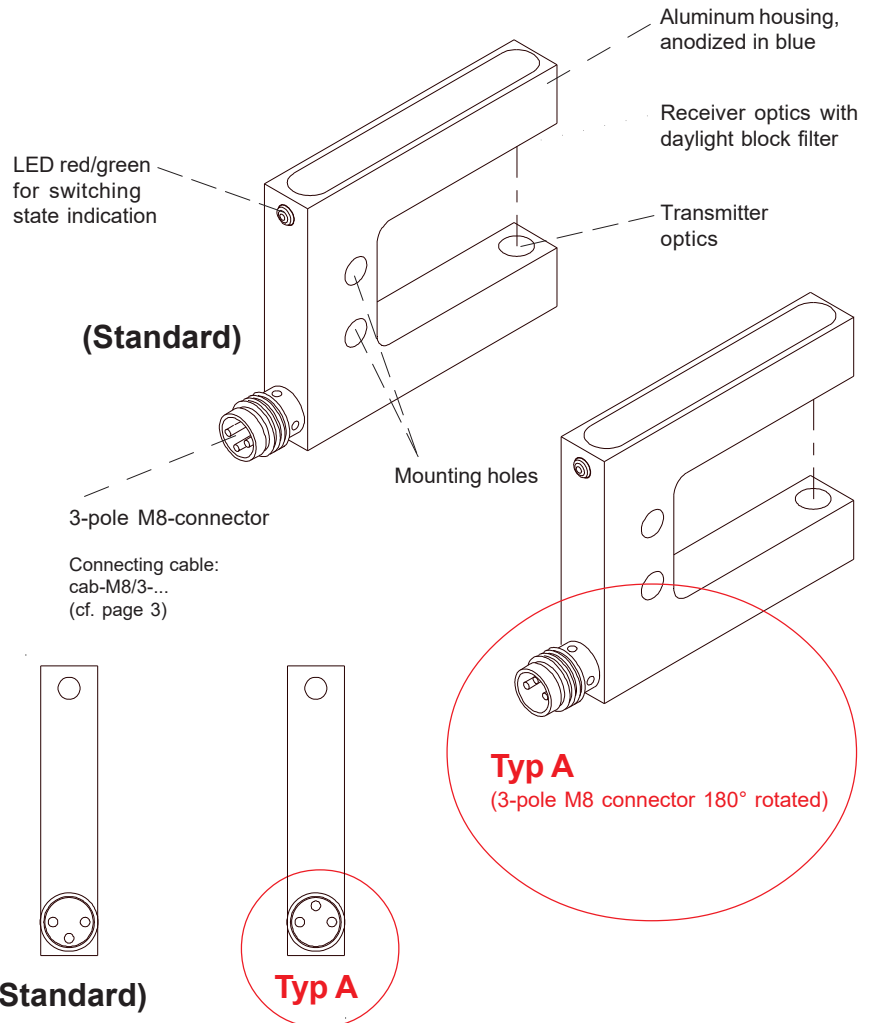
- 0.6** (circular aperture Ø 0.6 mm)
- 0.8** (circular aperture Ø 0.8 mm)
- 1.0** (circular aperture Ø 1.0 mm)
- 1.2** (circular aperture Ø 1.2 mm)
- 1.5** (circular aperture Ø 1.5 mm)

#### Available fork sizes: (cf. dimensions page 3)

- 10/15** (fork width A=10 mm, fork depth B=15 mm)
- 10/30** (fork width A=10 mm, fork depth B=30 mm)
- 15/20** (fork width A=15 mm, fork depth B=20 mm)
- 20/15** (fork width A=20 mm, fork depth B=15 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)

#### Switching output:

- Q** pnp bright-switching / npn dark-switching
- Qinv** pnp dark-switching / npn bright-switching



Sensor 

Instruments



**Technical Data**

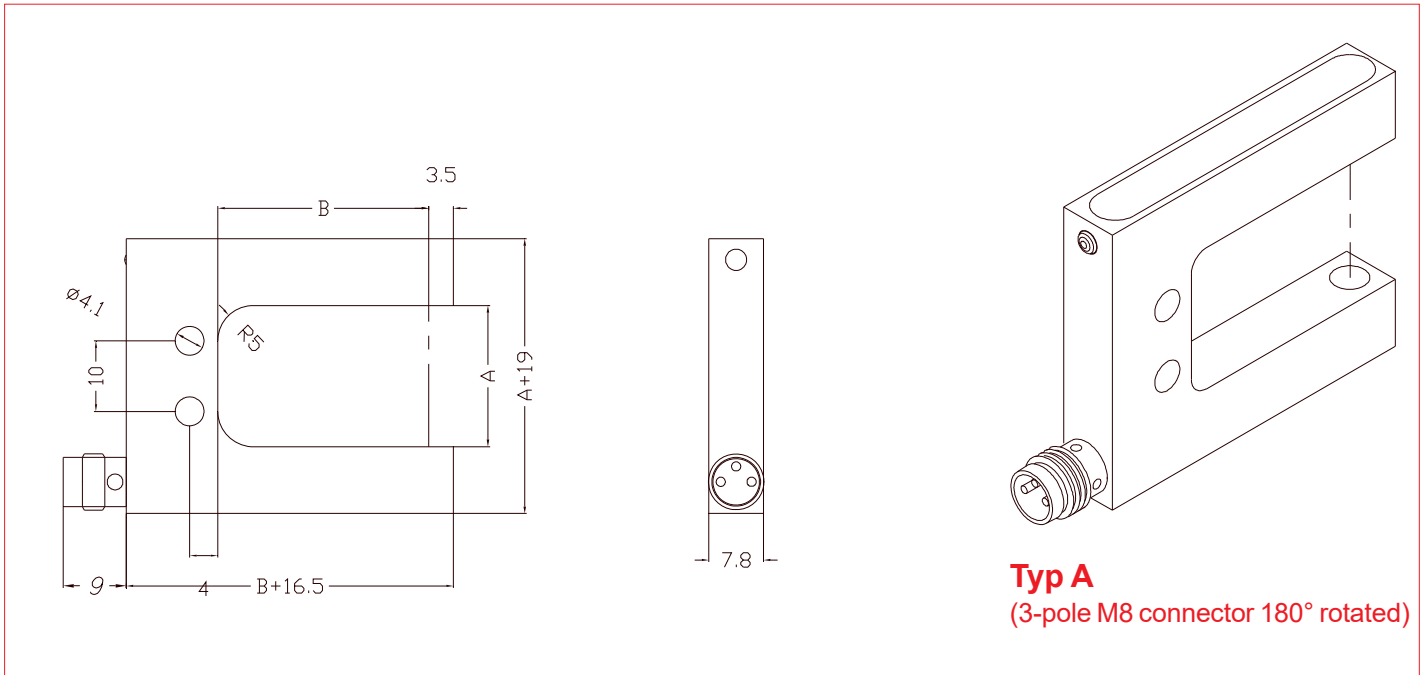
| Type                          | FIA-S-...-IR-TypA                                                                                                                                     |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transmitter                   | IR LED: 905 nm                                                                                                                                        |
| Transmitter/receiver distance | = fork width A                                                                                                                                        |
| Min. detectable object        | depends on fork width A:<br>typ. 0.4 mm with A=10<br>typ. 0.4 mm with A=15<br>typ. 0.5 mm with A=20<br>typ. 0.6 mm with A=25<br>typ. 0.7 mm with A=30 |
| Reproducibility               | typ. 0.01 mm                                                                                                                                          |
| Voltage supply                | +24VDC ( $\pm 10\%$ ), reverse polarity protected                                                                                                     |
| Operation                     | Constant light operation                                                                                                                              |
| Ambient light                 | up to 5000 Lux                                                                                                                                        |
| Type of protection            | IP67                                                                                                                                                  |
| Optical filter                | Daylight block filter                                                                                                                                 |
| Maximum current consumption   | typ. 80 mA                                                                                                                                            |
| Switching state indication    | red/green LED (detection of an object = LED switches from green to red, the LED is coupled to the digital output OUTPUT INV)                          |
| Switching frequency           | typ. 5 kHz                                                                                                                                            |
| Operating temperature range   | -20 °C ... +70 °C                                                                                                                                     |
| Storage temperature range     | -20 °C ... +85 °C                                                                                                                                     |
| Housing material              | Aluminum, anodized in blue                                                                                                                            |
| Housing dimensions            | see page 3                                                                                                                                            |
| Type of connector             | 3-pole M8-connector, metal                                                                                                                            |
| Max. switching current        | 100 mA, overcurrent protected                                                                                                                         |
| EMC test acc. to              | DIN EN 60947-5-2                                                                                                                                      |



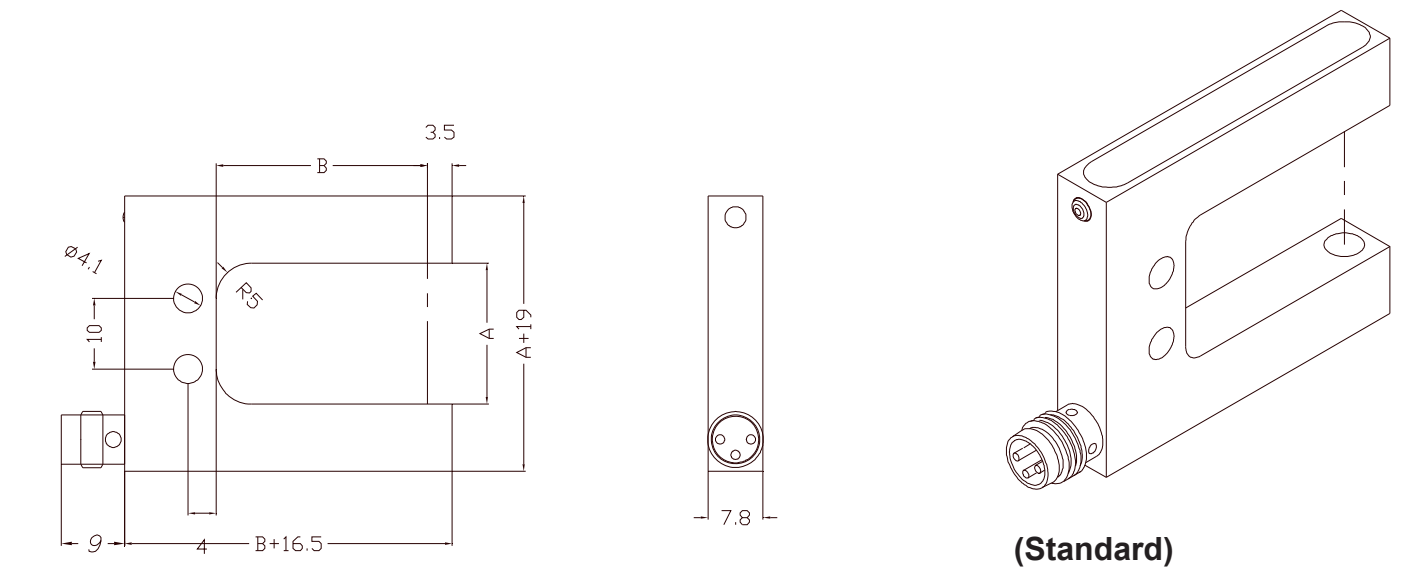
Dimensions

Available fork sizes:

|        |           |           |
|--------|-----------|-----------|
| 10/15: | A = 10 mm | B = 15 mm |
| 10/30: | A = 10 mm | B = 30 mm |
| 15/20: | A = 15 mm | B = 20 mm |
| 20/15: | A = 20 mm | B = 15 mm |
| 20/30: | A = 20 mm | B = 30 mm |
| 20/40: | A = 20 mm | B = 40 mm |
| 25/50: | A = 25 mm | B = 50 mm |
| 25/80: | A = 25 mm | B = 80 mm |
| 30/30: | A = 30 mm | B = 30 mm |
| 30/40: | A = 30 mm | B = 40 mm |



**Typ A**  
(3-pole M8 connector 180° rotated)



**(Standard)**

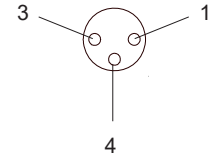
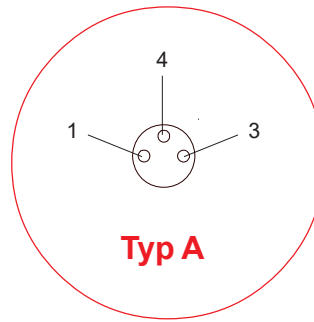
(All dimensions in mm)



**Connector Assignment**

**Connector assignment of 3-pole M8 connector:**

|      |                                                              |
|------|--------------------------------------------------------------|
| Pin: | Assignment:                                                  |
| 1    | +Ub (+24VDC ± 10%)                                           |
| 3    | GND (0V)                                                     |
| 4    | Q: Output (pnp bright-switching / npn dark-switching)        |
|      | <u>or</u>                                                    |
|      | Qinv: Output inv (pnp dark-switching / npn bright-switching) |



Anschlusskabel:  
 cab-M8/3-g-(length)  
 cab-M8/3-w-(length)  
 (Standard length 2m, also available in 5m)



**Connecting Cables**

**Available connecting cable 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)

