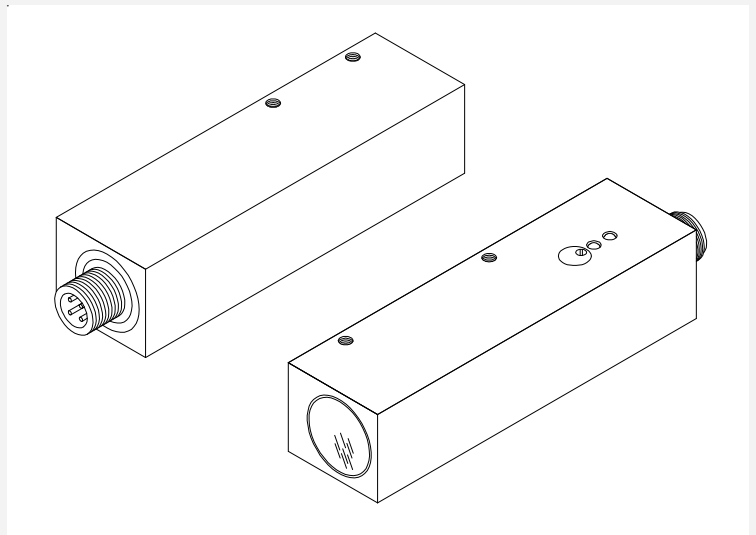


D-LAS Series

► D-LAS-24

- Optics cover made of glass
- Measuring range up to 16 mm
- Analog output 0V...+10V
- Switching output (npn- and pnp compatible)
- Switching state indication by means of yellow-green LED
- Dirt accumulation indication by means of red LED
- Gain adjustable via 3- revolutions potentiometer
- Sturdy aluminum housing



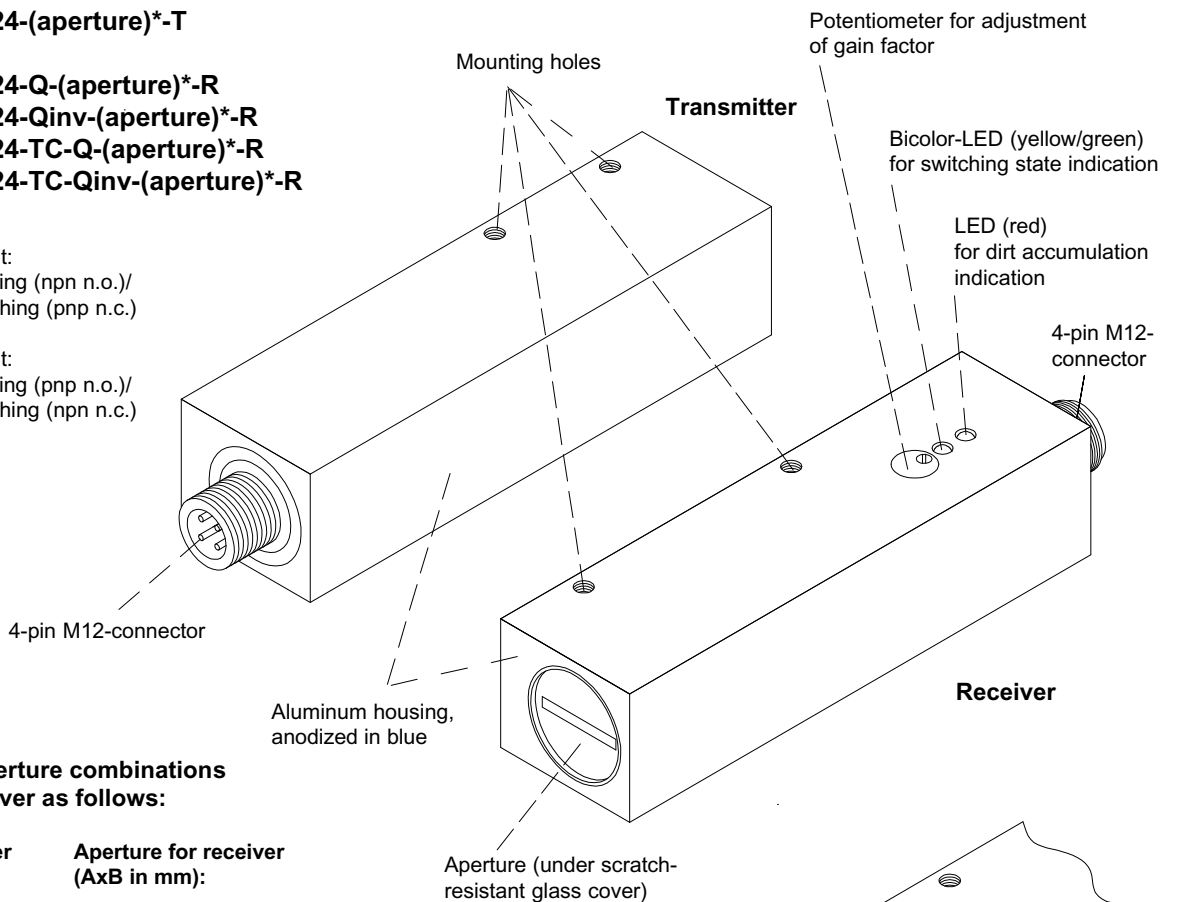
Design

Product name:

Transmitter: D-LAS-24-(aperture)*-T

**Receiver: D-LAS-24-Q-(aperture)*-R
D-LAS-24-Qinv-(aperture)*-R
D-LAS-24-TC-Q-(aperture)*-R
D-LAS-24-TC-Qinv-(aperture)*-R**

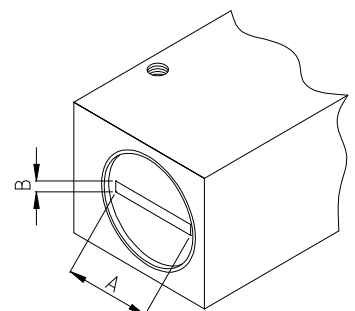
- Q = Switching output:
npn dark-switching (npn n.o.)/
pnp bright-switching (pnp n.c.)
- Qinv = Switching output:
pnp dark-switching (pnp n.o.)/
npn bright-switching (npn n.c.)



***We recommend aperture combinations for transmitter/receiver as follows:**


Aperture for transmitter (AxB in mm):		Aperture for receiver (AxB in mm):	
1 x 16	and	0.5 x 16	
1.5 x 9.5	and	0.2 x 9.5	
2 x 16	and	0.5 x 16	
2 x 10	and	0.3 x 10	
9.5 x 1.5	and	9.5 x 0.2	
10 x 2	and	10 x 0.3	
16 x 1	and	16 x 0.5	
16 x 2	and	16 x 0.5	

Aperture orientation:





Technical Data

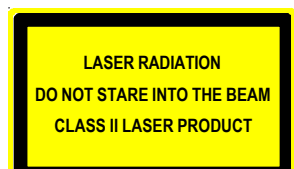
Model	D-LAS-24-...	
Laser	Solid state laser, 670 nm, DC-operation, 1 mW max. optical output, laser class 2 acc. to DIN EN 60825. The use of these laser transmitters therefore requires no additional protective measures.	
Max. range	typ. 5 m (depends on the aperture used)	
Min. detectable object	With aperture size up to 10 mm: Analog typ. 1% of aperture size, digital typ. 0.5% of aperture size, with aperture size 16 mm: Analog typ. 0.5% of aperture size, digital typ. 0.2% of aperture size	
Reproducibility	With aperture size up to 10 mm: Analog typ. 1% of aperture size, digital typ. 0.5% of aperture size, with aperture size 16 mm: Analog typ. 0.5% of aperture size, digital typ. 0.2% of aperture size, with threshold correction "TC": typ. 0.1% of aperture size	
Optical filter	Interference filter + polarisation filter	
Threshold correction	with type "TC"	
Voltage supply	+12VDC ... +32VDC, protected against polarity reversal, overload protected	
Operation	Pulsating light operation	
Ambient light	up to 5000 Lux (depends on the aperture used)	
Sensitivity	Switching threshold lies at 50% (5V), with-type"TC" at 97%	
Gain (analog signal)	adjustable via integrated potentiometer (3 revolutions)	
Current consumption	Transmitter: typ. 60 mA	Receiver: typ. 30 mA
Aperture size (mm)	Transmitter: 16x2, 16x1, 10x2, 9.5x1.5	Receiver: 16x0.5, 10x0.3, 9.5x0.2
Current control input I-CONTROL	0V...+5V: laser power decreases linearly with increasing voltage (max. modulation frequency: 2 kHz)	+5V...+24V: laser OFF
Analog output	0V...+10V (typ. 100 kHz band width)	
Enclosure rating	IP67	
Operating temperature range	-20°C ... +50°C	
Storage temperature range	-20°C ... +85°C	
Housing material	Aluminum, anodized in blue	
Housing dimensions	Transmitter respectively receiver: approx. 100 mm x 28 mm x 24 mm	
Type of connector	M12, 4-pin	
Max. switching current	100 mA, short-circuit protected	
EMC test acc. to	IEC - 801... 	
Switching state indication	via integrated yellow/green LED	
Dirt accumulation indication	via integrated red LED	
Switching frequency	typ. 25 kHz	
Linearity	depends on the aperture: with 16mm-aperture: typ. 2%, with 10mm-aperture: typ. 1%, with 5mm-aperture: typ. 0.3%	



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.

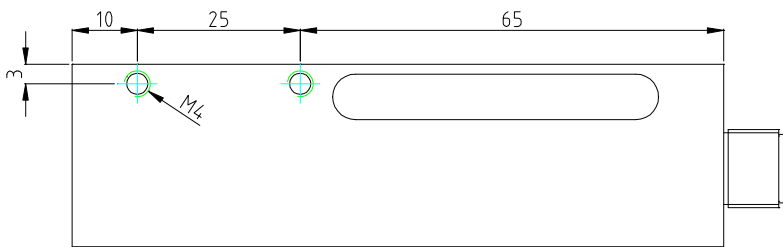
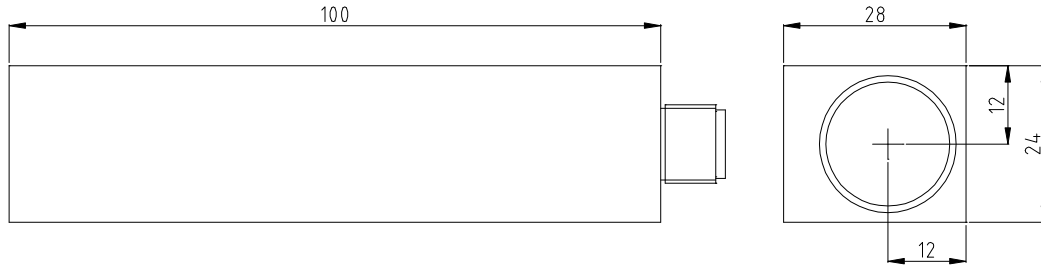
The transmitters of the D-LAS Series are supplied with a laser warning label.



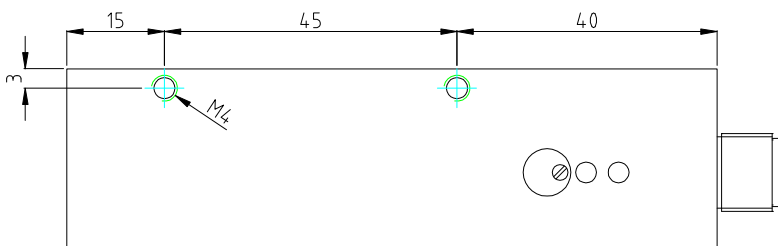
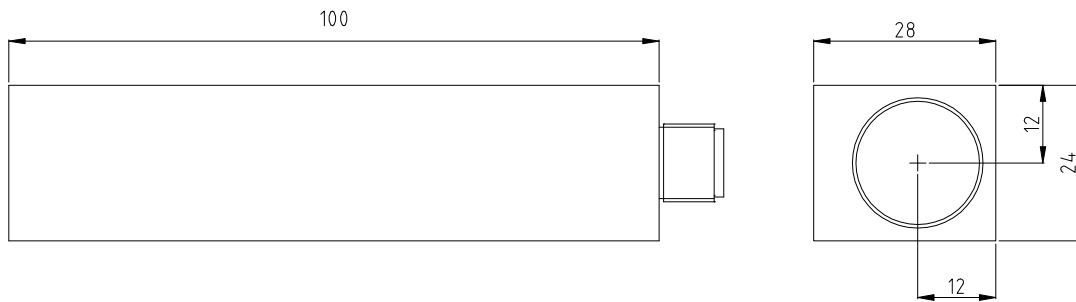


Dimensions

D-LAS-24-...-T (transmitter):



D-LAS-24-...-R (receiver):

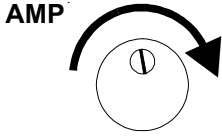


(All dimensions in mm)

Setting

Adjustment of potentiometer:

Gain factor:



Rotation clockwise:
Gain max.

Switching state indication (Bi-Color-LED):



LED yellow:

Analog voltage < switching threshold
(Crossing the threshold from a higher level to a lower level causes a change of the switching state at the digital output --> LED is switching from green to yellow)



LED green:

Analog voltage > switching threshold



LED red:

Sensor dirty

Dirt accumulation indication:

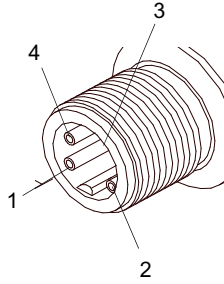
Connector Assignment

Receiver

(4-pin M12-connector, shielded)

Type Q (npn dark-switching / npn bright-switching):

Pin No.:	Color:	Assignment:
1	brn	+12VDC...+32VDC
2	wht	ANALOG (0V...+10V)
3	blu	GND (0V)
4	blk	OUTPUT
Shield		Housing



Transmitter

(4-pin M12-connector, shielded)

Pin No.:	Color:	Assignment:
1	brn	+12VDC...+32VDC
2	wht	I-CONTROL (0...+24V)
3	blu	GND (0V)
4	blk	GND (0V)
Shield		Housing

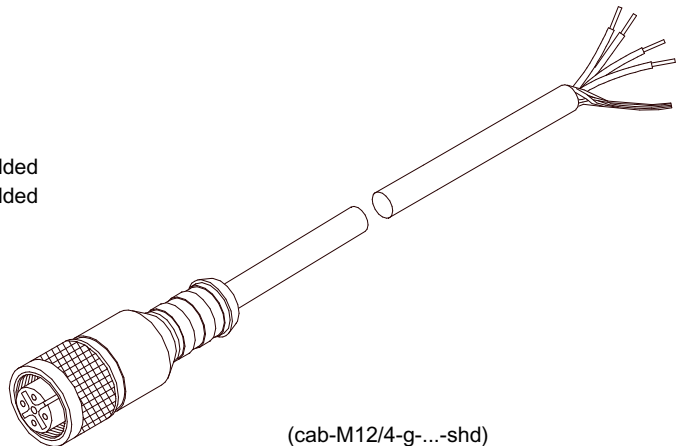
Type Qinv (npn dark-switching / npn bright-switching):

Pin No.:	Color:	Assignment:
1	brn	+12VDC...+32VDC
2	wht	ANALOG (0V...+10V)
3	blu	GND (0V)
4	blk	OUTPUT INV
Shield		Housing

Connecting Cables

Available connecting cables:

cab-M12/4-g-2-shd	Length: 2m	Outer jacket: PUR	shielded
cab-M12/4-g-5-shd	Length: 5m	Outer jacket: PUR	shielded
cab-M12/4-w-2-shd	Length: 2m	Outer jacket: PUR	angle type, shielded
cab-M12/4-w-5-shd	Length: 5m	Outer jacket: PUR	angle type, shielded



(cab-M12/4-g-...-shd)