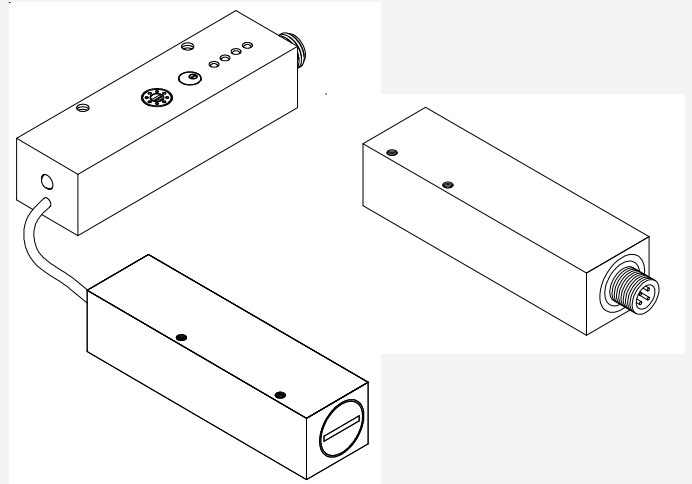


# D-LAS Series

## ► D-LAS-24-ED-16x2-AC

(Glass Pane Detection)

- Insensitive to outside light due to interference filter and polarisation filter and due to pulsating light operation (100kHz)
- Adjustment of sensitivity via 5-step-switch
- Adjustment of gain via 3-revolutions-potentiometer
- Receiving signal level indication by means of 3 LEDs
- Switching state indication by means of a super-bright yellow LED
- Dirt accumulation indication by means of a yellow LED
- High-sensitive (starting from 0.5 mm strength of glass)
- Big transmitter/receiver distance (4 m)
- Big detecting range (laser spot 16 mm x 2 mm)

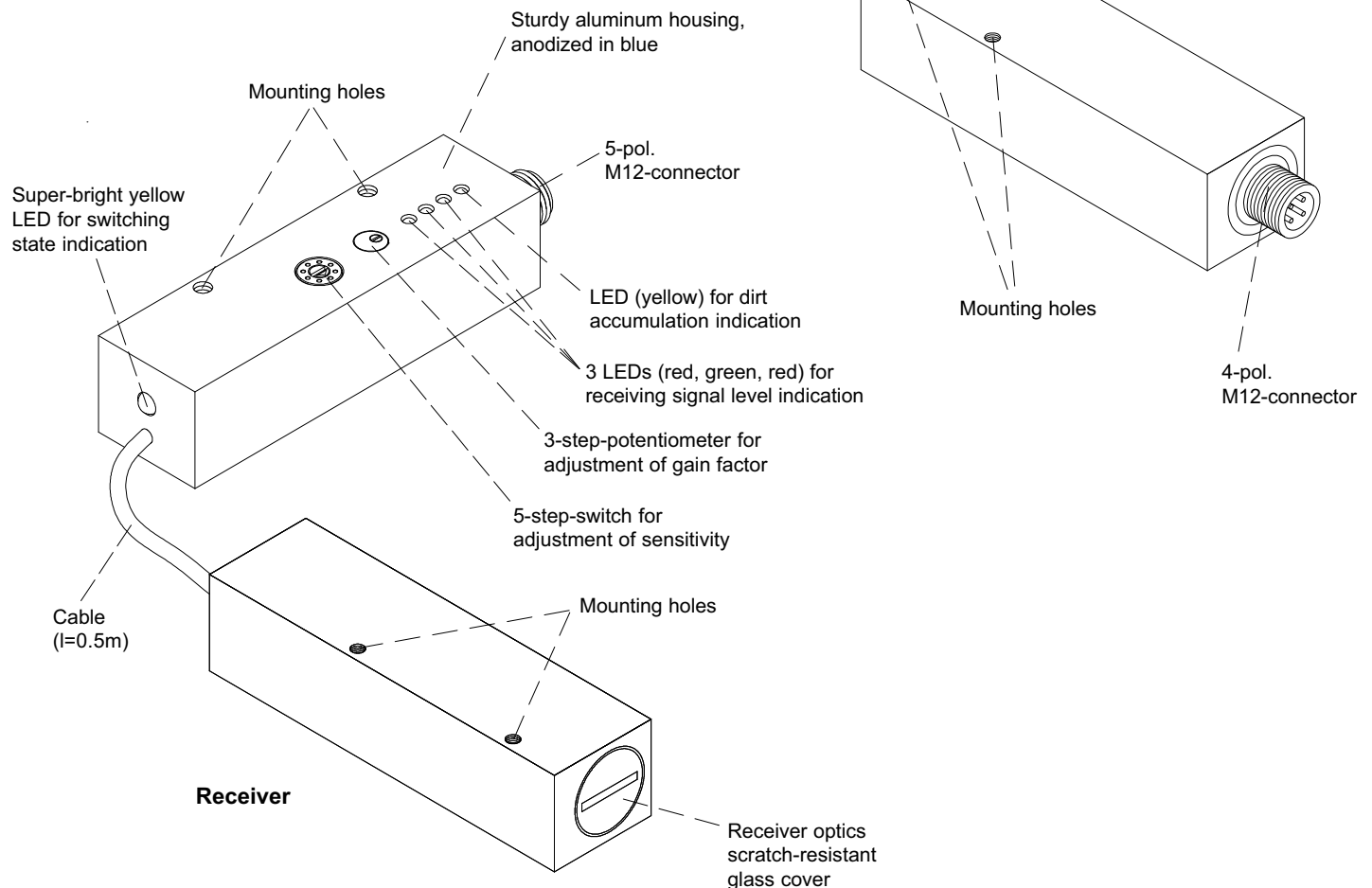


### Design

#### Product name:


**Transmitter:** D-LAS-24-ED-16x2-AC-T

**Receiver:** D-LAS-24-ED-16x2-AC-SP-R (two-piece)





**Technical Data**

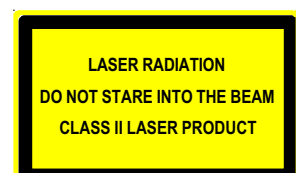
Model	D-LAS-24-ED-...-AC
Laser	Solid state laser, 670 nm, DC-operation, 1 mW max. opt. power, laser class 2 acc. to DIN EN 60825. The use of these laser transmitters therefore requires no additional protective measures.
Max. range	typ. 4 m
Min. detectable strength of glass	0.5 mm
Beam dimensions at transmitter output	typ. 16 mm x 2 mm
Optical filter	Interference filter, polarisation filter
Beam divergency	typ. 1 mrad
Voltage supply	+12VDC ... +32VDC, reverse-polarity protected, overcurrent protected
Pulsating light/ Direct light operation	Pulsating light (100 kHz)
Ambient light	Up to 5000 Lux
Sensitivity setting (switching threshold)	Adjustable by means of an integrated 5-step-switch
Gain factor (analog signal)	Adjustable by means of an integrated potentiometer (3 revolutions)
Current consumption	Transmitter: typ. 60 mA      Receiver: typ. 120 mA
Switching frequency	typ. 1 kHz
Switching outputs	Pin 2 (white): Analog output (0 ... +10V) Pin 4 (black): Output Q <sub>inv</sub> (npn bright-switching, pnp dark-switching) Pin 5 (grey): Output Q (npn dark-switching, pnp bright-switching)
Enclosure rating	IP67
Operating temperature range	-20°C ... +50°C
Storage temperature range	-20°C... +85°C
Housing	Aluminum, anodized in blue
Housing dimensions	Transmitter: approx. 110 mm x 34 mm x 34 mm Receiver: approx. 110.5 mm x 24 mm x 28 mm    respectively    approx. 81 mm x 34 mm x 34 mm
Connector type	Transmitter: M12, 4-pin (stainless steel pug) Receiver: M12, 5-pin (stainless steel plug)
Max. switching current	100 mA, short-circuit protected
EMC test acc. to	IEC - 801... 
Switching state indication	By means of an integrated super-bright yellow LED (receiver)
Dirt accumulation indication	By means of a yellow LED (receiver)
Receiving signal level indication	3 LEDs: red/green/red



**Laser Warning**

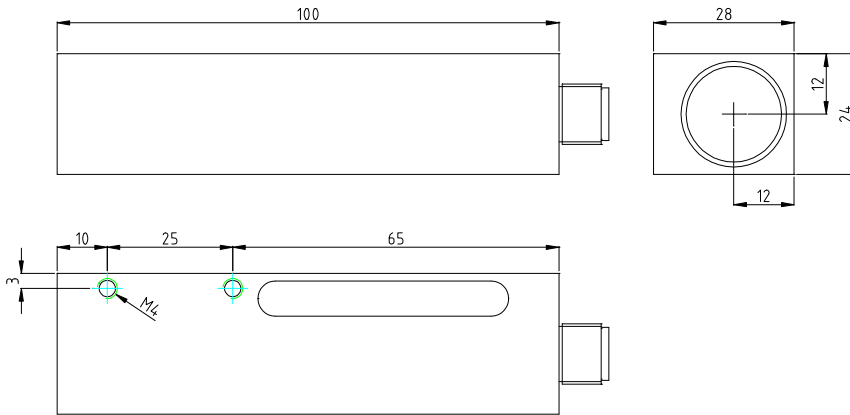
The transmitters of the laser one-way light barriers of D-LAS Series comply with laser class 2 according to EN 60825. The use of these laser transmitters therefore requires no additional protective measures.

The transmitters of the D-LAS Series are supplied with a laser warning label.

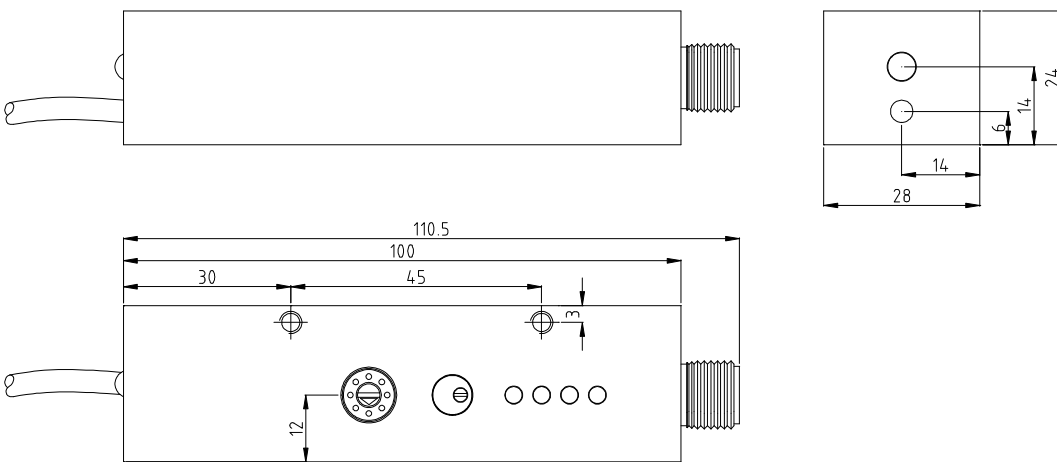


Dimensions

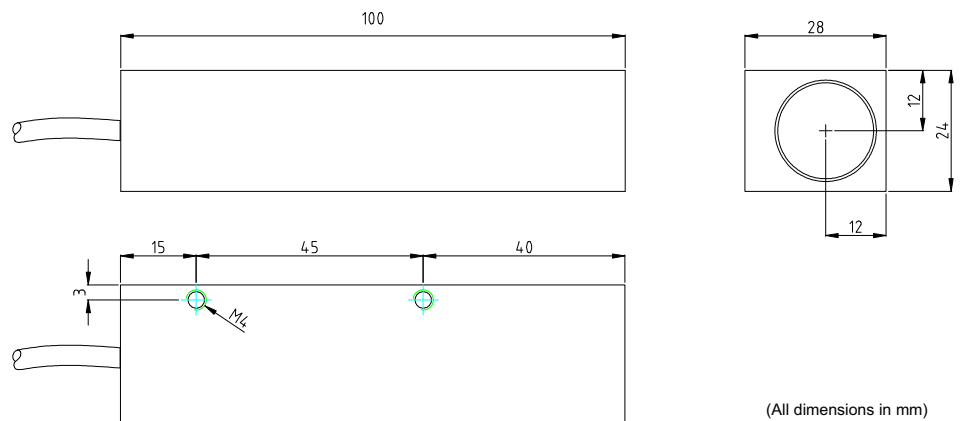
D-LAS-24-ED-16x2-AC-T (transmitter):



D-LAS-24-ED-16x2-AC-SP-R (receiver, two-piece):



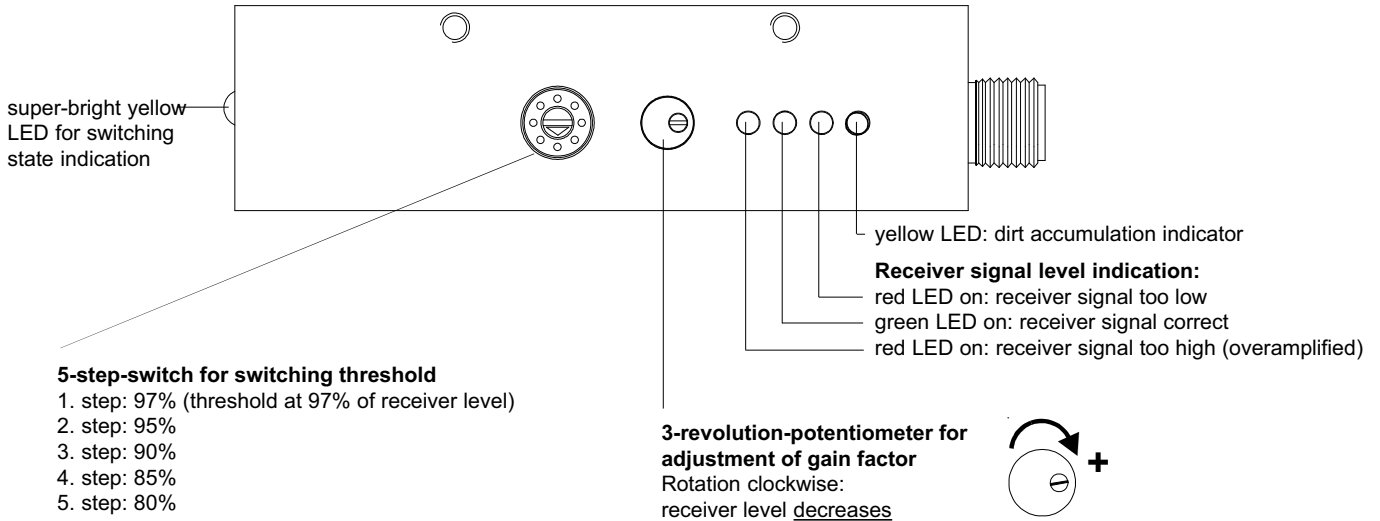
The two receiver parts are connected via a PUR-cable with 0.5 m in length (Ø 4 mm)



(All dimensions in mm)

Setting

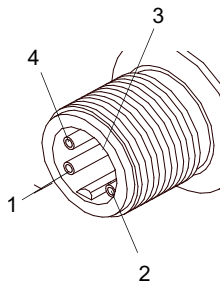
D-LAS-24-ED-16x2-AC-SP-R  
(receiver):



Connector Assignment

D-LAS-24-ED-16x2-AC-T (transmitter):  
(4-pin M12-connector, shielded)

Pin No.:	(Color)	Assignment:
1	(brn)	+Ub (+12 ... +30VDC)
2	(wht)	n.c.
3	(blu)	GND (0V)
4	(blk)	n.c.
Shield		Housing



Connecting cable for transmitter:

**cab-M12/4-g-2-shd**

(PUR-cable shielded, length 2 m  
4-pin M12-connector)

D-LAS-24-ED-16x2-AC-SP-R (receiver):  
(5-pin M12-connector)

Pin No.:	(Color)	Assignment:
1	(brn)	+Ub (+12 ... +30VDC)
2	(wht)	ANALOG (0V ... +10V)
3	(blu)	GND (0V)
4	(blk)	OUTPUT INV „Qinv“
5	(gry)	OUTPUT „Q“

Connecting cable for receiver:

**cab-M12/5-g-2**

(PUR-cable, length 2 m,  
5-pin M12-female connector)


**Application Example**

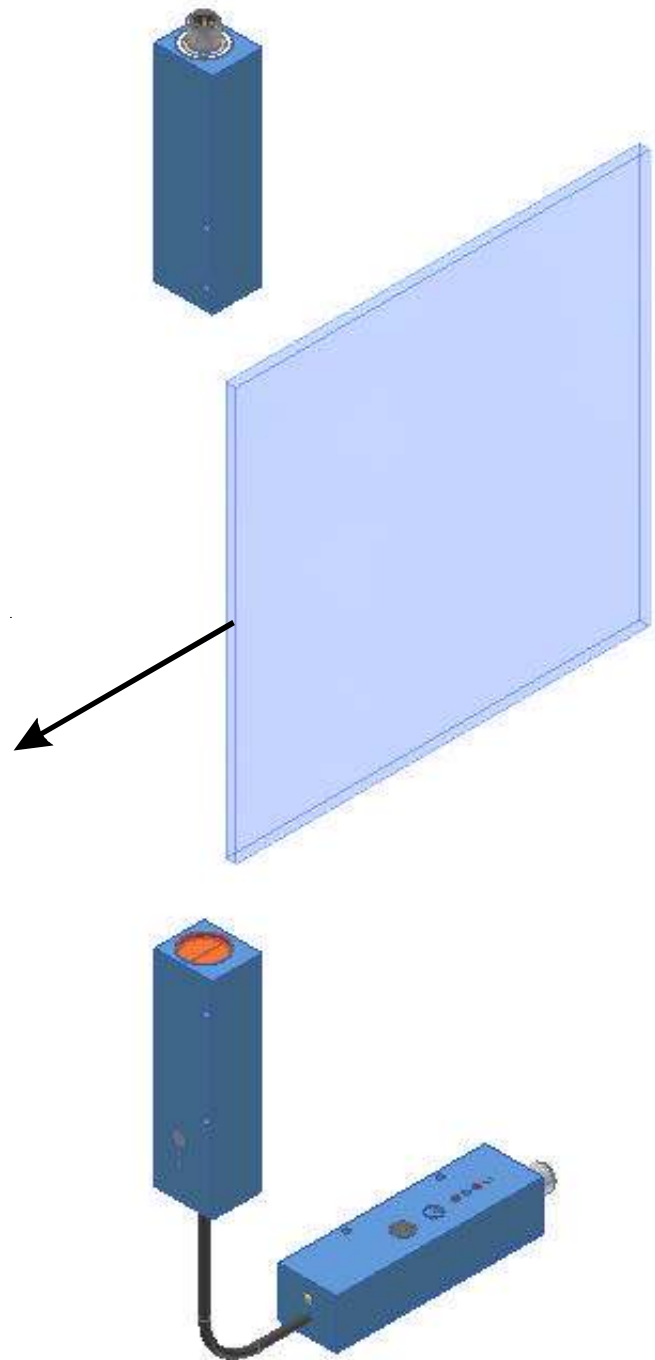
### High-precision triggering on thin glass panes starting from a thickness of 0.5 mm

In various glass handling plants, glass panes up to a height or width of several meters have to be positioned with highest accuracy (in the 0.1 mm range).

The problem is aggravated by the fact that the glass pane may have a thickness of 0.5 mm. With hardened glass, bending of several millimeters must also be taken into consideration.

For safe detection of the glass pane, a correspondingly large detection area (16 mm x 2 mm laser light band) must be available on the one hand, and on the other hand it must be possible to set a correspondingly high sensitivity.

In this case, sensitivity setting is effected in 5 steps by step switches; a potentiometer is used to set the proper gain (3 LEDs as setting aid: 1 x green, 2 x red). Two digital signals (bright-, dark-switching), and one analog signal are provided at the output. An additional LED (yellow) provides information about the degree of dirtying of the analog laser light barrier. The operating frequency is 1 kHz.





Notes