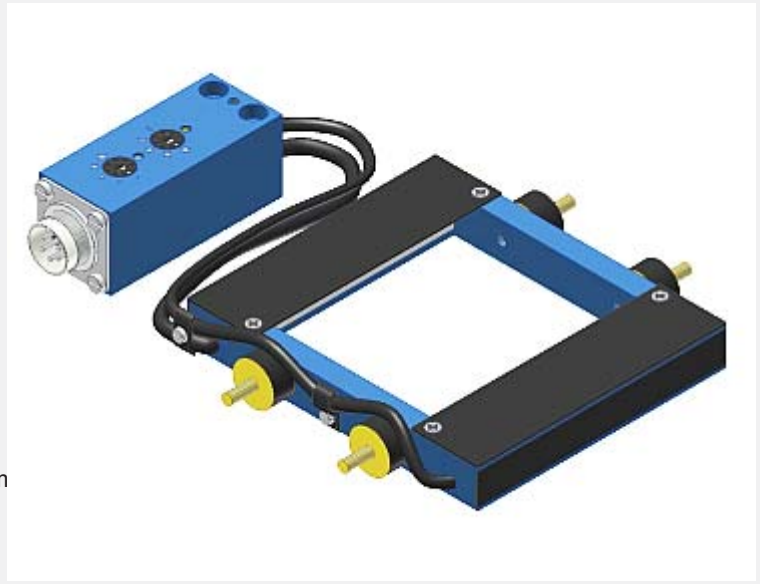


# FLB Series

## ► FLB-FR3-...

- Electronics integrated in tool plug
- High sensitivity (adjustable via 5-step switch)
- Switching frequency typ. 1 kHz
- Pulse length adjustable via 5-step switch
- 2 dynamic outputs Q and Qinv
- Switching state indication by means of a red/green LED
- Dirt accumulation indication by means of a yellow LED
- Various frame sizes available (light curtain 58 mm ... 198 mm)
- Mechanical protection of optics by means of baffle plate
- Sturdy aluminum housing



## Design

### Product name:

### FLB-FR3-(frame size A/B)

#### Available frame sizes A/B (mm):

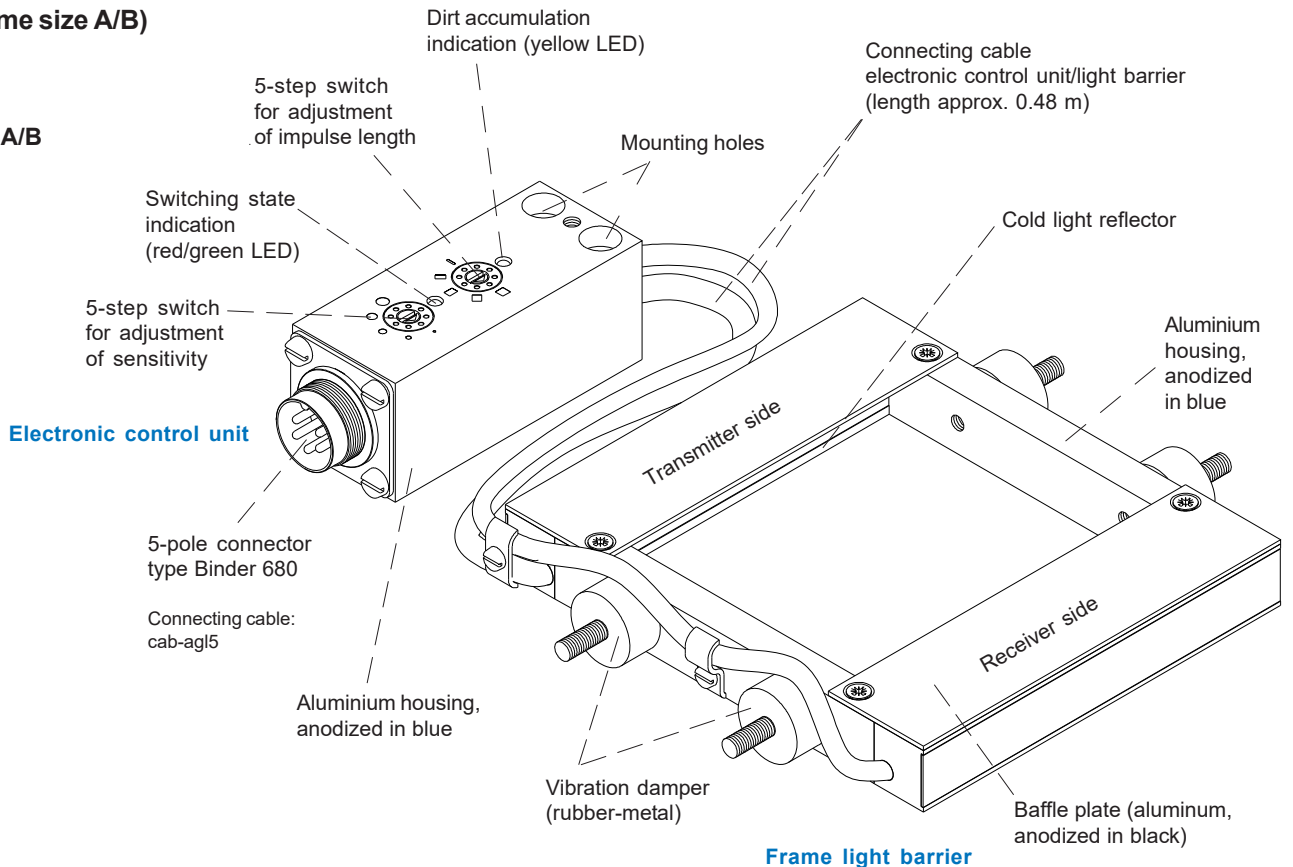
58/60  
58/80  
58/100  
58/160  
58/200

78/60  
78/80  
78/100  
78/160  
78/200

98/60  
98/80  
98/100  
98/160  
98/200

158/60  
158/80  
158/100  
158/160  
158/200

198/60  
198/80  
198/100  
198/160  
198/200



**A = 58 / 78 / 98 / 158 / 198 mm** (width of cold light reflector)  
**B = 60 / 80 / 100 / 160 / 200 mm** (distance between transmitter and receiver)  
 (A can be combined with any B)



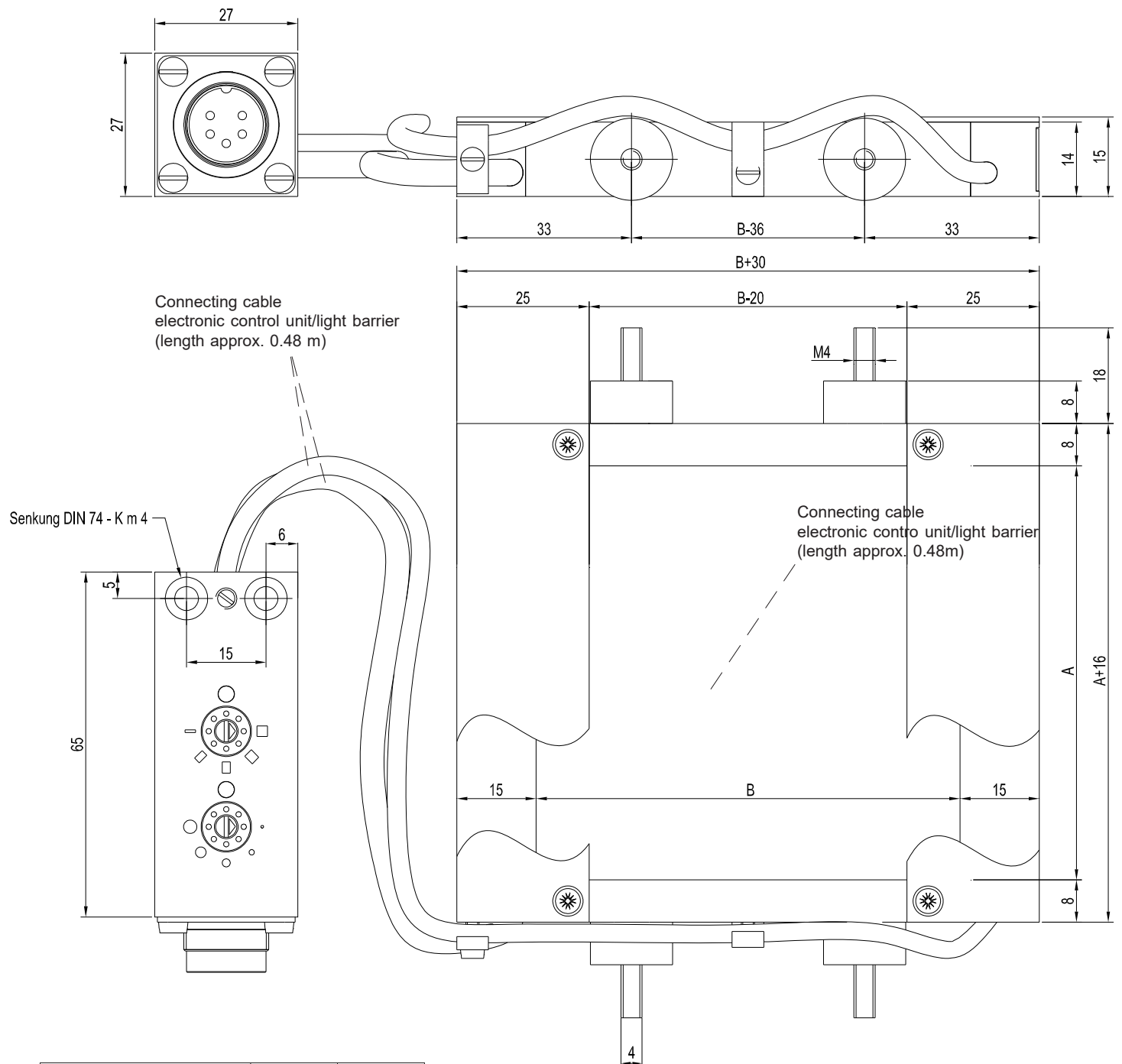


**Technical Data**

Model	FLB-FR3-...
Max. transmitter/ receiver distance	200 mm
Min. detectable object	with dim. A = 58, 78, 98 mm: typ. 0.3 mm with dim. A = 158 mm: typ. 0.5 mm with dim. A = 198 mm: typ. 0.7 mm
Digital outputs	1x DYN (Q), 1x INV DYN (Qinv)
Optical filter	Cold-light reflector
Light type	Infrared
Voltage supply	+12VDC ... +32VDC, protected against polarity reversal, overload protected
Pulsating light operation	approx. 5 kHz
Ambient light	up to 5000 Lux
Type of protection	IP67
Current consumption	200 mA
EMC test acc. to	DIN EN 60947-5-2
Connector type	5-pole connector, Binder Series 680
Connecting cable control unit/light barrier	length approx. 0.48 m
Operating temperature range	-20°C ... +60°C
Storage temperature range	-20°C ... +85°C
Housing	Aluminum, anodized in blue
Max. switching current	200 mA, short-circuit-proof
Switching frequency	typ. 1 kHz
Sensitivity setting	in 5 steps by means of step switch
Pulse lengthening	in 5 steps by means of step switch (20 ms ... 300 ms)
Dirt accumulation display	By means of yellow LED
Switching state display	By means of bi-color LED: RED (object passes light curtain) / GREEN (light curtain free, or no change)

Dimensions

FLB-FR3-(frame size):



Product name:	A	B
FLB-FR3-58/B	58	
FLB-FR3-78/B	78	
FLB-FR3-98/B	98	*B
FLB-FR3-158/B	158	
FLB-FR3-198/B	198	

\*B = 60/80/100/160/200

(All dimensions in mm)



**Connector Assignment**

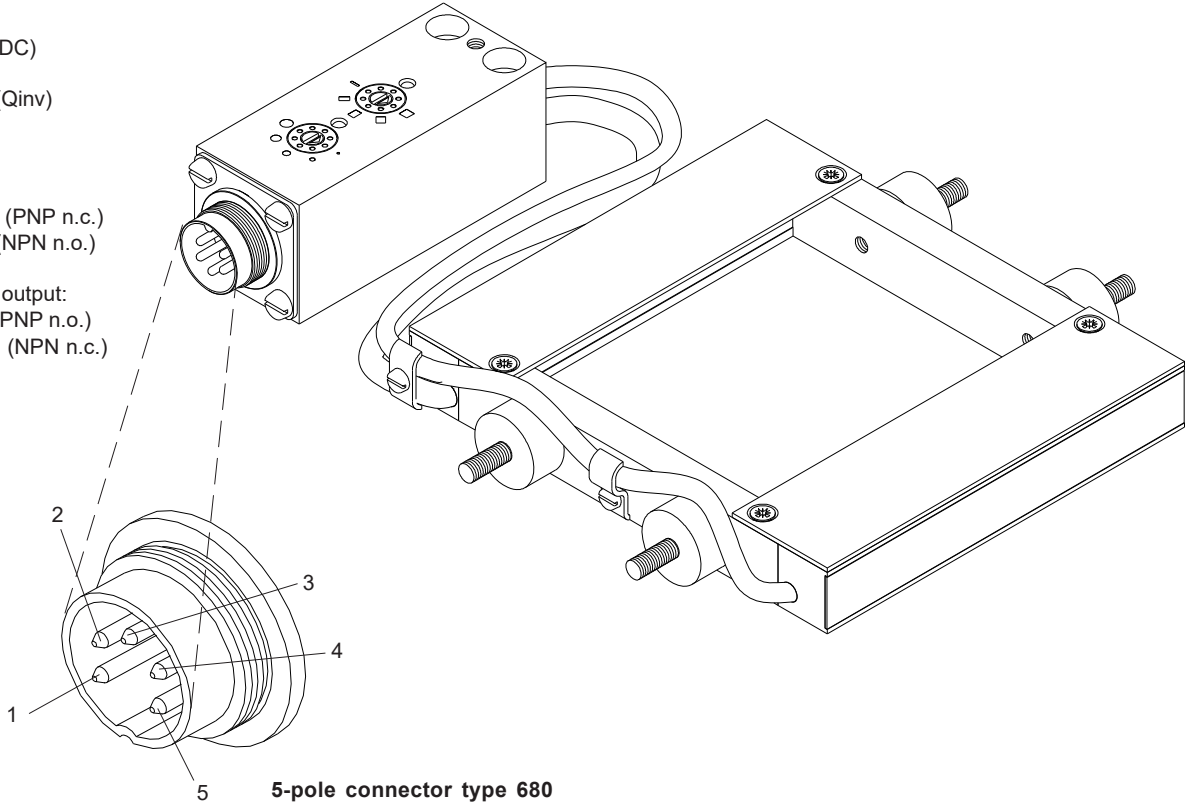
**Connector assignment FLB-FR3:**

**5-pole connector type Binder 680**

Pin No.:	Assignment:
1	GND (0V)
2	+U <sub>B</sub> (+12 ... +32VDC)
3	Output DYN (Q)
4	Output INV DYN (Qinv)
5	GND (0V)

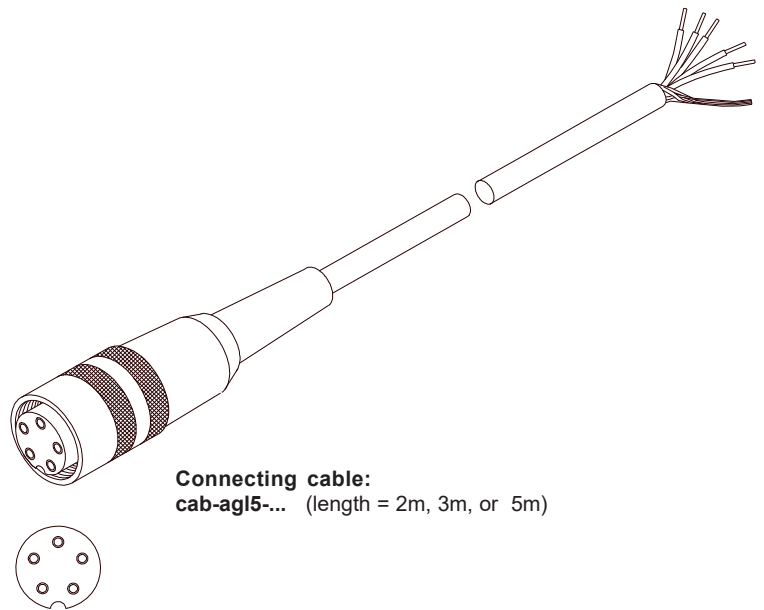
Q = Switching output:  
 PNP bright-switching (PNP n.c.)  
 NPN dark-switching (NPN n.o.)

Qinv = Additional switching output:  
 PNP dark-switching (PNP n.o.)  
 NPN bright-switching (NPN n.c.)



**Connecting cable cab-agl5-(length)**

Pin-No.:	Color:	Assignment:
1	blue	GND (0V)
2	brown	+U <sub>B</sub> (+12 ... +32VDC)
3	white	Output DYN (Q)
4	black	Output INV DYN (Qinv)
5	red	GND (0V)

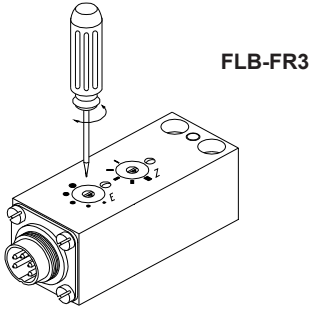




Setting

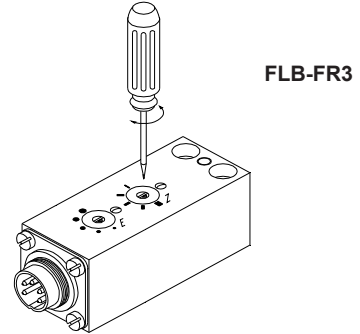
**Sensitivity setting (step-switch „E“):**

Sensitivity can be adjusted by means of a step-switch. The term 'sensitivity' defines the minimum detectable part size. The sensitivity can be adjusted in 5 steps.



**Adjustment of pulse lengthening (step-switch „Z“):**

The pulse length of the dynamic output can be adjusted by means of a step-switch. 5 pulse lengths are available.

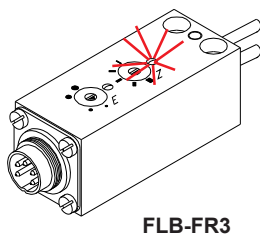


Step	Part size (dyn.)
	1 $\geq 0.5$ mm
	2 $\geq 0.7$ mm
	3 $\geq 1.3$ mm
	4 $\geq 1.7$ mm
	5 $\geq 2.5$ mm

Step	Pulse length
	1     300 ms
	2     200 ms
	3     100 ms
	4     50 ms
	5     20 ms

**Dirt accumulation display (yellow LED):**

In addition to a digital dirt accumulation output the user is informed about the dirt accumulation status by means of a yellow LED. If this yellow LED lights up, the transmitter or receiver side should be checked for dirtying.



**Switching state display (red/green LED):**

The switching state is indicated by a red/green LED. In case that a measuring object is detected, the LED changes from GREEN to RED. The two-color-LED is coupled to the dynamic output, i.e. after pulse end the LED returns to its starting state = GREEN.

