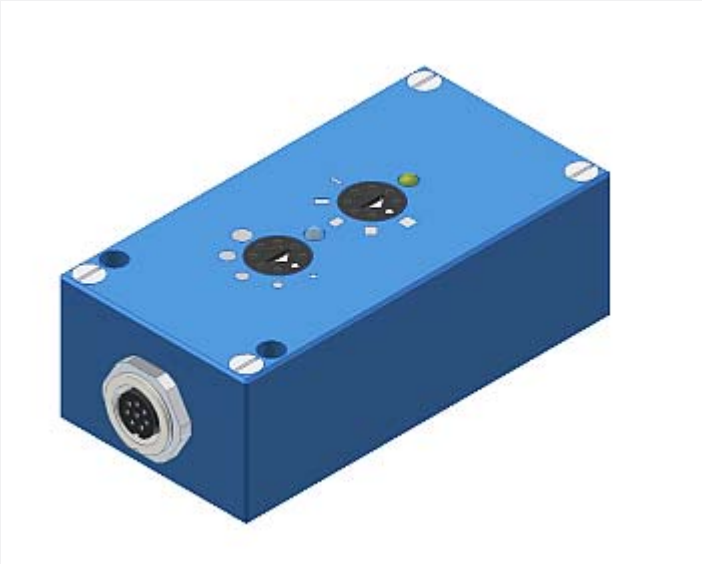
FLB Series

FLB-CON1-15kHz Electronic control unit



- Suitable for FLB-F, FLB-H, FLB-V sensors (FLB Series) as well as for FKB-...-P and SLB-...-P sensors (TLB Series)
- Detection of smallest objects (starting from 100 µm)
- Analog output (0V ... +10V) available (version -ANA)
- Adjustment of sensitivity and pulse length by means of 5-step switches
- Switching state indication by means of red/green LED
- Dirt accumulation indication by means of yellow LED
- Switching frequency typ. 15 kHz

Design

Product name:

FLB-CON1-Q-15kHz
FLB-CON1-Qinv-15kHz
FLB-CON1-Q-ANA-15kHz
FLB-CON1-Qinv-ANA-15kHz

Please note:
The frame light barriers FLB-F-50/..., FLB-F-60/60, FLB-F-100/100, FLB-H-50, FLB-V-50, FLB-V-60, FLB-V-100 are not suitable for use with FLB-CON1-...

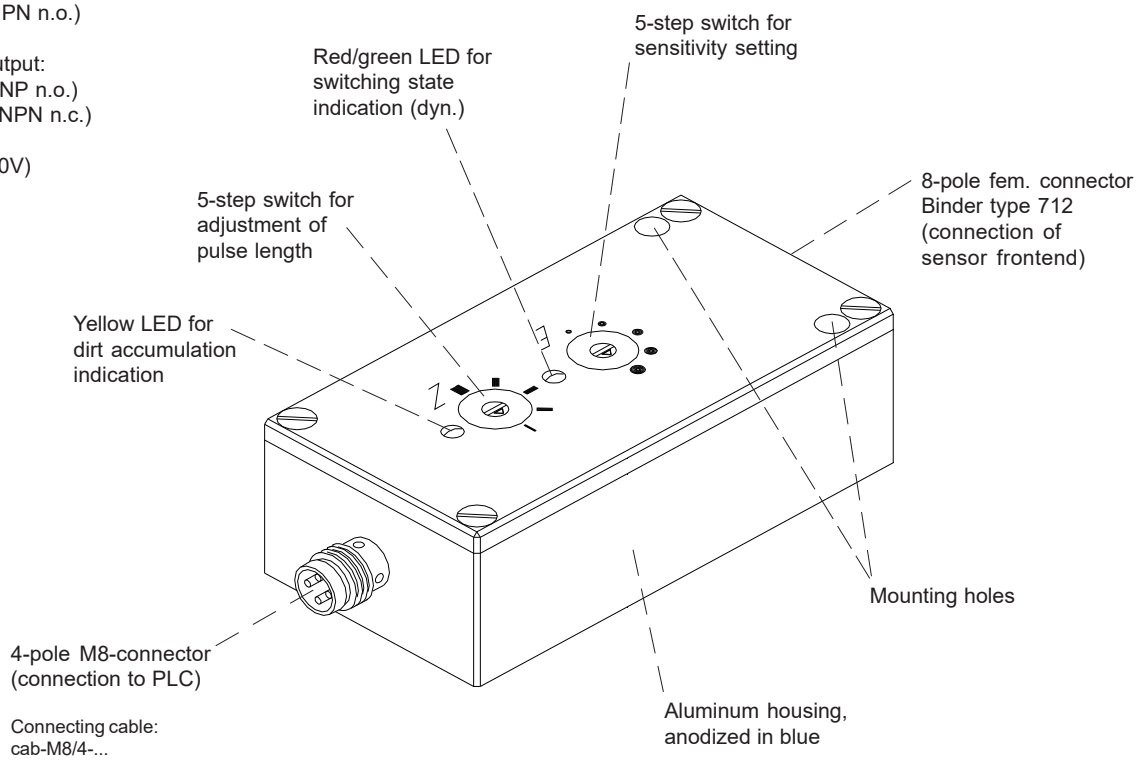
Q = Switching output:
PNP bright-switching (PNP n.c.)
NPN dark-switching (NPN n.o.)

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

ANA = Analog output (0 ... +10V)

Suitable for the connection of sensor frontends of type:

FLB-F-...
FLB-H-...
FLB-V-...
FKB-...-P
SLB-...-P

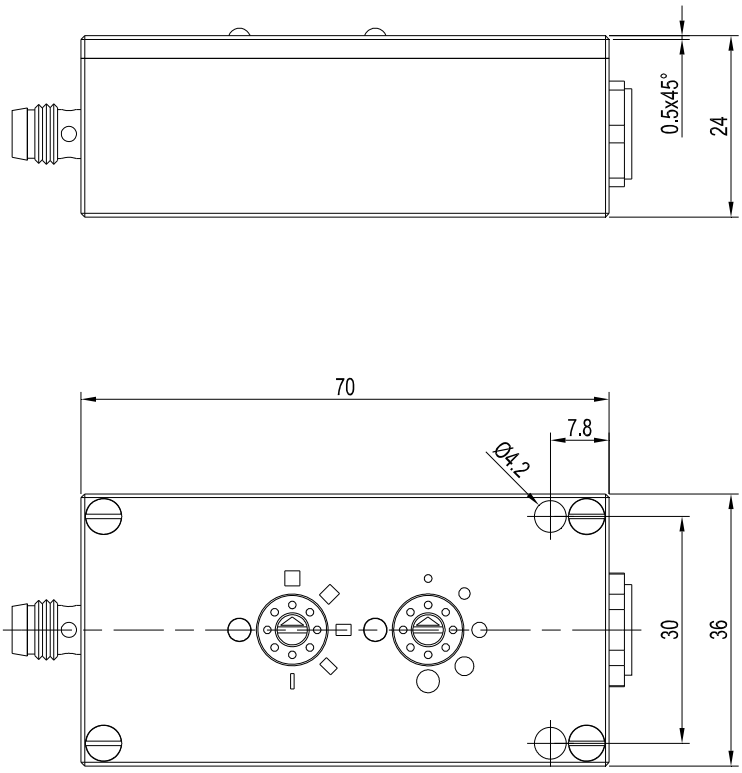


100 % reparierbar/ reparable* * ausgenommen Totalschaden/ excluding total loss

Technical Data

Model	**FLB-CON1-15kHz**
Voltage supply	+12VDC ... +32VDC, reverse-polarity protected, overcurrent protected
Current consumption	with sensor: typ. 80 mA
Operating temperature range	-20°C ... +60°C
Storage temperature range	-20°C ... +85°C
Housing dimensions	LxWxH approx. 70 mm x 36 mm x 24 mm
Housing material	Aluminum, anodized in blue
Enclosure rating	IP 64
Digital output	Q: PNP bright-switching (PNP n.c.), NPN dark-switching (NPN n.o.) / Qinv: PNP dark-switching (PNP n.o.), NPN bright-switching (NPN n.c.)
Analog output	optional (0V ... +10V)
Dirt accumulation indication	by means of a yellow LED
Switching state indication	by means of a bicolor LED (red/green): red: Object passes through light curtain green: Light curtain is free (respectively no change)
Pulse lenghtening	in 5 steps by means of step switch (20 ms ... 300 ms)
Sensitivity setting	in 5 steps by means of step switch
Type of connector	4-pole M8-connector (connection to PLC)
Switching frequency	typ. 15 kHz
Max. switching current	200 mA, short circuit proof
EMC test acc. to	DIN EN 60947-5-2 CE

Dimensions



(All dimensions in mm)

Connector Assignment

Connector assignment for FLB-CON1-15kHz:

4-pole M8-connector
(connection to PLC)

Pin No.:	Assignment:	Color:
1	+Ub (+12VDC ... +32VDC)	brown
2	**with FLB-CON1-Q-15kHz:** n.c.	white
	with FLB-CON1-Qinv-15kHz: n.c.	
	with FLB-CON1-Q-ANA-15kHz: ANALOG (0V ... +10V)	
	with FLB-CON1-Qinv-ANA-15kHz: ANALOG (0V ... +10V)	
3	GND (0V)	blue
4	**with FLB-CON1-Q-15kHz:** Output DYN	black
	with FLB-CON1-Qinv-15kHz: Output INV DYN	
	with FLB-CON1-Q-ANA-15kHz: Output DYN	
	with FLB-CON1-Qinv-ANA-15kHz: Output INV DYN	

8-pole female connector Binder series 712
(connection to FLB-F, FLB-H, FLB-V, TLB, SIA)

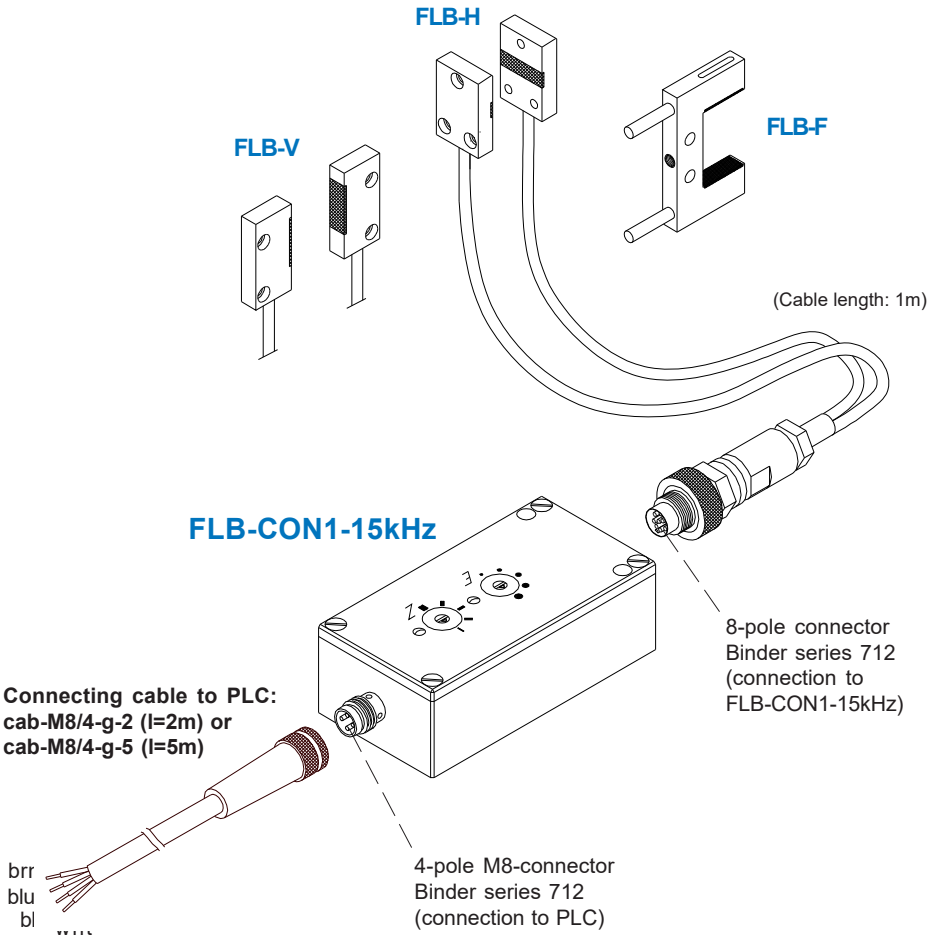
Pin No.:	Assignment:
1	Shield
2	Shield
3	Transmitter anode
4	Phototransistor collector
5	Transmitter cathode 1
6	Phototransistor emitter
7	Transmitter cathode 2
8	n.c.

Please note:
The frame light barriers FLB-F-50/..., FLB-F-60/60, FLB-F-100/100, FLB-H-50, FLB-V-50, FLB-V-60, FLB-V-100 are not suitable for use with FLB-CON1-...

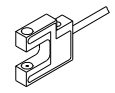
Connecting Diagram

For connection to electronic control unit FLB-CON1-...-15kHz, the following sensor frontends are suitable:

Please note:
The frame light barriers FLB-F-50/..., FLB-F-60/60, FLB-F-100/100, FLB-H-50, FLB-V-50, FLB-V-60, FLB-V-100 are not suitable for use with FLB-CON1-...



FKB-06-...-P



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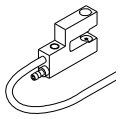
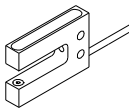


FKB-08-...-P



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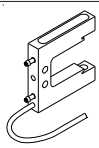
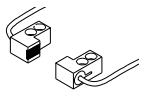


SLB-01-P



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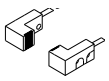

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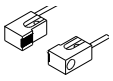
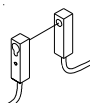


SLB-04-P



SLB-05-P



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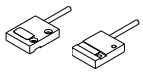
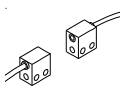


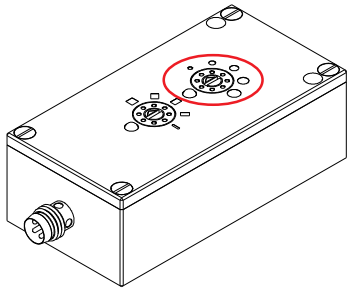
SLB-08-P



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.

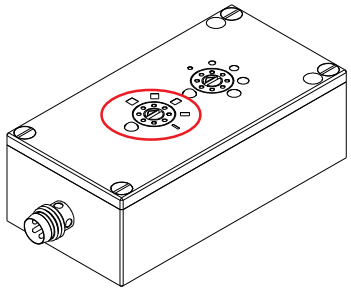


FLB-CON1-15kHz
(step switch)

Step	Part size (dynamic)	Part size (static)
1	>= 0.5 mm	>= 2 mm
2	>= 0.7 mm	>= 3 mm
3	>= 1.3 mm	>= 5 mm
4	>= 1.7 mm	>= 7 mm
5	>= 2.5 mm	>= 10 mm

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.

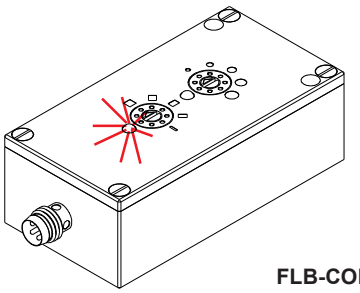


FLB-CON1-15kHz
(step switch)

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

Dirt accumulation display (yellow LED):

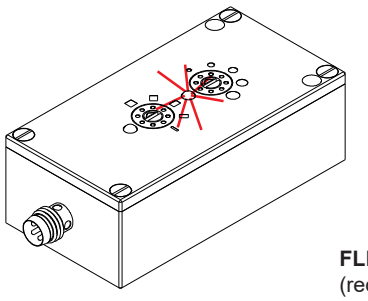
The user is informed about the dirt accumulation status by means of a yellow LED. If this yellow LED lights up, the transmitter or receiver side should be checked for dirtying.



FLB-CON1-15kHz
(yellow LED)

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.



FLB-CON1-15kHz
(red/green LED)