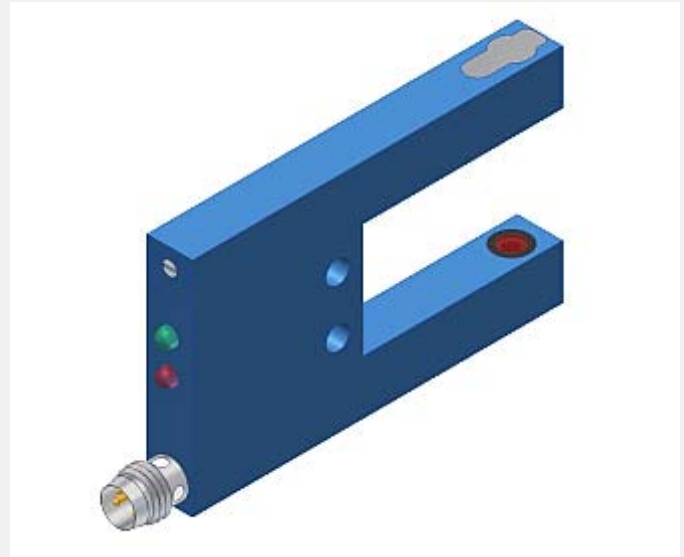


# FIA Series

## ► FIA-DUO-...

- Insensitive to outside light due to optical filter
- Infrared light beam (IR LED 905 nm)
- Various fork sizes
- High resolution
- Switching frequency typ. 5 kHz
- Two trigger signals (output 1 and 2)
- Directional counting due to trigger offset (approx. 0.3 mm)
- Connecting cable oil-resistant
- Compact and sturdy metal housing



### Design

#### Product name:

- FIA-DUO-20/30-NPN
- FIA-DUO-20/30-PNP
- FIA-DUO-25/80-NPN
- FIA-DUO-25/80-PNP

Output (cf. page 4):

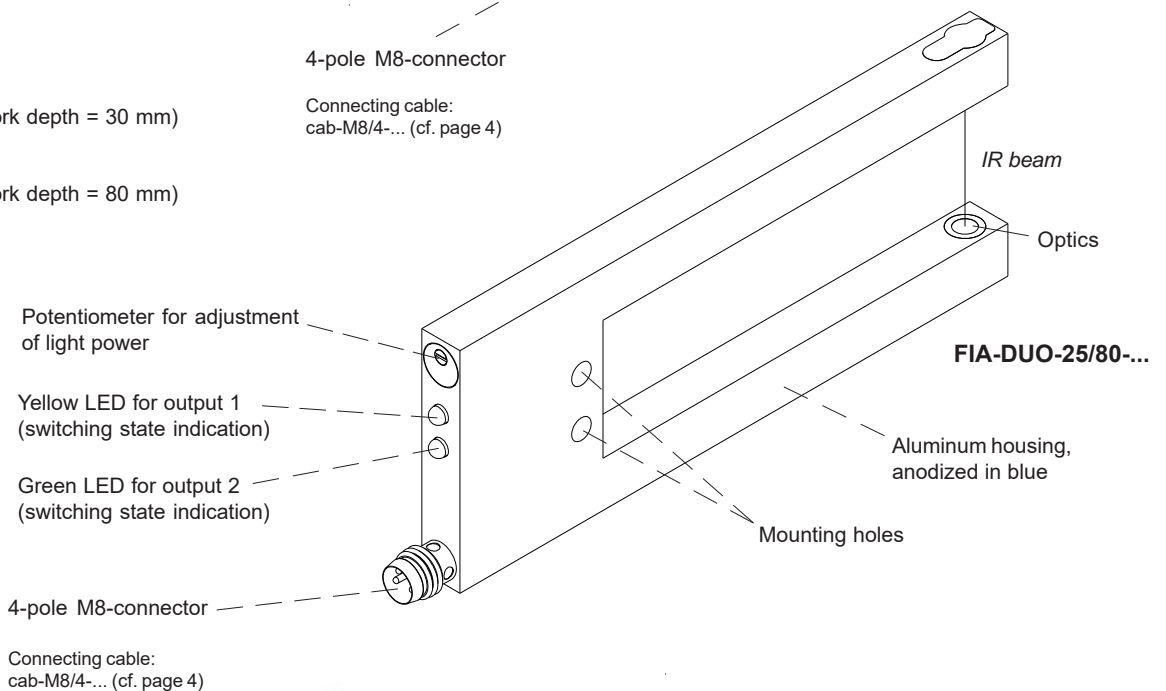
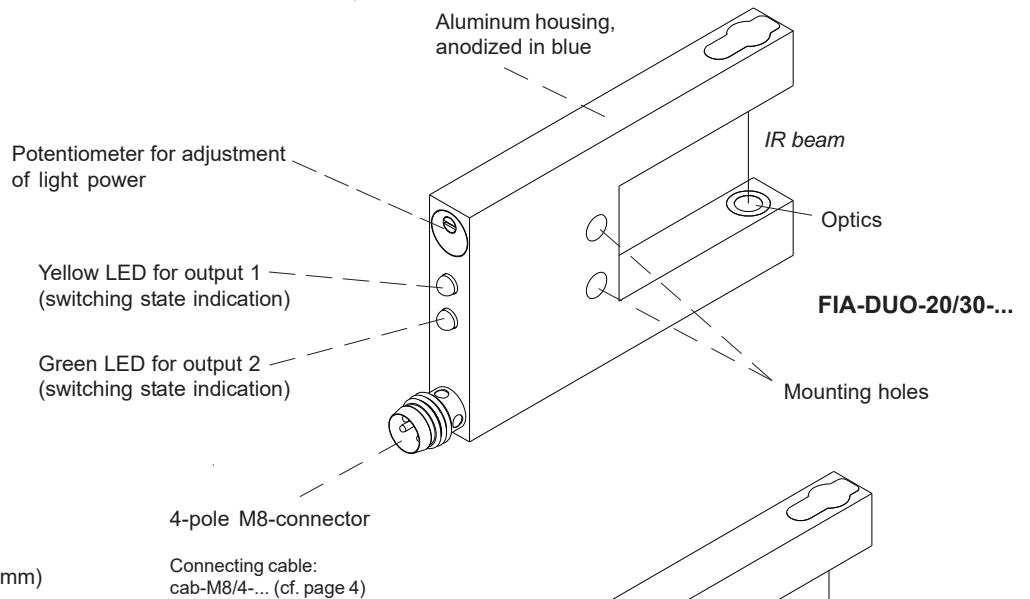
NPN =  bright-switching (24V/0V)

PNP =  dark-switching (0V/24V)

Fork size (cf. page 3):


**20/30**  
(fork width = 20 mm, fork depth = 30 mm)

**25/80**  
(fork width = 25 mm, fork depth = 80 mm)





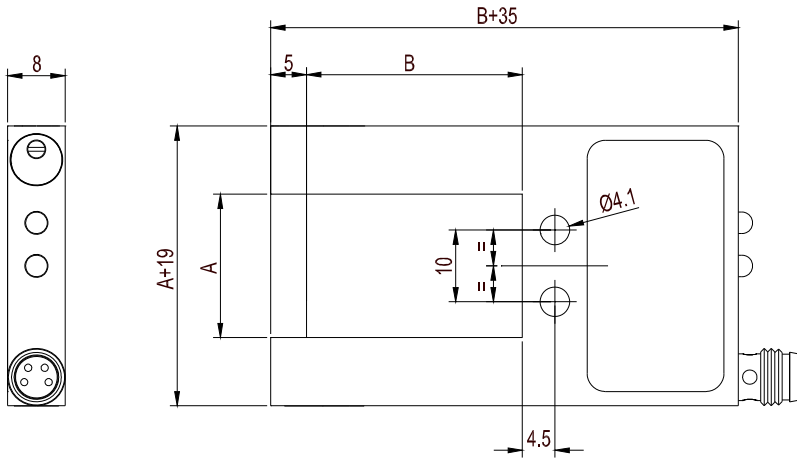
**Technical Data**

Type	FIA-DUO-...
Transmitter	IR LED: 905 nm
Distance transmitter/receiver	equal to fork width A (A=20 mm or A=25 mm)
Aperture of transmitter	typ. Ø 1.0 mm
Min. detectable object	when using FIA-DUO-20/30-... with fork width A=20: typ. Ø 0.5 mm when using FIA-DUO-25/80-... with fork width A=25: typ. Ø 0.6 mm
Beam divergency	typ. 0.3 mm (of output 1 and output 2)
Reproducibility	typ. 0.01 mm
Optical filter	Day light block filter
Constant light operation	yes
Enclosure rating	IP67
Voltage supply	+24VDC (± 10%), reverse polarity protected
Max. current consumption	typ. 80 mA
Switching state indication	yellow LED on: output 1 covered green LED on: output 2 covered
Adjustment of transmitter power	by means of potentiometer (3 rotations), rotation clockwise: increase of IR power
Switching output	NPN = bright-switching (24V/0V): if output is covered, signal switches from high (24V) to low (0V) PNP = dark-switching (0V/24V): if output is covered, signal switches from low (0V) to high (24V)
Switching frequency	typ. 5 kHz
Operating temperature range	-20°C ... +60°C
Storage temperature range	-20°C ... +85°C
Housing material	aluminum, anodized in blue
Housing dimensions	cf. page 3
Type of connector	4-pole M8 connector
Max. switching current	100 mA, short-circuit proof
EMC test acc. to	DIN EN 60947-5-2 

Dimensions

FIA-DUO-20/30:

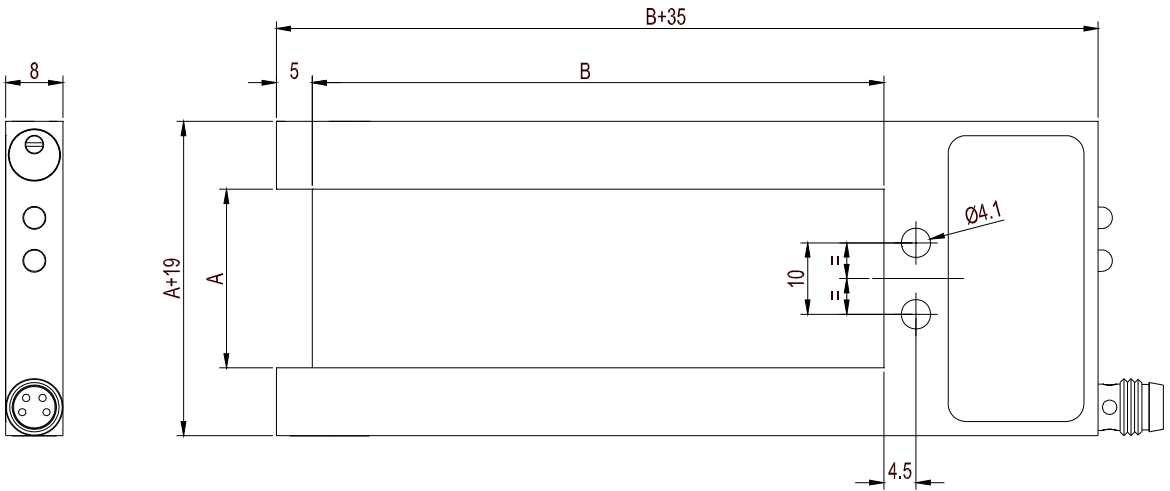
A = 20 mm  
B = 30 mm



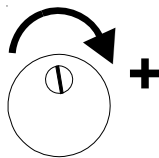
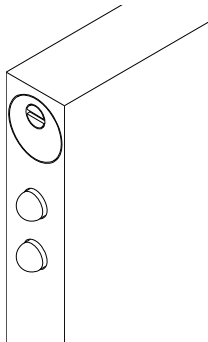
All dimensions in mm

FIA-DUO-25/80:

A = 25 mm  
B = 80 mm



Setting



Adjustment of potentiometer (3 revolutions):

Potentiometer for adjustment of transmitting power:  
Rotation clockwise: Increase of IR-power



LED yellow for switching state indication (output 1)  
LED yellow: Output 1 covered



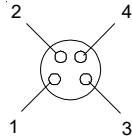
LED green for switching state indication (output 2)  
LED green: Output 2 covered

Connector Assignment

FIA-DUO-...-NPN:

4-pole M8 connector:

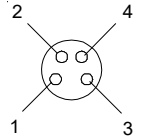
Pin:	(Color)	Assignment:
1	(brn)	+Ub (+24VDC ± 10%)
2	(wht)	Output 1 ▾ (24V/0V)
3	(blu)	0V (GND)
4	(blk)	Output 2 ▾ (24V/0V)



FIA-DUO-...-PNP:

4-pole M8 connector:

Pin:	(Color)	Assignment:
1	(brn)	+Ub (+24VDC ± 10%)
2	(wht)	Output 1 ▲ (0V/24V)
3	(blu)	0V (GND)
4	(blk)	Output 2 ▲ (0V/24V)



NPN bright-switching:

When output is covered: signal changes from HIGH (24V) to LOW (0V)

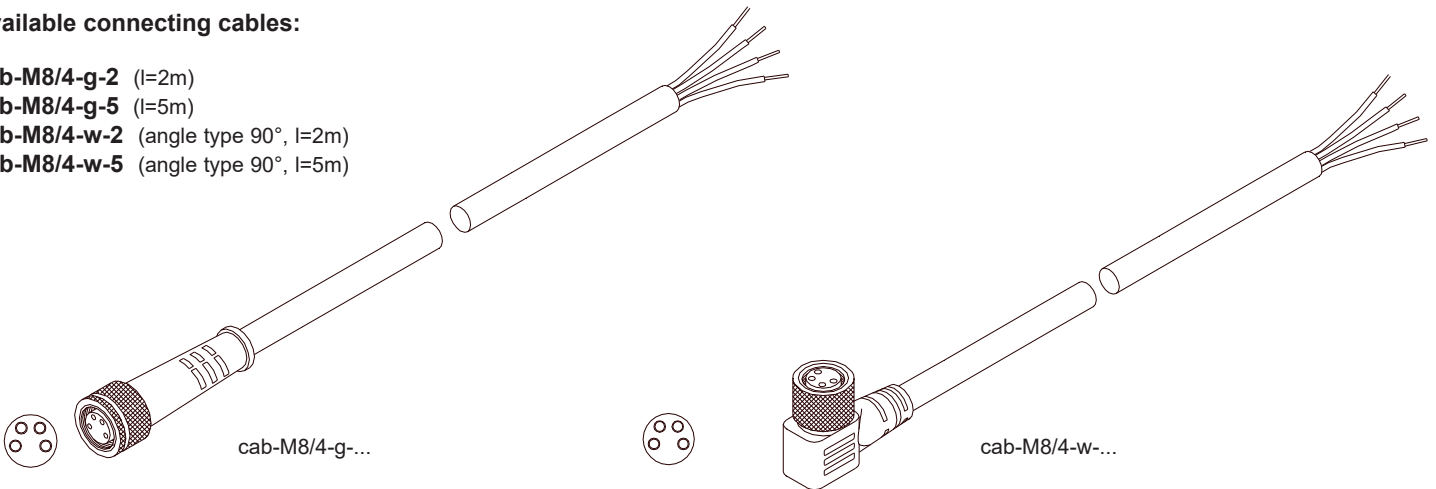
PNP dark-switching:

When output is covered: signal changes from LOW (0V) to HIGH (24V)

Connecting Cable

Available connecting cables:

- cab-M8/4-g-2** (l=2m)
- cab-M8/4-g-5** (l=5m)
- cab-M8/4-w-2** (angle type 90°, l=2m)
- cab-M8/4-w-5** (angle type 90°, l=5m)



Application Example

