

**SAFEasy™ TYPE 4 LIGHT CURTAINS**

- *Integrated light curtains for FINGER PROTECTION (14 mm resolution)*
- *EDM and Blanking functions*
- *Cascade configuration*
- *35 x 40 mm compact profile*

## SE4-PLUS FINGER SERIES

The **SAFEasy™** light curtains, according to the IEC 61496-1 and IEC 61496-2, are particularly suitable for finger protection of operators exposed to risks.

Different models are available with heights ranging from 150 to 1200 mm, 14 mm resolution and operating distance reaching 6 m. Each model has one or more advanced functions: EDM, Blanking and Cascade. The light curtains are able to verify the integrity of external monitoring devices thanks to the EDM (External Device Monitoring) function. The Blanking function allows to deactivate a part of the detection area during functioning, allowing material passage or mechanical obstacle presence without causing machine interruption. Fixed Blanking and Floating Blanking can be selected. The Cascade configuration allows to combine the functioning of a couple of light curtains positioned in different areas.

Specific dip-switches, that can be reached through a slot present on the front of the active unit protected by a lid that and opened with a simple screwdriver, guarantee a rapid and safe configuration.

The compact dimensions (35 x 40 mm), easy installation and excellent performances make the **SAFEasy™** light curtains suitable to industrial applications requiring operator safety.

# SAFeasy™ TYPE 4 LIGHT CURTAINS

The features introduced by the safety light curtains of the SE4-PLUS FINGER series are given below:

- **EDM function:** allows to verify the status of the external monitoring devices (typically safety relays), avoiding external malfunctions jeopardising correct device functioning.

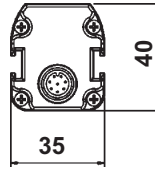
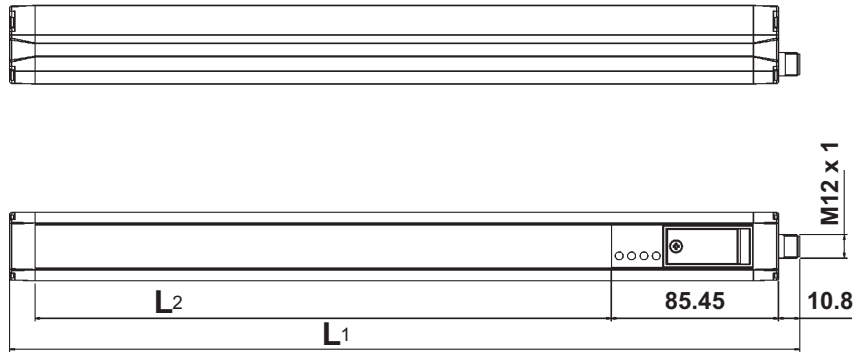
- **Fixed Blanking:** allows the operator to exclude the control of beams in a pre-set position.

- **Floating Blanking:** allows the operator to exclude the control of a pre-set number of beams in any position within the detection area.

- **Cascade configuration:** a couple of light curtains can function connected to each other in accordance to a Master-Slave protocol and combining the safety information relative to the two different sections of the controlled machine. The Master unit has a Blanking function and can be used without the Slave unit.

Models with the Muting function are not available in the SE4-PLUS FINGER series.

## DIMENSIONS



VERSIONI	L <sub>1</sub>	L <sub>2</sub>
SE4-xx-015-PP-y	256	147
SE4-xx-030-PP-y	403	294
SE4-xx-045-PP-y	550	441
SE4-xx-060-PP-y	697	588
SE4-xx-075-PP-y	844	735
SE4-xx-090-PP-y	991	882
SE4-xx-105-PP-y	1138	1029
SE4-xx-120-PP-y	1285	1176

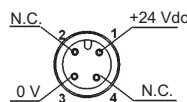
mm

## CONNECTIONS

Model	Emitter	Receiver
EDM	M12 4-poles	M12 8-poles
EMD+Blanking	M12 4-poles	M12 8-poles
EDM+Cascade (Master)*	M12 4-poles +M12 5-poles	M12 8-poles +M12 5-poles
EDM+Cascade (Slave)	M12 5-poles	M12 5-poles
EDM+Cascade+Blanking (Master)*	M12 4-poles +M12 5-poles	M12 8-poles +M12 5-poles

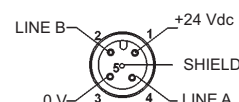
\* an electric terminal is supplied for the Master Cascade models for the M12 5-pole connection in order to use the Master unit without connecting the Slave unit

### 4-POLE M12 CONNECTOR



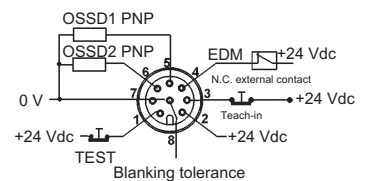
- 1 = brown = +24 Vdc
- 2 = white = N.C.
- 3 = blue = 0 V
- 4 = black = N.C.

### 5-POLE M12 CONNECTOR



- 1 = brown = +24 Vdc
- 2 = white = LINE A
- 3 = blue = 0 V
- 4 = black = LINE B
- 5 = grey = SHIELD

### 8-POLE M12 CONNECTOR



- 1 = white = TEST/START
- 2 = brown = +24 Vdc
- 3 = green = TEACH-IN
- 4 = yellow = EDM
- 5 = grey = OSSD1
- 6 = pink = OSSD2
- 7 = blue = 0 V
- 8 = red = BLANKING TOLERANCE

## TECHNICAL DATA

<b>Power supply:</b>	24 Vdc $\pm$ 20% (SELV / PELV)
<b>Consumption:</b>	55 mA max. / 1.5. W (emitter) 125 mA max. / 3.75 W (receiver without load)
<b>Light emission:</b>	infrared LED 880 nm
<b>Number of controlled beams:</b>	refer to table 1
<b>Optic interaxis:</b>	7 mm
<b>Resolution:</b>	14 mm
<b>Controlled height:</b>	refer to table 2
<b>Through beam operating distance:</b>	0.2 ... 6 m
<b>Receiver indicators:</b>	green / red SAFE/ BREAK LED 2 yellow ALIGNMENT LEDs green POWER ON LED
<b>Emitter indicators:</b>	yellow blinking FAILURE LED green POWER ON LED
<b>Output type:</b>	2 PNP
<b>Output current:</b>	0.5 A max., short-circuit protection
<b>Response time:</b>	refer to table 3
<b>Selectable functions:</b>	refer dip-switches
<b>Receiver connection:</b>	refer to connections
<b>Emitter connection:</b>	refer to connections
<b>Cable length:</b>	50 m max. (with 50 nF capacitive load)
<b>Safety category:</b>	Type 4
<b>Electrical protection:</b>	class 1
<b>Mechanical protection:</b>	IP65
<b>Housing material:</b>	aluminium with PC Makrolon plastic caps
<b>Weight:</b>	1.2 Kg max. / m of total height
<b>Operating temperature:</b>	-10 ... +55 °C
<b>Storage temperature:</b>	-25 ... +70 °C
<b>Reference standards:</b>	EN 954-1, IEC 61496-1, IEC 61496-2

## TABLES

Model	Beams
SE4 height 150	21
SE4 height 300	42
SE4 height 450	63
SE4 height 600	84
SE4 height 750	105
SE4 height 900	126
SE4 height 1050	147
SE4 height 1200	168

**Table 1: NUMBER OF BEAMS**

Model	mm
SE4 height 150	161
SE4 height 300	308
SE4 height 450	455
SE4 height 600	602
SE4 height 750	749
SE4 height 900	896
SE4 height 1050	1043
SE4 height 1200	1190

**Table 2: CONTROLLED HEIGHT**

Model	ms
SE4 height 150	21
SE4 height 300	28
SE4 height 450	35
SE4 height 600	41
SE4 height 750	48
SE4 height 900	55
SE4 height 1050	62
SE4 height 1200	68

**Table 3: RESPONSE TIME**

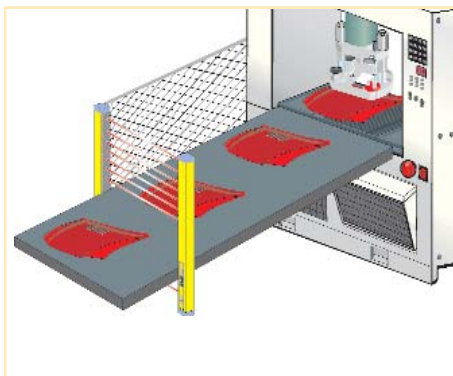


**DIP-SWITCHES**

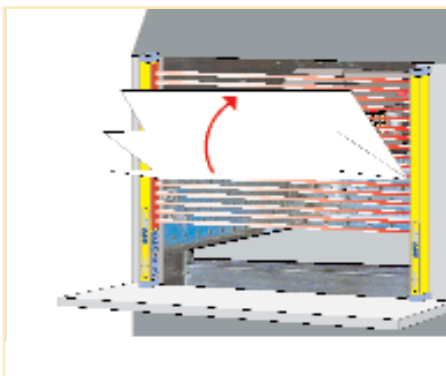
- 1 - Floating function: refer to table
- 2 - Floating function: refer to table
- 3 - EDM inactive (ON) / EDM active (OFF)
- 4 - Automatic (ON) / manual (OFF) reset

DIP1	DIP2	FUNCTION
ON	ON	Floating function active,
ON	OFF	Floating function active, 1 Blanking beam
OFF	ON	Floating function active, 2 adjacent Blanking beams
OFF	OFF	Floating function active, 1, 2 or 3 adjacent Blanking beams

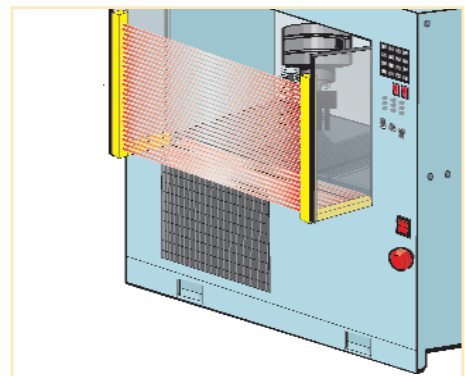
## FUNCTIONING MODE



Example of 'Fixed Blanking'



Example of 'Floating Blanking'



Example of 'Cascade' configuration

## SELECTION AND ORDER INFORMATION TABLE

MODEL	DESCRIPTION	FUNCTION	ORDER N°
SE4-14-015-PP-E	Type 4 safety light curtain	EDM	957201810
SE4-14-030-PP-E	Type 4 safety light curtain	EDM	957201820
SE4-14-045-PP-E	Type 4 safety light curtain	EDM	957201830
SE4-14-060-PP-E	Type 4 safety light curtain	EDM	957201840
SE4-14-075-PP-E	Type 4 safety light curtain	EDM	957201850
SE4-14-090-PP-E	Type 4 safety light curtain	EDM	957201860
SE4-14-105-PP-E	Type 4 safety light curtain	EDM	957201870
SE4-14-120-PP-E	Type 4 safety light curtain	EDM	957201880
SE4-14-015-PP-B	Type 4 safety light curtain	EDM, Blanking	957202000
SE4-14-030-PP-B	Type 4 safety light curtain	EDM, Blanking	957202010
SE4-14-045-PP-B	Type 4 safety light curtain	EDM, Blanking	957202020
SE4-14-060-PP-B	Type 4 safety light curtain	EDM, Blanking	957202030
SE4-14-075-PP-B	Type 4 safety light curtain	EDM, Blanking	957202040
SE4-14-090-PP-B	Type 4 safety light curtain	EDM, Blanking	957202050
SE4-14-105-PP-B	Type 4 safety light curtain	EDM, Blanking	957202060
SE4-14-120-PP-B	Type 4 safety light curtain	EDM, Blanking	957202070
SE4-14-015-PP-M	Type 4 safety light curtain	EDM, Master	957202200
SE4-14-030-PP-M	Type 4 safety light curtain	EDM, Master	957202210
SE4-14-045-PP-M	Type 4 safety light curtain	EDM, Master	957202220
SE4-14-060-PP-M	Type 4 safety light curtain	EDM, Master	957202230
SE4-14-075-PP-M	Type 4 safety light curtain	EDM, Master	957202240
SE4-14-090-PP-M	Type 4 safety light curtain	EDM, Master	957202250
SE4-14-105-PP-M	Type 4 safety light curtain	EDM, Master	957202260
SE4-14-120-PP-M	Type 4 safety light curtain	EDM, Master	957202270
SE4-14-015-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202400
SE4-14-030-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202410
SE4-14-045-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202420
SE4-14-060-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202430
SE4-14-075-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202440
SE4-14-090-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202450
SE4-14-105-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202460
SE4-14-120-PP-N	Type 4 safety light curtain	EDM, Master Blanking	957202470
SE4-14-015-PP-S	Type 4 safety light curtain	Slave	957202600
SE4-14-030-PP-S	Type 4 safety light curtain	Slave	957202610
SE4-14-045-PP-S	Type 4 safety light curtain	Slave	957202620
SE4-14-060-PP-S	Type 4 safety light curtain	Slave	957202630
SE4-14-075-PP-S	Type 4 safety light curtain	Slave	957202640
SE4-14-090-PP-S	Type 4 safety light curtain	Slave	957202650
SE4-14-105-PP-S	Type 4 safety light curtain	Slave	957202660
SE4-14-120-PP-S	Type 4 safety light curtain	Slave	957202670

## ACCESSORIES SELECTION AND ORDER INFORMATION TABLE

MODEL	DESCRIPTION	ORDER N°
CV-A1-23-B-005-2F	M12 5-pole shielded axial 0.5 m connector	95ACC2440
CV-A1-23-B-01-2F	M12 5-pole shielded axial 1 m connector	95ACC2450
SE-C	5 pole-connector cap <i>(supplied with the product)</i>	95ACC2460

Please refer to **Safety Device Accessories**

**Note:** all accessories have to be ordered separately



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### HEADQUARTERS

#### DATASENSOR SpA

via Lavino, 265 - 40050 Monte San Pietro, BO - Italy  
Tel. +39 051/6765611 • Fax +39 051/6759324  
www.datasensor.com • e-mail info@datasensor.com

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