

D-LAS Series

► D-LAS1

- Optics cover made of glass
- Various apertures available
- Analog output 0V...+10V
- Switching output (npn or pnp)
- High reproducibility (in μm range)
- High switching frequency (5 kHz)
- Sturdy metal housing (brass, nickel-plated)
- Compact design (M18)
- Big working range



Design

Product name:

Transmitter: D-LAS1-(aperture)*-T
 D-LAS1-(aperture)*-i-T
 D-LAS1-M-(aperture)*-T

Receiver: D-LAS1-(switching output)-(aperture)*-R
 D-LAS1-TC-(switching output)-(aperture)*-R
 D-LAS1-D-(switching output)-(aperture)*-R
 D-LAS1-DTC-(switching output)-(aperture)*-R
 D-LAS1-P-(switching output)-(aperture)*-R
 D-LAS1-PTC-(switching output)-(aperture)*-R
 D-LAS1-PD-(switching output)-(aperture)*-R
 D-LAS1-PDTC-(switching output)-(aperture)*-R
 D-LAS1-M-(switching output)-(aperture)*-R
 D-LAS1-MTC-(switching output)-(aperture)*-R
 D-LAS1-MD-(switching output)-(aperture)*-R
 D-LAS1-MDTC-(switching output)-(aperture)*-R
 D-LAS1-MP-(switching output)-(aperture)*-R
 D-LAS1-MPTC-(switching output)-(aperture)*-R
 D-LAS1-MPD-(switching output)-(aperture)*-R
 D-LAS1-MPDTC-(switching output)-(aperture)*-R

Also available: „low-cost“ type:

(with plan-convex lens and round aperture \varnothing 1.0 mm)

Product name:

Transmitter: D-LAS1-LC-T
Receiver: D-LAS1-LC-Q-R
 D-LAS1-LC-Qinv-R

Switching output:

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

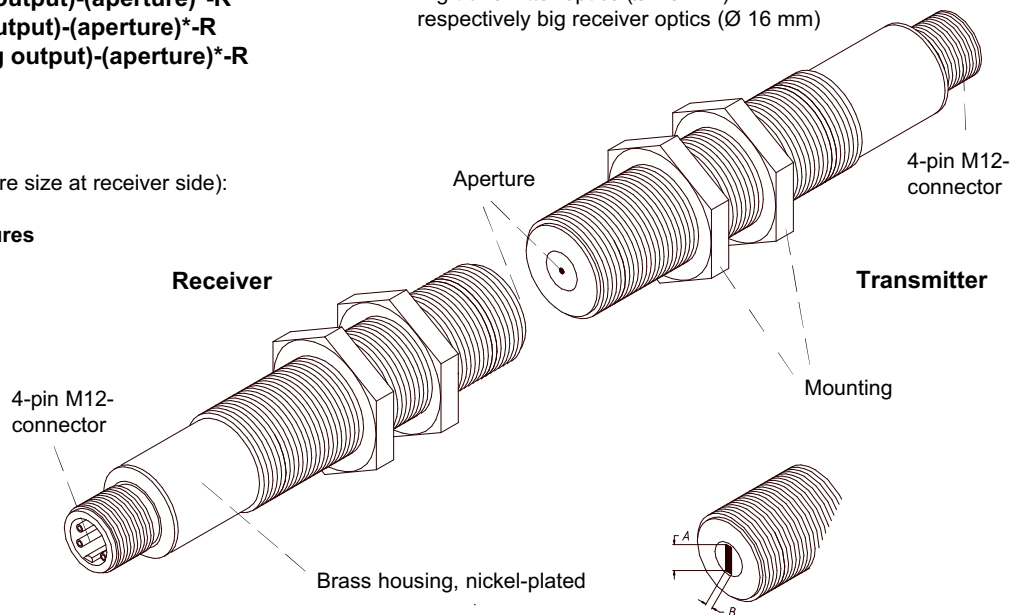
- TC = Threshold correction
- i = Integrated adjustment unit
- P = Potentiometer for comparator threshold adjustment incl. red LED for switching state display integrated in the receiver housing
- D = Dynamic output with 10 ms pulse length
- M = Big transmitter optics (\varnothing 18 mm) respectively big receiver optics (\varnothing 16 mm)

*Available apertures:

(aperture size at transmitter side = aperture size at receiver side):


Rectangular apertures (AxB in mm):	Round apertures (\varnothing in mm)
0.3 x 1	d0.3
0.3 x 1.5	d0.5
0.3 x 3	d0.7
0.5 x 1	d1.0
0.5 x 4	d2.0
0.5 x 6.5	d3.0
0.75 x 2	
0.75 x 3	
0.8 x 6	
0.8 x 6.5	
1 x 2	
1 x 4	
7 x 3 (= without aperture)	

For type M:
 9.5 x 1.5
 9.5 x 2
 10 x 0.3
 16 x 0.5
 16 x 1





Technical Data

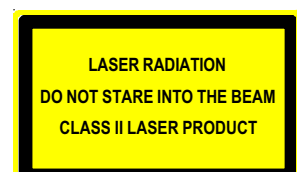
Model	D-LAS1	D-LAS1-TC	D-LAS1-P	D-LAS1-D	D-LAS1-M
Laser	Solid-state laser, 670 nm, 1 mW max. opt. power, laser class 2 acc. to DIN EN 60825. The use of these laser transmitters therefore requires no additional protective measures.				
Max. range	70 m (depends on the aperture used)				150 m
Min. detectable object	With aperture size up to 5 mm: Analog typ. 2% of aperture size, digital typ. 1% of aperture size, 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 5 mm: Analog typ. 2% of aperture size, digital typ. 1% of aperture size, 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 with aperture size A or B respectively $d > 3$ mm				Interference filter
Threshold correction	---	yes	---	---	---
Dynamic output	---	---	---	Pulse length 10 ms	---
Voltage supply	+12VDC ... +32VDC, reverse-polarity protection, overload protection				
Pulsating light operation / Constant light operation	Pulsating light, 45 kHz				
Ambient light	up to 5000 Lux				up to 10000 Lux
Current consumption	Transmitter: typ. 80 mA Receiver: typ. 30 mA				
Max. insertable aperture size	with integr. adjustment unit: A,B or $d < 3$ mm without adjustment unit: 6.5 mm x 0.8 mm		A ≤ 6.5 mm, B ≤ 2 mm $d \geq 2$ mm		A ≤ 16 mm, B ≤ 3 mm, $d \leq 3$ mm
Current control input ICONTROL	0V...+5V: Laser power decreases linearly with increasing voltage +5V...+24V: Laser OFF				
Monitor output	Analog output 0V...+10V				
Enclosure rating	IP64 with integrated adjustment unit, otherwise IP67		IP67		
Operating temperature range	-20°C ... +50°C				
Storage temperature range	-20°C ... +85°C				
Housing material	Brass, nickel-plated				
Housing dimensions	Transmitter respectively receiver: M18x1, length approx. 90 mm (incl. M12 plug)				
Connector type	4-pin M12-connector				
Max. switching current	100 mA, short-circuit-proof				
EMC test acc. to	IEC - 801... 				
Switching frequency	typ. 5 kHz				



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.

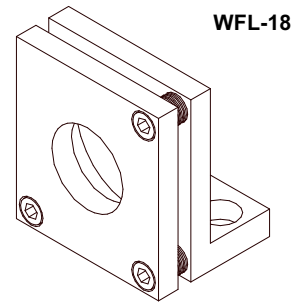
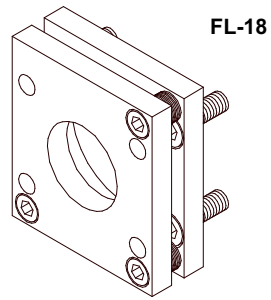




Mounting

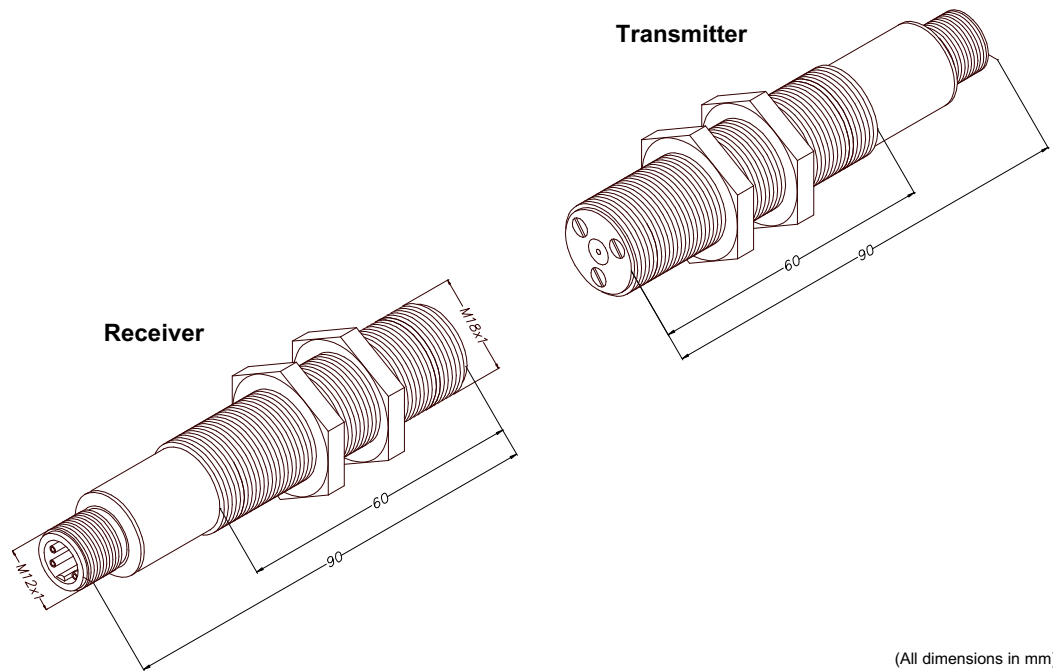
Mounting accessories:
(please order separately)

Mounting flange FL-18
Mounting flange WFL-18



Dimensions

D-LAS1 transmitter
D-LAS1 receiver

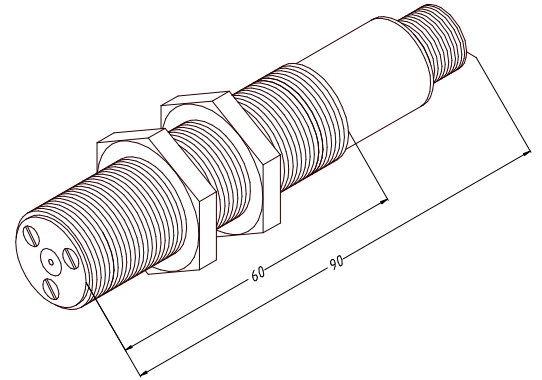
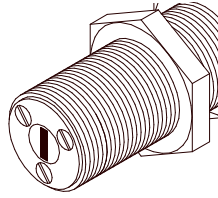


(All dimensions in mm)

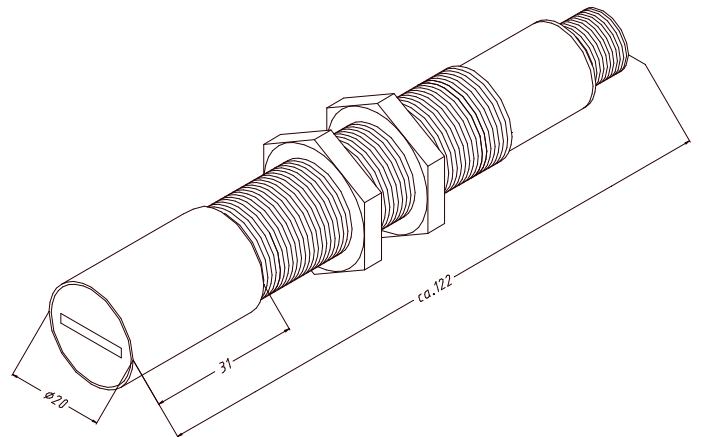
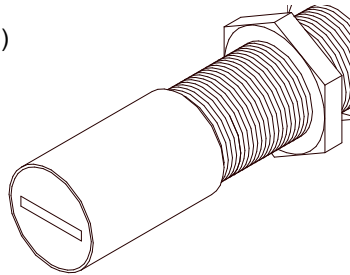


Dimensions

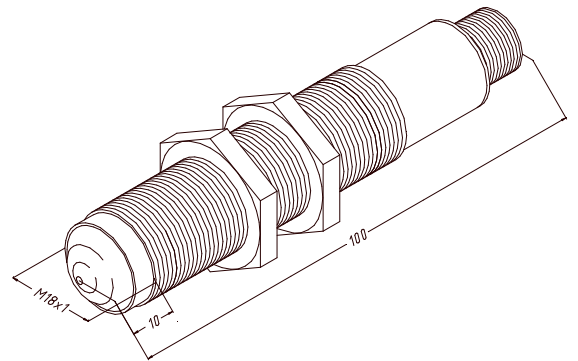
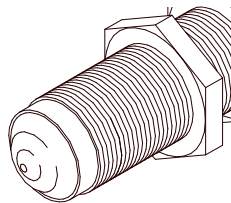
D-LAS1 transmitter with integrated adjustment unit („i“)



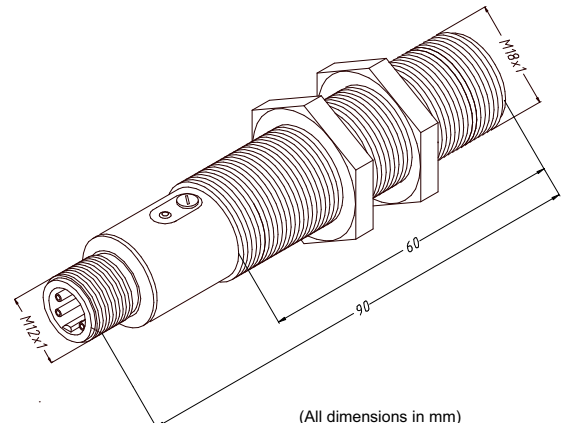
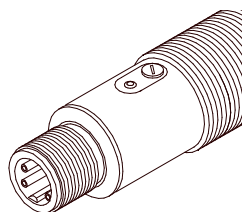
D-LAS1 transmitter with big transmitter optics („M“)



D-LAS1 receiver with big receiver optics („M“)



D-LAS1 receiver with integrated potentiometer („P“)



(All dimensions in mm)

Connector Assignment

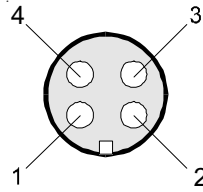
Connector assignment:

Receiver

(4-pin M12-plug, 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



Transmitter

(4-pin M12-plug, shielded)

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

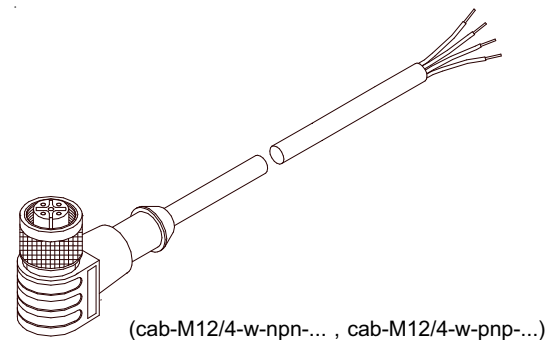
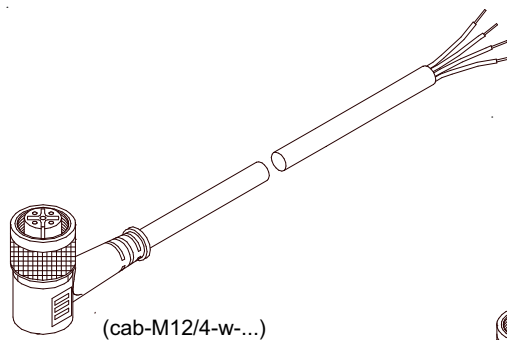
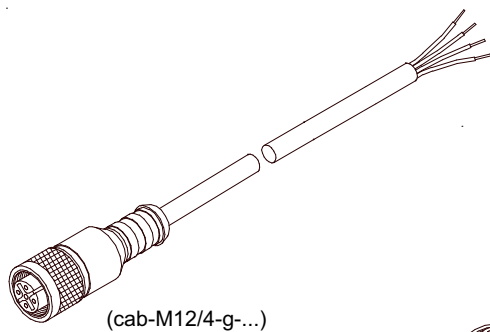
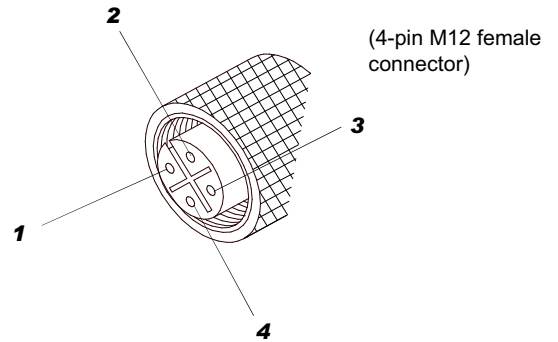
Type Qinv (pnp dark-switching / npn bright-switching):

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

Connecting Cables

Available connecting cables:

cab-M12/4-g-2	Length: 2m	Outer jacket: PUR	
cab-M12/4-g-5	Length: 5m	Outer jacket: PUR	
cab-M12/4-w-2	Length: 2m	Outer jacket: PUR	angle type
cab-M12/4-w-5	Length: 5m	Outer jacket: PUR	angle type
cab-M12/4-w-npn-2	Length: 2m	Outer jacket: PUR	angle type, LED
cab-M12/4-w-npn-5	Length: 5m	Outer jacket: PUR	angle type, LED
cab-M12/4-w-pnp-2	Length: 2m	Outer jacket: PUR	angle type, LED
cab-M12/4-w-pnp-5	Length: 5m	Outer jacket: PUR	angle type, LED





Notes