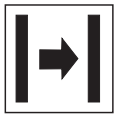
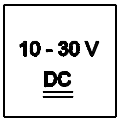
BKL 706

Laser drill break control



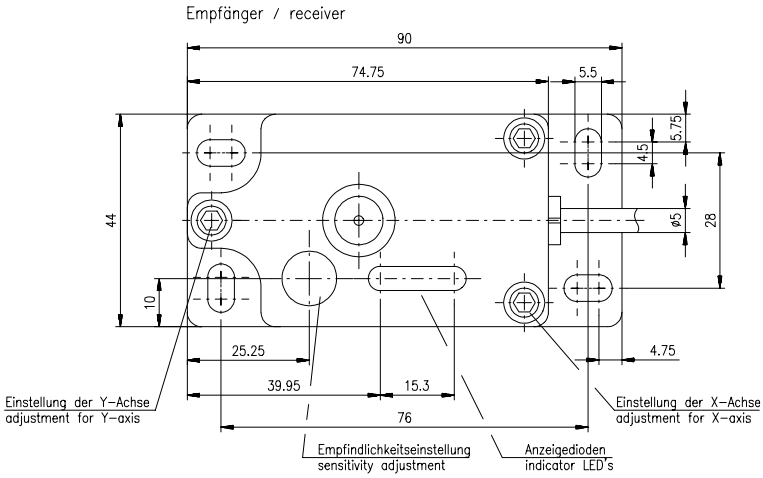
0 - 8 m

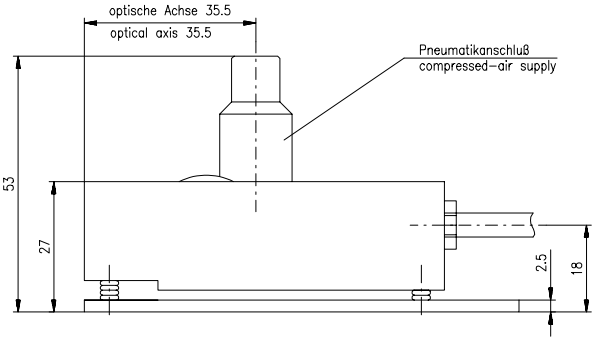


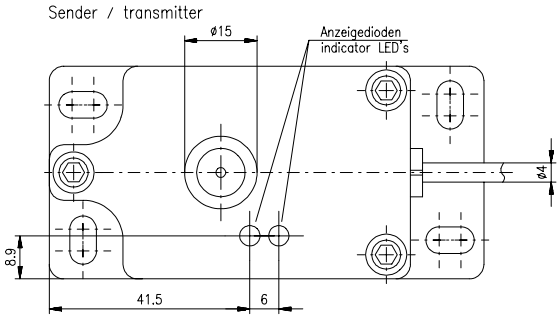
Features

- Laser throughbeam photo electric sensor for tool monitoring.
- Time-saving exact alignment of transmitter and receiver through visible light spot and level display (bargraph).
- Sensitivity adjustment enables optimum adjustment for tool and environment.
- Static and dynamic control in the range of 0 - 8 m (1mm ∅)
- Warning output for contamination display.
- Pneumatic connection for keeping the optics clean.
- Compact metal housing with integrated mounting and adjustment system.

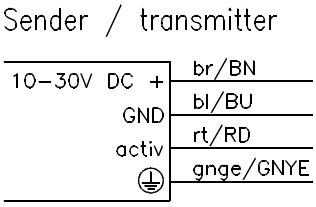
Dimensioned drawings

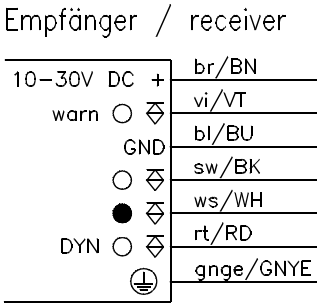






Electrical connection





Specifications

Optical data

Operating ranges 1)	0 - 8 m (depending on aperture)
Operating range limit 2)	0 ... 10 m
Light beam	divergent
Light source	laser (modulated light)
Wavelength	670 nm (visible red light)
Laser protection class	2 / ≤ 1 mW
Point of focus	at 1.4 m (different points of focus optional)
Light spot	at 1.4 m with aperture ∅ 2mm: 0.8 mm
recommended apertures for	receiver: 1.1 mm ∅ (1)
Drill 1 mm ∅ (0 - 8 m)	transmitter: 2 mm ∅ (2)
Minimum distance receiver/transmitter	50 mm (aperture 1/2)

Timing

Switching frequency	200 Hz
Response time	2.5 ms
Delay before start-up	100 ms

Electrical data

Operating voltage UB	10...30 V DC (including residual ripple)
Residual ripple	≤ 15% of UB
Bias current transmitter/receiver	≤ 30 mA
Switching outputs	PNP
Function characteristics	light switching, dark switching
Signal voltage high/low	≥ (U_B - 2 V) / ≤ 2 V
Output current	max. 200 mA
Sensitivity	adjustable with multi-turn potentiometer

Indicators

Transmitter	
LED green	ready
LED yellow	transmitter active
Receiver	
Bargraph-LED 1 green	ready
-LED 2 red	switching output Q,$\overline{Q}$, dyn.
-LED 3-5 yellow	performance reserve

Mechanical data

Housing	aluminum, red, anodized
Optics	glass
Weight	400 g, (transmitter and receiver)
Connection type	cable (transmitter 10 m 4x0.25, receiver 15 m 7x0.25 mm²) PVC or PUR

Environmental data

Ambient temp. (operation/storage)	-20 °C ...+ 40 °C / -30 °C ...+ 70 °C
Extraneous light limit	≥ 30 kLux (VDE 0660 T 208)
Protective circuit 3)	1,2,3
VDE-safety class	III
Protection class	IP 67
Impact resistance	semi-sine, 30 gn, 11 ms (VDE 0660 T 208)
Vibration resistance	10 ... 55 Hz, max. 7.5 gn (VDE 0660 T 208)
Electromagnetic compatibility	severity level 3 (IEC 801.2 ... 4)

Options

Activation input active	
Transmitter active/not active	≥ 8 V / ≤ 2 V or not connected
Activation/disable delay	≤ 0.5 ms

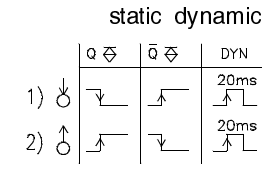
1) operating range: recommended range with performance reserve

2) operating range limit: max. attainable range without performance reserve"

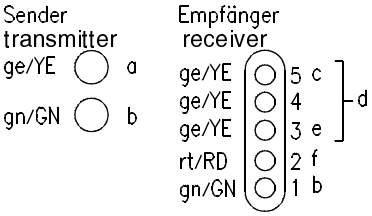
3) 1=transient protection, 2=polarity reversal protection, 3=short circuit protection for all outputs

Tables / diagrams

Switching outputs



1) light beam interrupted
(tool crosses light beam)
2) light beam free
(tool has passed light beam)



a - activation
b - ready
c - max
d - sensitivity
e - min
f - switching output

Remarks

- Optimum setting of sensitivity adjustment is achieved when the 5. LED starts being illuminated
- The red LED signals the state of the switching output.

Order guide

Laser drill break control

	PVC cable	PUR cable
transmitter	BKL 706 SE,10000	BKL 706 SE,10000 P
receiver	BKL 706 / 44 E,15000	BKL 706 / 44 E,15000 P

Accessories (available separately):

10) Adjustment

BKL 706 ...		**Drill Breakage Monitoring**		
Procedure	**Order**	**What**		**How**
General	**1)**	**Coarse alignment**		***- mechanical - Transmitter / Receiver***
	2)	**Transmitter**	**----->**	***activate***
	3)	**Receiver**	**----->**	***Sensitivity Maximum (clockwise)***
Transmitter	**4)**	**Laser point**	**----->**	***Point at center of receiver aperture***
		Aim:	**----->**	***All receiver LEDs on !***
	6)	**Transmitter**	**----->**	***fix position mechanically***
Receiver	**7)**	**Receiver**	**----->**	***Align until all LEDs at the receiver are on (angular correction)***
	8)	**Receiver**	**----->**	***fix position mechanically***
	9)	**Sensitivity**	**----->**	***Decrease (counter-clockwise) until top LED goes off.***
	10)	**Sensitivity**	**----->**	***Increase (clockwise) unitil top LED "just" on!***
		Adjustment	**----->**	***completed***