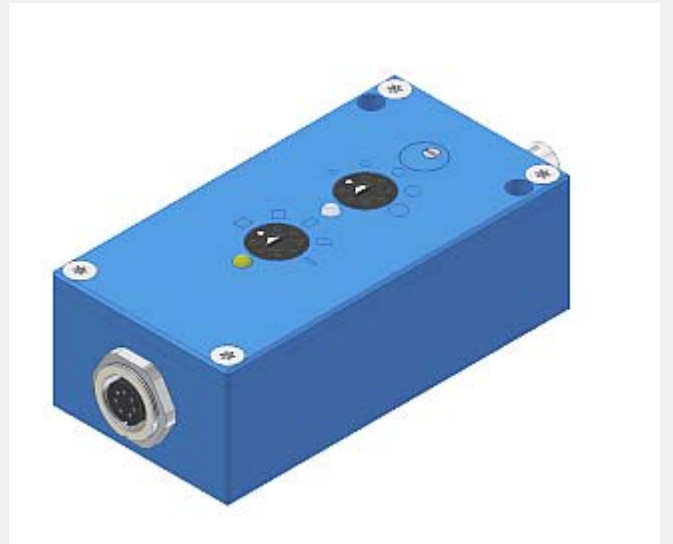


A-LAS Series

▶ AGL-DIF Electronic control unit

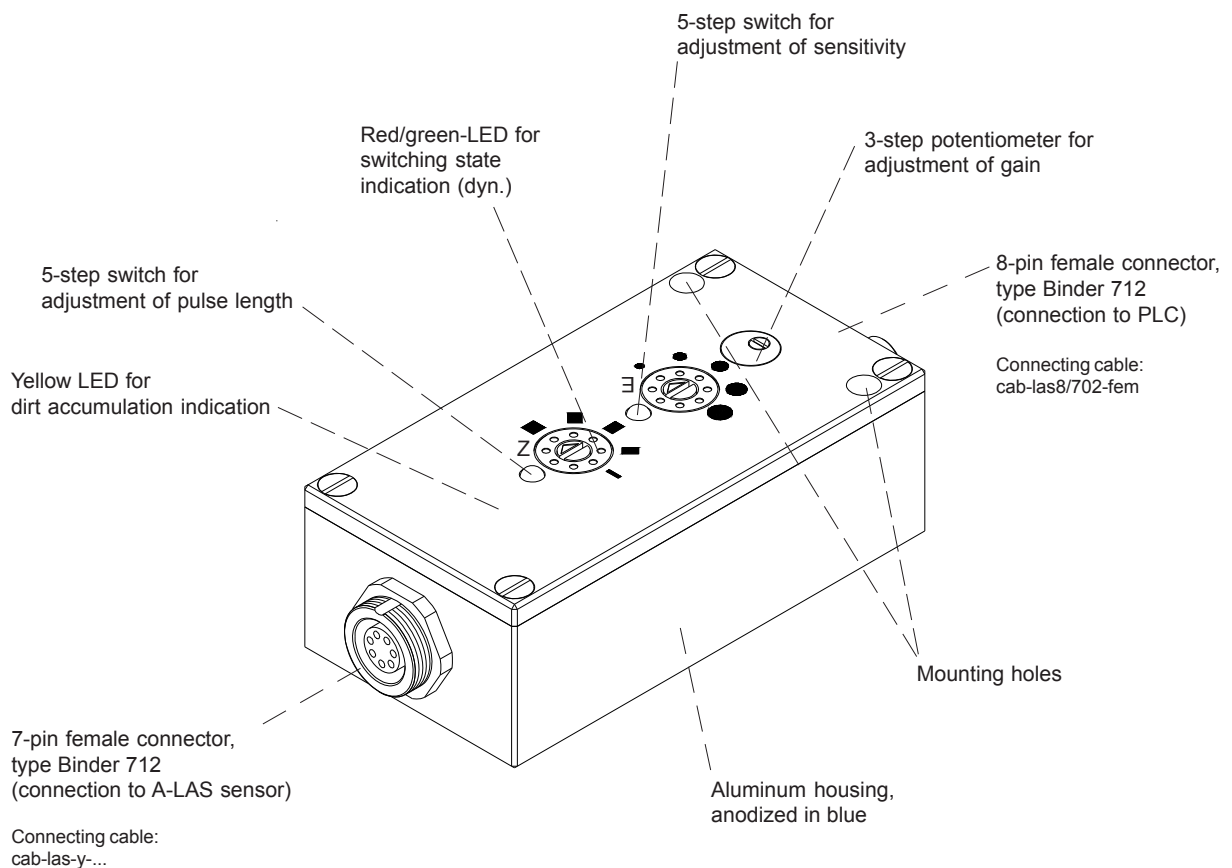
- Detection of local damages at moved objects
- For use with A-LAS sensor
- Digital output dynamic (8 ms ... 300 ms)
- High switching frequency (typ. 25 kHz)
- Analog output (0V ... +10V)
- Detection of smallest objects (ab 10 μm)
- Dirt accumulation indication and compensation
- Switching state indication dynamic
- Differential evaluation (independent of intensity)



Design

Product name:

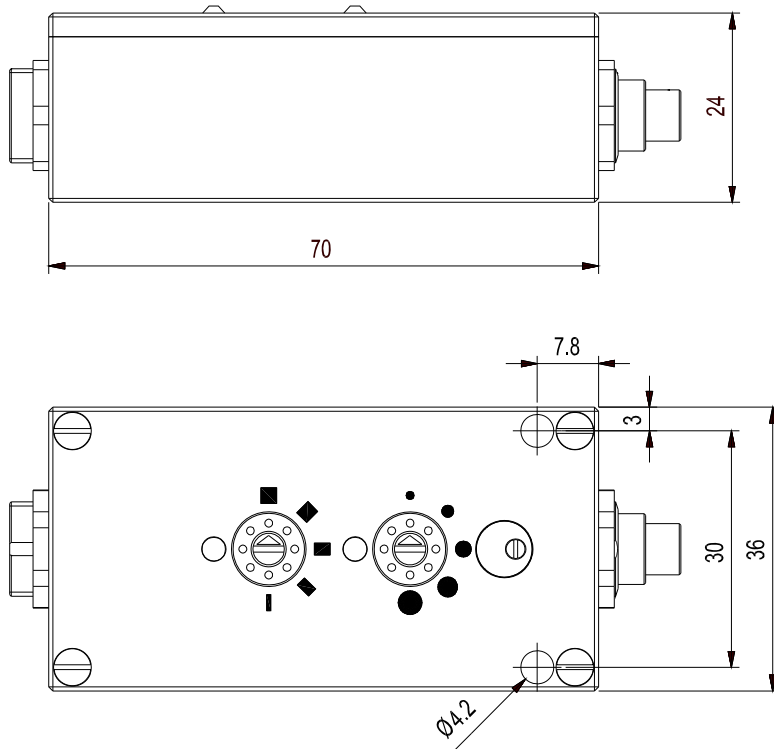
AGL-DIF




Technical Data

Model	AGL-DIF
Voltage supply	+24VDC ± 10%, reversed polarity protected, short-circuit protected
Current consumption	with A-LAS sensor: typ. 80 mA
Operating temperature range	-20°C ... +60°C
Storage temperature range	-20°C ... +85°C
Min. detectable object	starting from 10 µm (depends on the aperture of the A-LAS sensor)
Housing material	aluminum, anodized in blue
Housing dimensions	LxWxH approx. 70 mm x 36 mm x 24 mm
Enclosure rating	IP 64
Step-switch for sensitivity	adjustable in 5 steps from highly sensitive (starting from 10 µm) to sensitive (defects in the 0.1 mm range)
Output ANALOG	0V ... +5V
Output DIGITAL DYNAMIC	2x dynamic (pulse length 8 ms ... 300 ms, adjustable in 5 steps): 1x npn n.c. / pnp n.o. 1x pnp n.c. / npn n.o.
Potentiometer for gain factor	3-revolutions-potentiometer (integrated in the housing)
Step-switching for output pulse	adjustable in 5 steps (8 ms / 20 ms / 50 ms / 120 ms / 300 ms)
Dirt accumulation indication	LED red
Switching state indication DYN	LED red/green (red = object is moved through sensor, green = no object is moved through sensor)
Type of connector	Connection to PLC: 8-pole circular connector Binder Series 712 Connection to sensor: 7-pole female connector Binder Series 712 by means of an integrated cable
Cable length	Connecting cable cab-las-y: available in 1m, 2m, 3m, or 5m
Switching frequency	typ. 25 kHz
Max. switching current	200 mA, short-circuit-proof
Band width analog signal	50 kHz (-3dB)
EMC test acc. to	DIN EN 60947-5-2

Dimensions

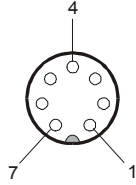


(All dimensions in mm)

Connector Assignment

Connection AGL-DIF to A-LAS sensor
(transmitter and receiver)
7-pole female connector Binder Series 712

Pin:	Assignment:
1	GND (0V)
2	+5V
3	not connected
4	+5V
5	ANALOG (0V ... +5V)
6	not connected
7	GND (0V)

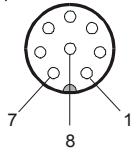


Connecting cable*:
cab-las-y-(length) or
cab-las-y-male-(length)
(standard length: 1m, also available lengths: 2m, 3m, 5m)

(* cable type depends on
type of A-LAS sensor used)

Connection AGL-DIF to PLC:
8-pole connector Binder Series 712

Pin:	Wire/cable:	Assignment:
1	white	GND (0V)
2	brown	+Ub (+24VDC ± 10%)
3	green	not connected
4	yellow	not connected
5	grey	DIF
6	pink	DIF INV
7	blue	not connected
8	red	ANALOG (0V ... +10V)

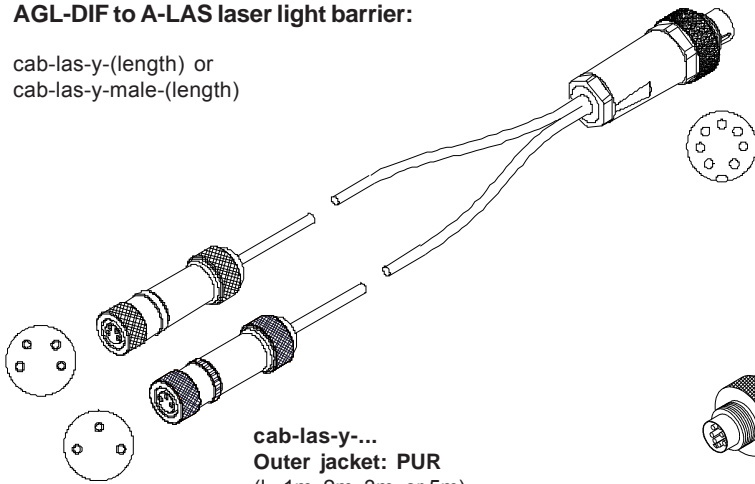


Connecting cable:
cab-las8/702-fem-(length)
(standard length: 2m, max. available length: 25m)

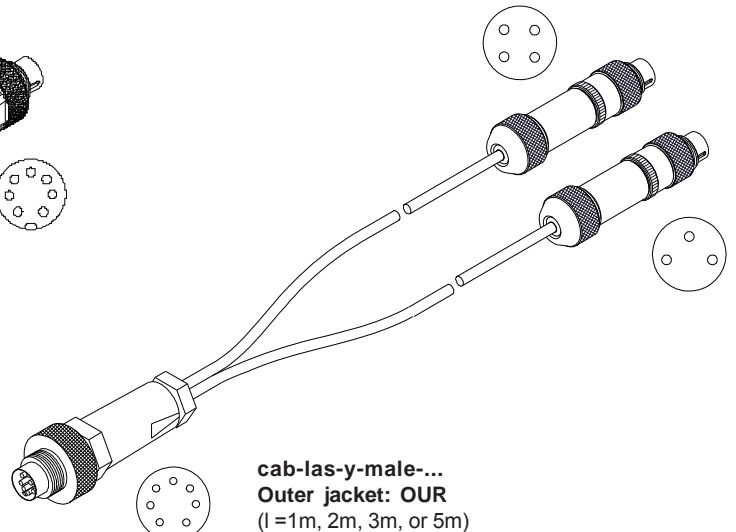
Connecting Cables

Connecting cable
AGL-DIF to A-LAS laser light barrier:

cab-las-y-(length) or
cab-las-y-male-(length)



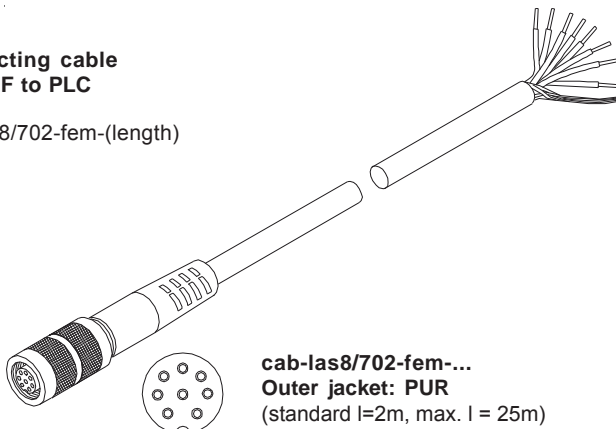
cab-las-y-...
Outer jacket: PUR
(l = 1m, 2m, 3m, or 5m)



cab-las-y-male-...
Outer jacket: OUR
(l = 1m, 2m, 3m, or 5m)
suitable for A-LAS-50, A-LAS-75, A-LAS-100

Connecting cable
AGL-DIF to PLC

cab-las8/702-fem-(length)



cab-las8/702-fem-...
Outer jacket: PUR
(standard l = 2m, max. l = 25m)



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“):

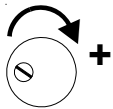
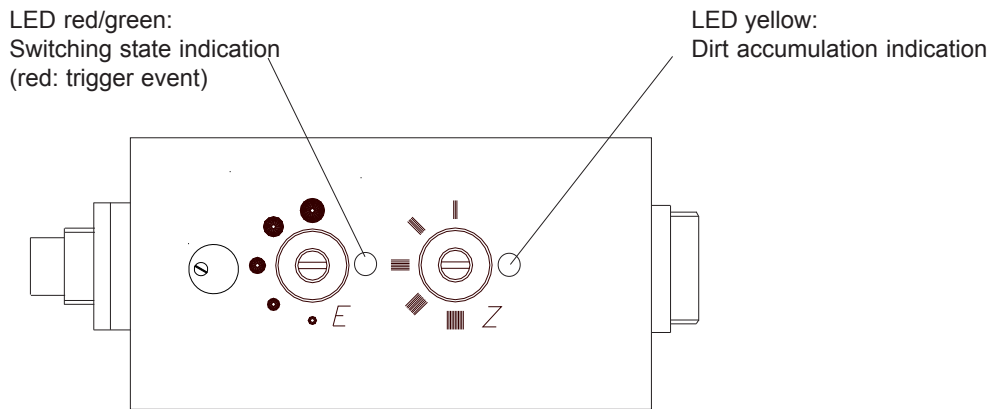
The pulse length of the dynamic output can be adjusted by means of a step-switch. 5 pulse lengths are available.

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.

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.



3-rev.-potentiometer for adjustment of gain factor:

Rotation clockwise:
Increases of analog signal



5-step-switch for adjustment of sensitivity



5-step-switch for adjustment of pulse length

	Step	Sensitivity		Step	Pulse length
	1	highest (> 0,1 mm)		1	300 ms
	2			2	120 ms
	3			3	50 ms
	4			4	20 ms
	5	lowest (> 10 µm)		5	8 ms

**Application Example****Detection of defects of colored optical fibers**

In the process of paint application to optical glass fiber cables, air pockets in the paint may lead to color defects, which at the respective place result in a smaller diameter of the optical fiber, typically over a length of several millimeters.

When such a defect passes a laser light window (here 2 mm x 0.5 mm, light curtain vertical to the direction of feed), the quantity of light increases, the steep rise of the light power triggers a change of the output state, and the defect is detected.

