

Compact light barriers

- Photo electric system with modulated infrared light
- Self-contained amplifier
- Range up to 40 m (131 ft)
- Transistor output npn/pnp
- Switching frequency max. 500 Hz
- Metal housing, IP 67
- short-circuit proof outputs
- Reverse polarity protection



Short description

These infrared photo electric systems are powerful through-beam light barriers which are characterized by their very small and robust type. The sensor heads are filled with resin to guarantee the high degree of protection, IP 67. This allows for applications in extreme areas with moisture, dust and dirt.

The system, consisting of one transmitter (ST...) and one receiver

(SR...), can be easily aligned even at distances of 40 m (131 ft) by a large field of view. The transmitter has an input, which can be adjusted, depending upon the application or switched off, testing the transmit power for failure-free operation. The receiver has an NPN/ PNP transistor output and a yellow status LED.

Ordering table

Transmitter ST...

	Model	M12x1 - nickel plated brass		M12x1 - stainless steel		12x12x82 mm - aluminium	
	Connection	cable 5 m	plug M12	cable 5 m	plug M12	cable 5 m	plug M8
Emission angle							
20 °		STA-CLN-5	STA-CLN-C4	STA-CLV-5	STA-CLV-C4	STA-LLA-5	STA-LLA-B3
6 °		STB-CLN-5	STB-CLN-C4	STB-CLV-5	STB-CLV-C4	STB-LLA-5	STB-LLA-B3

Receiver SR...

	Model	M12x1 - nickel plated brass		M12x1 - stainless steel		12x12x82 mm - aluminium	
Range	Connection	cable 5 m	plug M12	cable 5 m	plug M12	cable 5 m	plug M8
STA... (STB...)	Switching mode						
1 m (5 m)	light	SRSL-CLN-5	SRSL-CLN-C4	SRSL-CLV-5	SRSL-CLV-C4	SRSL-LLA-5	SRSL-LLA-B3
	dark	SRSD-CLN-5	SRSD-CLN-C4	SRSD-CLV-5	SRSD-CLV-C4	SRSD-LLA-5	SRSD-LLA-B3
6 m (20 m)	light	SRHL-CLN-5	SRHL-CLN-C4	SRHL-CLV-5	SRHL-CLV-C4	SRHL-LLA-5	SRHL-LLA-B3
	dark	SRHD-CLN-5	SRHD-CLN-C4	SRHD-CLV-5	SRHD-CLV-C4	SRHD-LLA-5	SRHD-LLA-B3
15 m (40 m)	light	SRL-CLN-5	SRL-CLN-C4	SRL-CLV-5	SRL-CLV-C4	SRL-LLA-5	SRL-LLA-B3
	dark	SRLD-CLN-5	SRLD-CLN-C4	SRLD-CLV-5	SRLD-CLV-C4	SRLD-LLA-5	SRLD-LLA-B3

Safety instructions



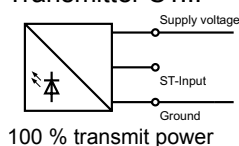
Warning!

The operation of this infrared photo electric system is not authorized for applications where safety of the person depends on the device function.

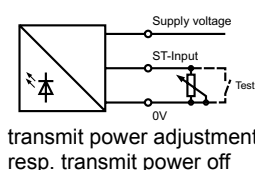
Do not look into the transmitter! It's possible, that highly concentrated non visible infrared light is emitting out of the transmitter STB..., which can be hazardous to the human eye. So you have to follow the safety precautions given in IEC 60825-1.

Wiring diagram

Transmitter ST...

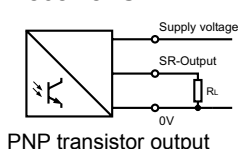


100 % transmit power

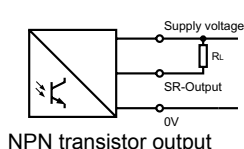


transmit power adjustment
resp. transmit power off

Receiver SR...



PNP transistor output



NPN transistor output

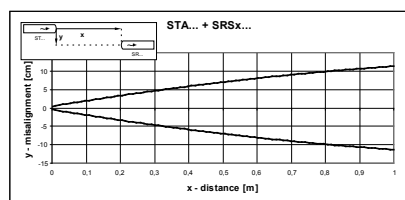
	Cable	Plug M8x1	Plug M12x1
Supply voltage	brown	PIN ①	PIN ①
Ground (0 V)	blue	PIN ③	PIN ③
ST-Input	black	PIN ④	PIN ④
SR-Output	black	PIN ④	PIN ④

The overall length of the power supply cable may not exceed 10 m (33 ft). Otherwise the supply power must be made with a DC power supply, meeting the EMC-directive.

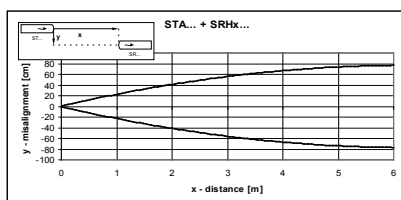
Compact light barriers
Technical data (at +20 °C / +68 °F)

Transmitter	STA...	STB...
Operating basis	modulated infrared light	
Supply voltage	12 V DC ... 30 V DC	
Current consumption	30 mA	
Emission angle	20 °	6 °
Transmit frequency	11,7 kHz	
Transmit power	extern adjustable, see picture 7	
MTBF (EN/IEC 61709)	368 a (8760 h/a, 40 °C)	
Degree of protection	IP 67	
Housing material:	CLN	Nickel plated brass
	CLV	Stainless steel
	LLA	Aluminium anodized
Power on display	LED green	
Connection: cable	3x 0,14 mm ² , PVC	
	plug -B3 / -C4	M8, 3-pole / M12, 4-pole
Operation temperature	-20 °C ... +60 °C (-4 °F ... +140 °F)	
Storage temperature	-40 °C ... +80 °C (-40 °F ... +176 °F)	

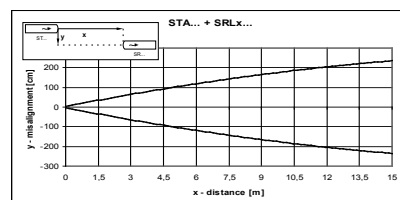
Receiver	SRS...	SRH...	SRL...
Range: Transmitter STA...	1 m (3 ft)	6 m (20 ft)	15 m (49 ft)
Transmitter STB...	5 m (16 ft)	20 m (66 ft)	40 m (131 ft)
Ambient light immunity	> 60000 LUX		
Supply voltage	12 V DC ... 30 V DC		
Current consumption	max. 35 mA		
Operating angle	12,5 °		
Switching mode	light or dark		
Transistor output	NPN/PNP		
Output current	100 mA, short circuit proof		
Switching frequency (max.)	500 Hz	150 Hz	20 Hz
MTBF (EN/IEC 61709)	195 a (8760 h/a, 40 °C)		
Degree of protection	IP 67		
Housing material: CLN	Nickel plated brass		
CLV	Stainless steel		
LLA	Aluminium anodized		
Output status display	LED yellow		
Connection: cable	3x 0,14 mm², PVC		
plug -B3 / -C4	M8, 3-pole / M12, 4-pole		
Operation temperature	-25 °C ... +60 °C (-13 °F ... +140 °F)		
Storage temperature	-40 °C ... +80 °C (-40 °F ... +176 °F)		



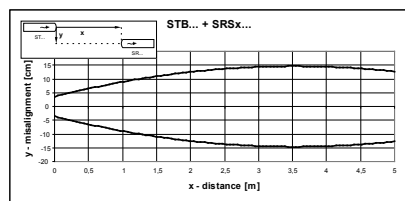
picture 1: alignment diagram STA... / SRSx...



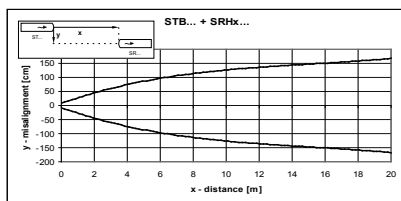
picture 2: alignment diagram STA... / SRHx...



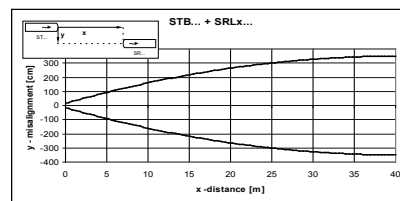
picture 3: alignment diagram STA... / SRLx...



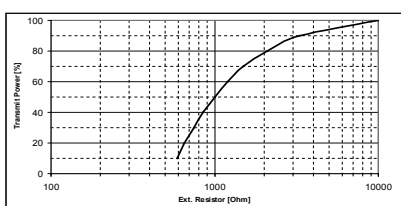
picture 4: alignment diagram STB... / SRSx...



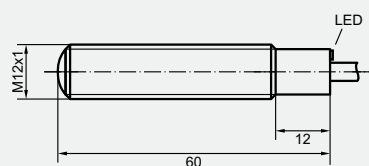
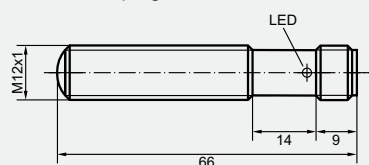
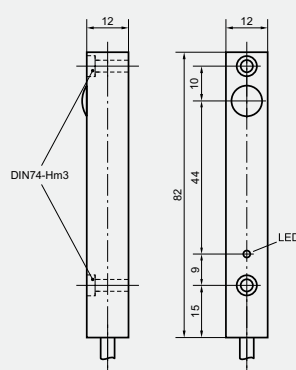
picture 5: alignment diagram STB... / SRHx...



picture 6: alignment diagram STB... / SRLx...



picture 7: transmit power vs. ext. Resistor

Dimensions (in mm)
CLN / CLV with cable

CLN / CLV with plug

LLA with cable

LLA with plug
