



## BKL 706

## Laser drill break control

Part No. 501 07798

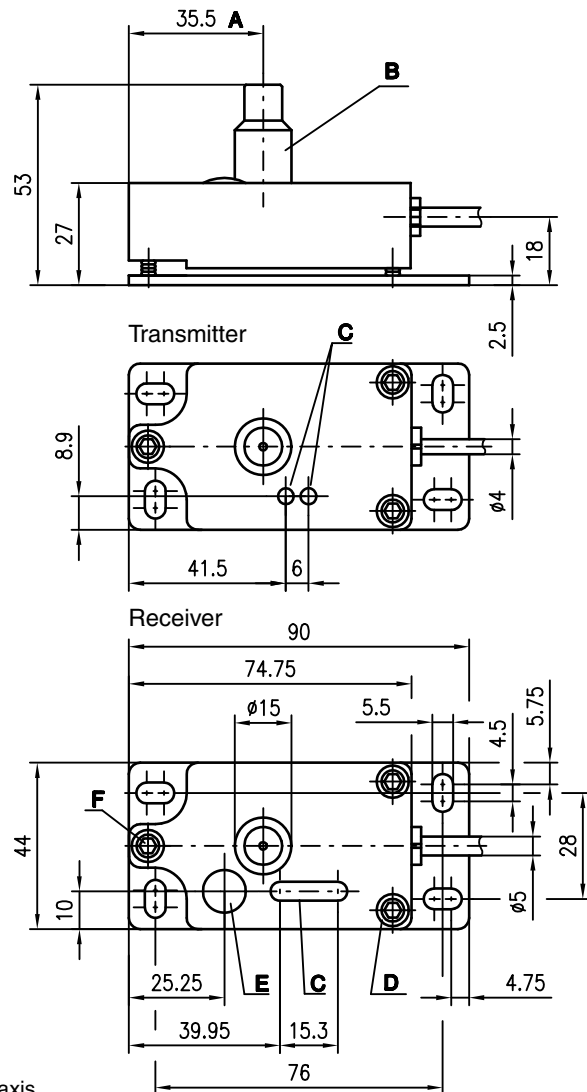


0 ... 8m

10 - 30 V  
DC

- Laser throughbeam photoelectric sensor for tool monitoring
- Time-saving, precise alignment of transmitter and receiver by means of visible light spot and level indicator (bar graph)
- Optimum adaptation to tool and surroundings by means of sensitivity adjustment
- Static and dynamic control in the range from 0 ... 8m (1 mm Ø)
- Warning output for contamination display
- Pneumatic connection for keeping the optics clean
- Compact, metal construction with integrated fastening and adjustment system

### Dimensioned drawing



- A** Optical axis
- B** Pneumatic connection
- C** Indicator diodes
- D** Adjustment of the X-axis
- E** Sensitivity adjustment
- F** Adjustment of the Y-axis

### Electrical connection

#### Transmitter

10-30V DC +	br/BN
GND	bl/BU
activ	rt/RD
⊕	gnge/GNYE

#### Receiver

10-30V DC +	br/BN
warn	vi/VT
○ ↗	bl/BU
GND	sw/BK
○ ↘	ws/WH
● ↗	rt/RD
DYN	gnge/GNYE
○ ↘	
⊕	

We reserve the right to make changes • BKL706\_gb\_fm



### Accessories:

(available separately)

- Diaphragms Ø 1.1 mm and Ø 2 mm (see order guide)

## Specifications

### Optical data

Operating range <sup>1)</sup>	0 ... 8m (diaphragm dependent)
Operating range limit <sup>2)</sup>	0 ... 10m
Light beam propagation	divergent
Light source	laser (modulated light)
Wavelength	670nm (visible red light)
Laser class	2 (acc. to EN 60825-1)
Focal point	at 1.4m (other focus settings optional)
Light spot	at 1.4m with diaphragm 2mm Ø: 0.8mm
recommended diaphragms for drill 1mm Ø (0 ... 8m)	receiver: 1.1mm Ø (1) transmitter: 2mm Ø (2)
Minimum receiver/transmitter distance	50mm (diaphragm 1/2)

### Timing

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

### Electrical data

Operating voltage $U_B$	10 ... 30VDC (incl. residual ripple)
Residual ripple	$\leq 15\%$ of $U_B$
Transmitter/receiver open-circuit current	$\leq 30$ mA
Switching outputs	PNP
Function characteristics	light switching/dark switching
Signal voltage high/low	$\geq (U_B - 2V) / \leq 2V$
Output current	max. 200mA
Sensitivity	adjustable with multiterm potentiometer

### Indicators

#### Transmitter

Green LED	ready
Yellow LED	transmitter active

#### Receiver

Bar graph	ready
-LED 1 green	switching output Q, $\bar{Q}$ , Dyn
-LED 2 red	performance reserve
-LEDs 3-5 yellow	

### Mechanical data

Housing	red aluminium, anodised
Optics	glass
Weight	400g (transmitter and receiver)
Connection type	cable (transmitter 4 x 0.25mm <sup>2</sup> , receiver 7 x 0.25mm <sup>2</sup> ) PVC or PUR version; see order guide for length

### Environmental data

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

### Options

#### Activation input active

Transmitter active/not active	$\geq 8V / \leq 2V$ or not connected
Activation/disable delay	$\leq 0.5$ 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

## Order guide

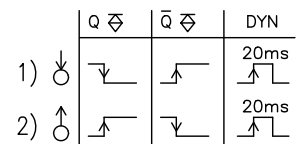
		Cable length	Designation	Part No.
<b>with standard diaphragms</b> (transmitter: Ø 2mm, receiver: Ø 1.1mm)				
With PVC cable	Transmitter	10m	BKL 706 SE, 10000	500 82123
	Receiver	15m	BKL 706/44 E, 15000	500 32275
With PUR cable	Transmitter	10m	BKL 706 SE, 10000P	500 34293
	Receiver	15m	BKL 706/44 E, 15000P	500 34294
	Transmitter	20m	BKL 706 SE, 20000P	500 41554
	Receiver	20m	BKL 706/44 E, 20000P	500 41555
<b>with special diaphragms</b> (transmitter: Ø 1.1mm, receiver: Ø 1.1mm)				
With PUR cable	Transmitter	10m	BKL 706 SE.1, 10000P	501 07098
	Receiver	15m	BKL 706/44 E, 15000P	500 34294
	Transmitter	20m	BKL 706 SE.1, 20000P	501 07099
	Receiver	20m	BKL 706/44 E, 20000P	500 41555
<b>Diaphragms</b>				
Ø 1.1mm	natural colour	–	BKL 706 M	500 60796
Ø 2mm	black	–	BL 66.2	500 20010

## Tables

## Diagrams

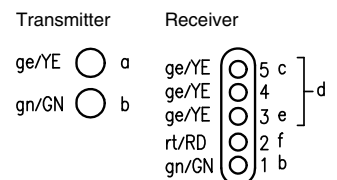
## Remarks

### ● Switching outputs



- 1) Light axis interrupted (tool present in light beam)  
 2) Light axis no longer interrupted (tool has e.g. passed through light beam)

### ● LEDs



- a Activation  
 b Ready for operation  
 c Max.  
 d Sensitivity  
 e Min.  
 f Switching output

### ● Optimum sensitivity

adjustment:  
5th LED begins to illuminate.

- The red LED indicates the state of the switching output.

### ● Laser warning notice



**10) Adjustment**

**BKL 706 ... Drill Breakage Monitoring**

Procedure	Order	What	How
<b>General</b>	1)	Coarse alignment	- mechanical - Transmitter / Receiver
	2)	Transmitter	----> activate
	3)	Receiver	----> Sensitivity Maximum (clockwise)
<b>Transmitter</b>	4)	Laser point	----> Point at center of receiver aperture
		Aim:	----> All receiver LEDs on !
	6)	Transmitter	----> fix position mechanically
<b>Receiver</b>	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) until top LED "just" on!
		Adjustment	----> completed