

Safety Light Curtain SC2/SC4



Description:

Robust aluminum housing
Category 2, Category 4
Protective heights 150~1800mm

Features:

EDM function
Automatic/Manual reset
Anti-Interface function
7-segment LED displays operation status

Type Selection for SC2 (automatic/manual reset):

Type	Function	Protective field height	Resolution	Range
SC2P30-150E	Transmitter+Receiver	150mm	30	0.2 -19m
SC2P30-300E	Transmitter+Receiver	300mm	30	0.2 -19m
SC2P30-450E	Transmitter+Receiver	450mm	30	0.2 -19m
SC2P30-600E	Transmitter+Receiver	600mm	30	0.2 -19m
SC2P30-750E	Transmitter+Receiver	750mm	30	0.2 -19m
SC2P30-900E	Transmitter+Receiver	900mm	30	0.2 -19m
SC2P30-1050E	Transmitter+Receiver	1050mm	30	0.2 -19m
SC2P30-1200E	Transmitter+Receiver	1200mm	30	0.2 -19m
SC2P30-1350E	Transmitter+Receiver	1350mm	30	0.2 -19m
SC2P30-1500E	Transmitter+Receiver	1500mm	30	0.2 -19m
SC2P30-1650E	Transmitter+Receiver	1650mm	30	0.2 -19m
SC2P30-1800E	Transmitter+Receiver	1800mm	30	0.2 -19m

Type	Function	Protective field height	Resolution	Range
SC2P50-300E	Transmitter+Receiver	300mm	50	0.2 -19m
SC2P50-450E	Transmitter+Receiver	450mm	50	0.2 -19m
SC2P50-600E	Transmitter+Receiver	600mm	50	0.2 -19m
SC2P50-750E	Transmitter+Receiver	750mm	50	0.2 -19m
SC2P50-900E	Transmitter+Receiver	900mm	50	0.2 -19m
SC2P50-1050E	Transmitter+Receiver	1050mm	50	0.2 -19m
SC2P50-1200E	Transmitter+Receiver	1200mm	50	0.2 -19m
SC2P50-1350E	Transmitter+Receiver	1350mm	50	0.2 -19m
SC2P50-1500E	Transmitter+Receiver	1500mm	50	0.2 -19m
SC2P50-1650E	Transmitter+Receiver	1650mm	50	0.2 -19m
SC2P50-1800E	Transmitter+Receiver	1800mm	50	0.2 -19m

Type	Function	Protective field height	Resolution	Range
SC2P90-300E	Transmitter+Receiver	300mm	90	0.2 -19m
SC2P90-450E	Transmitter+Receiver	450mm	90	0.2 -19m
SC2P90-600E	Transmitter+Receiver	600mm	90	0.2 -19m
SC2P90-750E	Transmitter+Receiver	750mm	90	0.2 -19m
SC2P90-900E	Transmitter+Receiver	900mm	90	0.2 -19m
SC2P90-1050E	Transmitter+Receiver	1050mm	90	0.2 -19m

Type	Function	Protective field height	Resolution	Range
SC2P90-1200E	Transmitter+Receiver	1200mm	90	0.2 -19m
SC2P90-1350E	Transmitter+Receiver	1350mm	90	0.2 -19m
SC2P90-1500E	Transmitter+Receiver	1500mm	90	0.2 -19m
SC2P90-1650E	Transmitter+Receiver	1650mm	90	0.2 -19m
SC2P90-1800E	Transmitter+Receiver	1800mm	90	0.2 -19m

SC2 Technical data:

Safety classification	Comply with Category 2 defined by EN, IEC 61496 Comply with SIL2 defined by IEC 61508
Response time	9-24ms
Operating time	0.2-19m
Operating voltage	+24VDC(±20%)
Consumption	Max. 2W (transmitter); Max. 3W (receiver)
Output mode	2×PNP, Max. 0.5A
Connection	M12, 5-pin (transmitter); M12, 8-pin (receiver)
Connection cable length	Max. 50m
Protection degree	IP65
Ambient temperature	0-55℃
Storage temperature	-25-70℃
Size	Cross section: 32.3×36.9mm
Vibration	0.35mm, 10-55Hz, comply with EN60068-2-6
Shock resistance	10g, 16ms, comply with EN60068-2-29
Housing material	Aluminium (yellow RAL 1003)
Front side material	PMMA
Caps material	PC MAKROLON
Weight	1.3kg/m

Safety Light Curtain SC2/SC4

Type Selection for SC4 (automatic/manual reset):

Type	Function	Protective field height	Resolution	Range
SC4P14-150E	Transmitter+Receiver	150mm	14	0.2 - 6m
SC4P14-300E	Transmitter+Receiver	300mm	14	0.2 - 6m
SC4P14-450E	Transmitter+Receiver	450mm	14	0.2 - 6m
SC4P14-600E	Transmitter+Receiver	600mm	14	0.2 - 6m
SC4P14-750E	Transmitter+Receiver	750mm	14	0.2 - 6m
SC4P14-900E	Transmitter+Receiver	900mm	14	0.2 - 6m
SC4P14-1050E	Transmitter+Receiver	1050mm	14	0.2 - 6m
SC4P14-1200E	Transmitter+Receiver	1200mm	14	0.2 - 6m
SC4P14-1350E	Transmitter+Receiver	1350mm	14	0.2 - 6m
SC4P14-1500E	Transmitter+Receiver	1500mm	14	0.2 - 6m
SC4P14-1650E	Transmitter+Receiver	1650mm	14	0.2 - 6m
SC4P14-1800E	Transmitter+Receiver	1800mm	14	0.2 - 6m

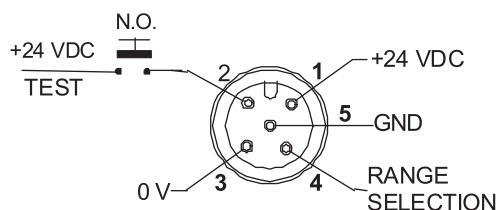
Type	Function	Protective field height	Resolution	Range
SC4P30-150E	Transmitter+Receiver	150mm	30	0.2 - 19m
SC4P30-300E	Transmitter+Receiver	300mm	30	0.2 - 19m
SC4P30-450E	Transmitter+Receiver	450mm	30	0.2 - 19m
SC4P30-600E	Transmitter+Receiver	600mm	30	0.2 - 19m
SC4P30-750E	Transmitter+Receiver	750mm	30	0.2 - 19m
SC4P30-900E	Transmitter+Receiver	900mm	30	0.2 - 19m
SC4P30-1050E	Transmitter+Receiver	1050mm	30	0.2 - 19m
SC4P30-1200E	Transmitter+Receiver	1200mm	30	0.2 - 19m
SC4P30-1350E	Transmitter+Receiver	1350mm	30	0.2 - 19m
SC4P30-1500E	Transmitter+Receiver	1500mm	30	0.2 - 19m
SC4P30-1650E	Transmitter+Receiver	1650mm	30	0.2 - 19m
SC4P30-1800E	Transmitter+Receiver	1800mm	30	0.2 - 19m

SC4 Technical data:

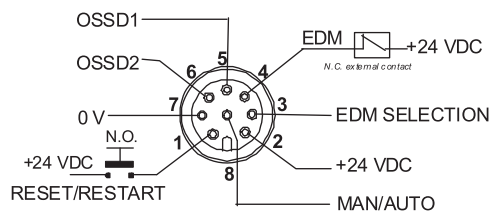
Safety Classification	Comply with Category 4 defined by IEC 61496-1/prIEC 61496-2	
Response time	SC4P14: 11-50ms;	SC4P30: 11-28ms
Operating distance	0.2-19m	
Operating voltage	+24VDC(±20%)	
Consumption	SC4P14: Max. 2.5W(transmitter); Max. 4W(receiver) SC4P30: Max. 2.5W(transmitter); Max. 3.5W(receiver)	
Output mode	2×PNP, Max. 0.5A	
Connection	M12, 5-pin (transmitter) M12, 8-pin (receiver)	
Connection cable length	Max. 50m	
Protection degree	IP65	
Ambient temperature	0-55 °C	
Storage temperature	-25-70 °C	
Size	Cross section: 32.3×36.9mm	
Vibration	0.35mm, 10-55Hz comply with EN60068-2-6	
Shock resistance	10g 16ms, comply with EN60068-2-29	
Housing material	Aluminium (yellow RAL 1003)	
Front side material	PMMA	
Caps material	PC MAKROLON	
Weight	1.3kg/m	

Electrical connection:

Transmitter



Receiver



Transmitter:

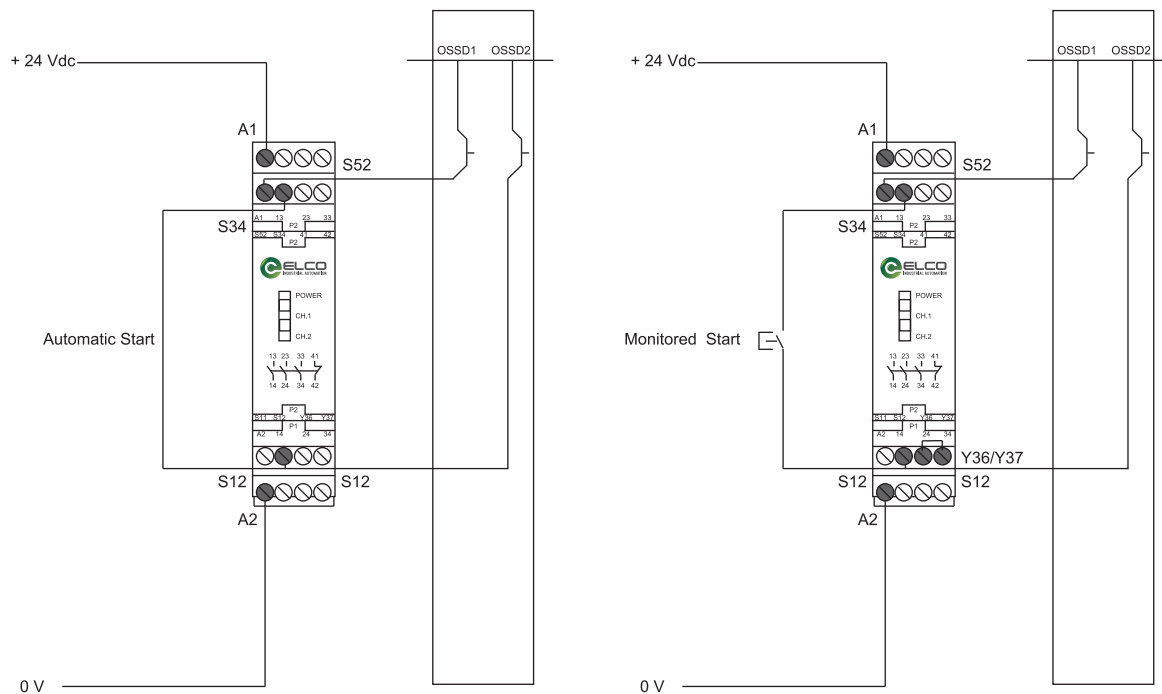
Pin	Color	Function
1	Brown	+24V DC
2	White	TEST
3	Blue	0V
4	Black	RANGE SELECTION
5	Grey	GND

Receiver:

Pin	Color	Function
1	White	RESET/RESTART
2	Brown	+24V DC
3	Green	EDM SELECTION
4	Yellow	EDM
5	Grey	OSSD1
6	Pink	OSSD2
7	Blue	0V
8	Red	MANUAL/AUTOMATIC RESTART

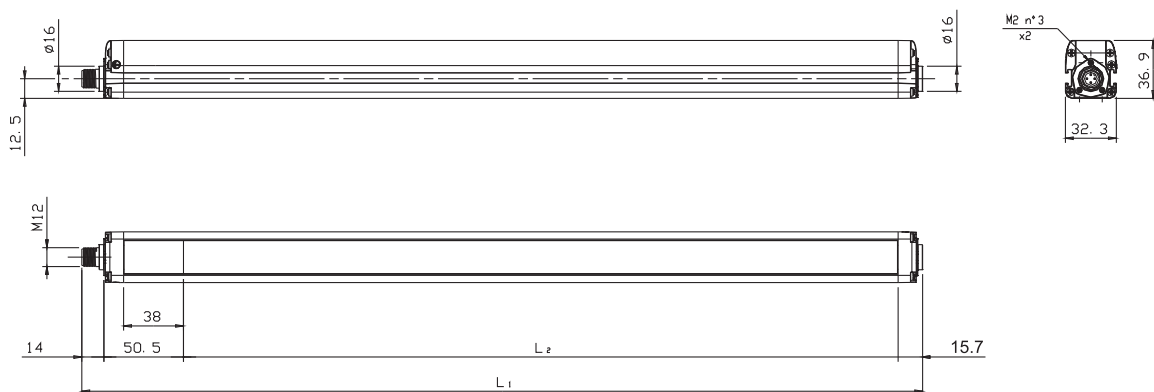
Safety Light Curtain SC2/SC4

Electrical connection With Safety Relay:



Dimensions:

SC Series



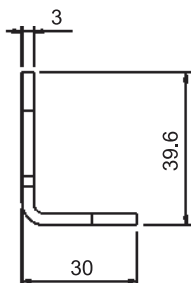
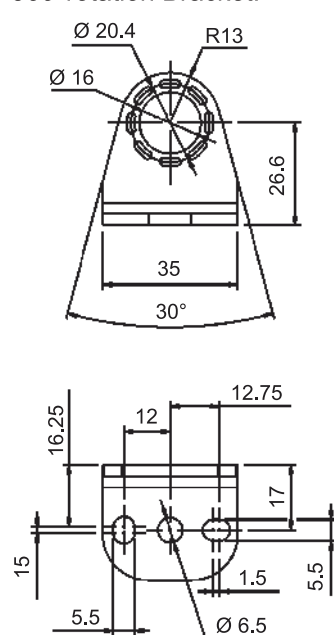
L_2 = Protective field height

L_1 = $L_2 + 14\text{mm} + 50.5\text{mm} + 15.7\text{mm}$

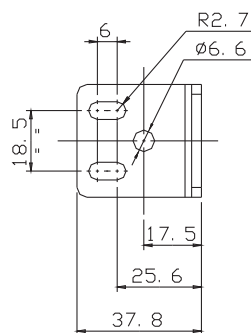
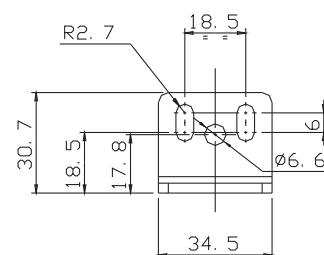
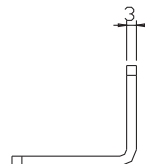
Safety Light Curtain SC2/SC4

Accessories:

360° rotation Bracket:



Mounting bracket:



Accessories parameter:

Type	Description
Bracket	
ST-K4ROT	360° rotation bracket
ST-KSTD	Fixing bracket
ST-K4AV	Anti-vibration support
Safety relay	
SE-SR2	Safety relay with SC series safety light curtain
Cable, 5-core, for transmitter	
CB-M12-03000E-5GF	M12, 5-pin (straight) with 3m shielding cable
CB-M12-05000E-5GF	M12, 5-pin (straight) with 5m shielding cable
CB-M12-10000E-5GF	M12, 5-pin (straight) with 10m shielding cable
CB-M12-15000E-5GF	M12, 5-pin (straight) with 15m shielding cable
CB-M12-25000E-5GF	M12, 5-pin (straight) with 25m shielding cable
Cable, 8-core, for receiver	
CB-M12-03000E-8GF	M12, 8-pin (straight) with 3m shielding cable
CB-M12-05000E-8GF	M12, 8-pin (straight) with 5m shielding cable
CB-M12-10000E-8GF	M12, 8-pin (straight) with 10m shielding cable
CB-M12-15000E-8GF	M12, 8-pin (straight) with 15m shielding cable
CB-M12-25000E-8GF	M12, 8-pin (straight) with 25m shielding cable

<< Safety Products

Emergency Stop Module-SR22



Safety Products:

Compact design, thickness of 22.5mm, detachable terminals.

Features:

- Single and 2-channel operation
- LED indicator for state of operation
LED indicator for channel 1 and 2
- Automatic/manual restart
- With or without cross fault monitoring in the E-stop loop

Type Selection :

Type	Description	Supply voltage	Input channel	Safety output	Auxiliary output
SR22-31/24VUC	Emergency Stop Module	24VDC/AC	2	3	1

Technical data:

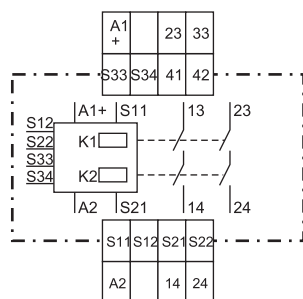
Nominal Voltage UN	AC/DC 24 V	Switching capacity to DC 13	
Voltage range AC / DC at 10% residual ripple	0.9 ... 1.1 UN	NO contacts	4 A / DC 24 V IEC/EN 60 947-5-1
Nominal consumption at UN	DC approx. 1.5 W		0.5 A / 110 V IEC/EN 60 947-5-1
	AC approx. 3.7 VA	NC contacts	4 A / 24 V IEC/EN 60 947-5-1
Min. Off-time	250 ms	Switching capacity to DC 13	
Control voltage on S11 at UN	DC 22 V at AC/DC units	NO contacts	8 A / 24 V > 25 x 103
Control current typ. over S12, S22	25 mA at UN		ON: 0.4 s, OFF: 9.6 s
Min. voltage on S12, S22 when relay activated	DC 20 V at AC/DC units	Electrical contact lifeto 5 A, AC 230 V $\cos \varphi = 1$	> 2.2 x 105 switching cycles
Short-circuit protection	Internal PTC	Permissible operating frequency	max. 1 200 operating cycles / h
Overvoltage protection	Internal VDR	Short circuit strength	
Contacts	SR22-20/24VUC: 2 NO contacts	max. fuse rating	10 A gL IEC/EN 60 947-5-1
	SR22-31/24VUC: 3 NO, 1 NC contact	Line circuit breaker	B 6 A
Operate delay typ. at UN	Manual start: 30 ms	Mechanical life	> 20 x 106 switching cycles
	automatic start: 350 ms	Weight	220 g
Release delay typ. at UN		Dimensions	22.5 x 90 x 121 mm
Disconnecting the supply	150 ms at AC units	Operating mode	Continuous operation
	50 ms at DC units	Temperature range operation	- 15 ... + 55 °C
Disconnecting S12, S22	130 ms at AC units	Temperature range storage	- 25 ... + 85 °C
	50 ms at DC units	Altitude	< 2.000 m
Contact type	forcibly guided		
Nominal output voltage	AC 250 V	Rated impuls voltage/pollution degree	
	DC: see limit curve for arc-free operation	Electrostatic discharge	8 kV (air) IEC/EN 61 000-4-2
Thermal currentIth	max. 8 A per contact	HF irradiation	10 V / m IEC/EN 61 000-4-3
	see current limit curve	Fast transients	2 kV IEC/EN 61 000-4-4
Switching capacity to AC 15		Surge voltages between wires for power supply	1 kV, 0.5 kV IEC/EN 61 000-4-5
NO contacts 3A/AC 230V	IEC/EN 60 947-5-1		24 V at AC/DC units
NC contacts 2A/AC 230V	IEC/EN 60 947-5-1		

Emergency Stop Module-SR22

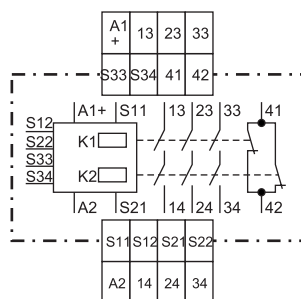
Surge voltages between wire and ground	2 kV IEC/EN 61 000-4-5	Insulation of wires or sleeve length	8 mm
Interference suppression	Limit value class B EN 55 011	Plug in with screw terminals max. cross	
Protection degree of housing	IP 40 IEC/EN 60 529	section for connection	
Protection degree of terminals	IP 20 IEC/EN 60 529		1 x 2.5 mm ² solid or
Vibration resistance	Amplitude 0.35 mm IEC/EN 60 068-2-6		1 x 2.5 mm ² stranded ferruled
	frequency 10 ... 55 Hz	Insulation of wires or sleeve length	8 mm
Climate resistance	15 / 055 / 04 IEC/EN 60 068-1	Plug in with cage clamp terminals max.	
Terminal designation	EN 50 005	cross section for connection	
Wire connection	DIN 46 228-1/-2/-3/-4		1 x 4 mm ² solid or
Screw terminals(integrated)	1 x 4 mm ² solid or		1 x 2.5 mm ² stranded ferruled
	1 x 2.5 mm ² stranded ferruled or	min. cross section for connection	0.5 mm ²
	2 x 1.5 mm ² stranded ferruled or		
	2 x 2.5 mm ² solid		

Safety related data			
Values according to EN ISO 13849-1		Values according to IEC EN 62061 / IEC EN 61508	
Category	4	SIL CL	3 IEC EN 62061
PL	e	SIL	3 IEC EN 61508
MTTF _d	> 100 a	HFT*)	1
DC _{avg}	99.0 %	DC _{avg}	99.0 %
d _{op}	365 d/a (days/year)	SFF	99.7 %
h _{op}	24 h/d (hours/day)	PFH _d	2.66E-10 h ⁻¹
t _{zyklus}	3600 s/Zyklus	*) HFT = Hardware-Failure Tolerance	
	± 1 /h (hour)		

Circuit Diagram:

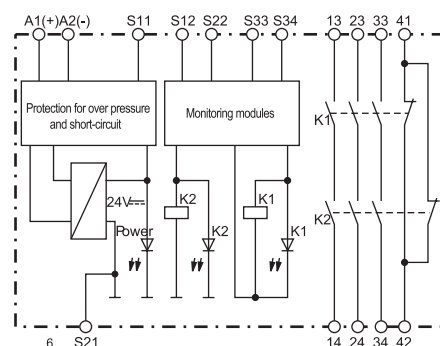


SR22-20/24VUC



SR22-31/24VUC

Electric Wiring Diagram:



SR22