

Fork light barriers AOPF / AOPFL Series

- Simple and quick mounting
- Detection of smallest parts
- Fork widths 30 - 120mm
- High switching frequency up to 4kHz
- Water proof, IP 67, robust
- Versions with red light and laser light as well
- Customised versions available



Technical data		AOPF 30	AOPF 50	AOPF 80	AOPF 120	AOPFL ...
Fork width	mm	30	50	80	120	30 - 20
Power supply voltage	VDC			10 - 35		
Emitted light	-		Red light 660nm, clocked			Red light laser class 2
Output	-		PNP, NO/NC switchable			
Status indicator	-		LED yellow			
Output current	mA		max. 200, short circuit proof			
Mean consumption	mA		<30			
Voltage drop	V		<2.8			
Switching speed	kHz	4	4	4	2	3
Resolution, smallest object	mm	0.5	0.5	0.5	0.8	0.05
Sensitivity	-	adjustable with pot. or with teach-in on object			adjustable with pot.	
Hysteresis	mm		0.25			0.02
Reproducibility	mm	0.02	0.04	0.06	0.06	0.01
Ambient temperature	°C		-10°C min 60°C max			5°C min 45°C max
Ambient light immunity	Lx	80'000	80'000	80'000	50'000	100'000
Insulation voltage endurance	V		500			250
Protection class	-		IP67			
Housing material	-		Zinc die-cast, black lacquered			Alu, black elox.
Electrical connection	-		M8 connector 3 pin			

Standard versions

Fork width	Type red light with pot.	Type red light with teach-in	Type laser light with pot.
30mm	AOPF 30 PA 24 C	AOPF 30 TA 24 C	AOPFL 30 PA 24 C
50mm	AOPF 50 PA 24 C	AOPF 50 TA 24 C	AOPFL 50 PA 24 C
80mm	AOPF 80 PA 24 C	AOPF 80 TA 24 C	AOPFL 80 PA 24 C
120mm	AOPF 120 PA 24 C		AOPFL 120 PA 24 C

Description

Fork light barriers have several advantages compared to standard barriers. Transmitter and receiver are perfectly aligned. Mounting is therefore very easy. There is no mechanical misalignment possible after mounting. Furthermore each version of fork width is optimized in light intensity, sensitivity and measuring frequency. Thus fork light barriers have a high resolution and reproducibility. They are ideally suited for detection of small parts and for precise edge detection.

The versions with laser instead of red light are even approx. 10 times more precise.

Model selection

Various fork widths are available from 30 - 120mm. Smaller or larger widths are available on demand. Each fork width is available with red light (AOPF) or with laser light (AOPFL).

Function

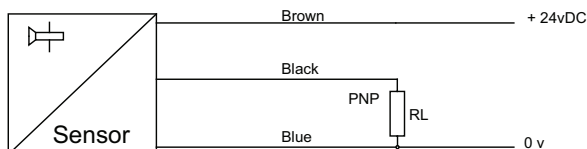
Fork light barriers have a transmitter and a receiver, each mounted in one side of the fork housing. The transmitter beam is focused to the receiver. If the receiver detects the light beam, the output of the receiver becomes active. If the light beam is interrupted, the receiver output gets disabled. The output signal can be set for NO (switching on dark) or NC (switching on bright) function. The status of the output signal is shown with the LED integrated in the M8 connector. The LED lights up when the output is active.

Mounting

Mounting happens with M4 screws. Parasitic light focussed directly into the receiver should be avoided.

Electrical connection

The electrical connection is done with a 3-pin cable with M8 connector.



Control elements

Detection sensitivity (versions with potentiometer):

The detection sensitivity is adjusted with the potentiometer furthest from the connector. Turning clockwise will increase the sensitivity allowing smaller parts to be detected. The radiated light power is lowest.

Turning anti-clockwise will decrease the sensitivity allowing only larger objects to be detected. The radiated light power is highest. In this setting the fork barrier has its highest pollution margin.

Teach-In:

When using teach in versions the yellow teach button has to be pressed for min. 2s, until the teach LED is flashing. Then guide the object to be detected past the sensor several times (min. 2x). When the sensor has been taught, the LED stops flashing, and the connector LED flashes twice.

Output function:

The output function (NO or NC) can be selected with the rotational switch which is closest to the connector. This switch shall always be either at the left or the right stop:

- Left stop = NO
- Right stop = NC



NO/NC Sens.

The fork light barriers are configured as standard with NO output. The potentiometer for output function is covered with a rubber cap. For switching the function the cap has to be removed with a small screw driver.

Cable

The fork barriers have a 3 pin M8 connector for screw mounting. Cables with M8 connector fitted are available separately.

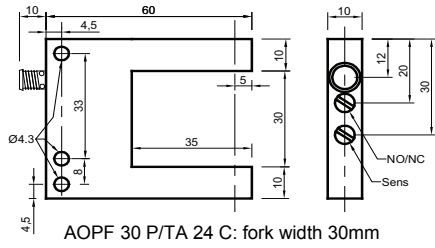
Accessories (see also data sheet („ACC“))

PUR cable 3-pin with M8 screw connector

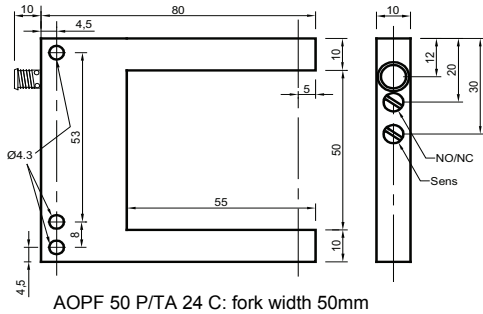
with straight connector: l=2m Type KAB 2K3VGPUR
 l=5m Type KAB 5K3VGPUR
 with 90° connector: l=2m Type KAB 2K3VWPUR
 l=5m Type KAB 5K3VWPUR

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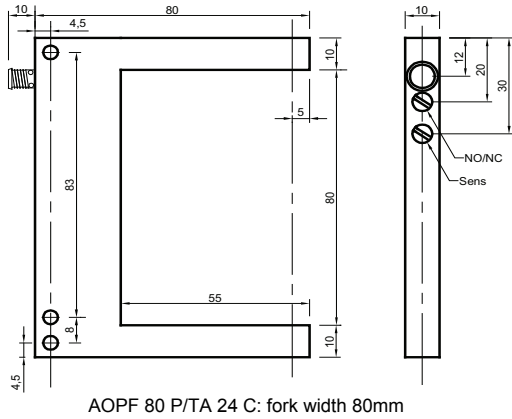
Dimensions red light fork barrier AOPF



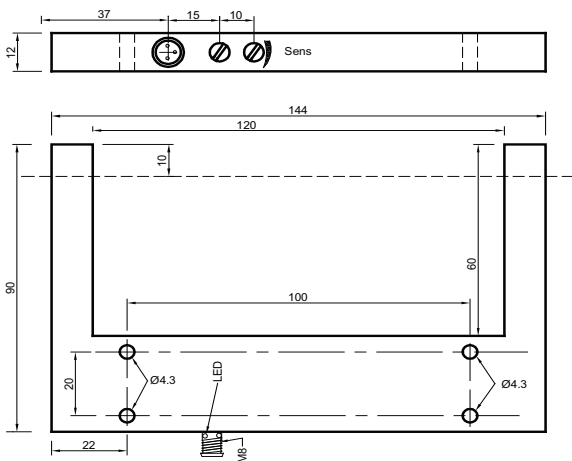
AOPF 30 P/TA 24 C: fork width 30mm



AOPF 50 P/TA 24 C: fork width 50mm

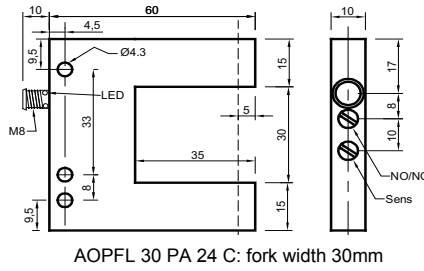


AOPF 80 P/TA 24 C: fork width 80mm

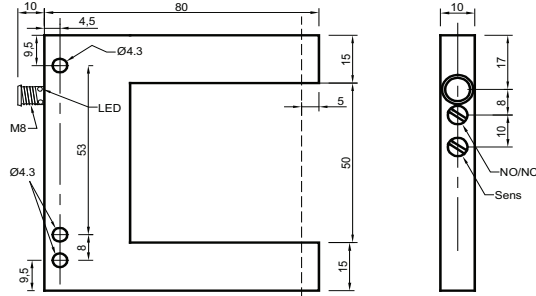


AOPF 120 P/TA 24 C: fork width 120mm

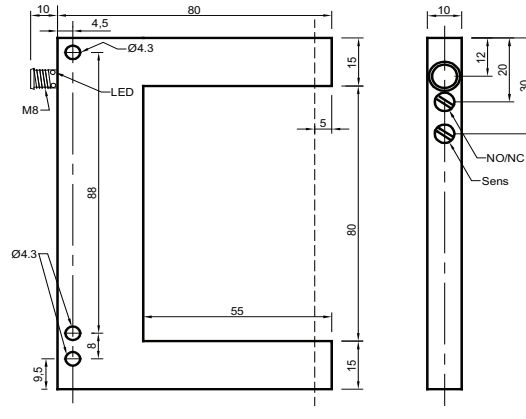
Dimensions laser fork barrier AOPFL



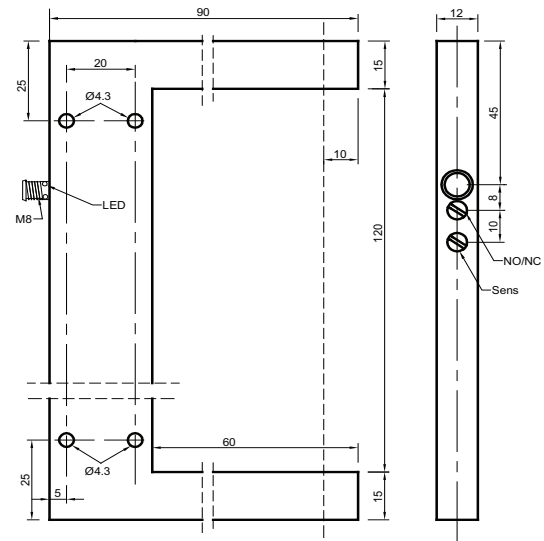
AOPFL 30 PA 24 C: fork width 30mm



AOPFL 50 PA 24 C: fork width 50mm



AOPFL 80 PA 24 C: fork width 80mm



AOPFL 120 PA 24 C: fork width 120mm