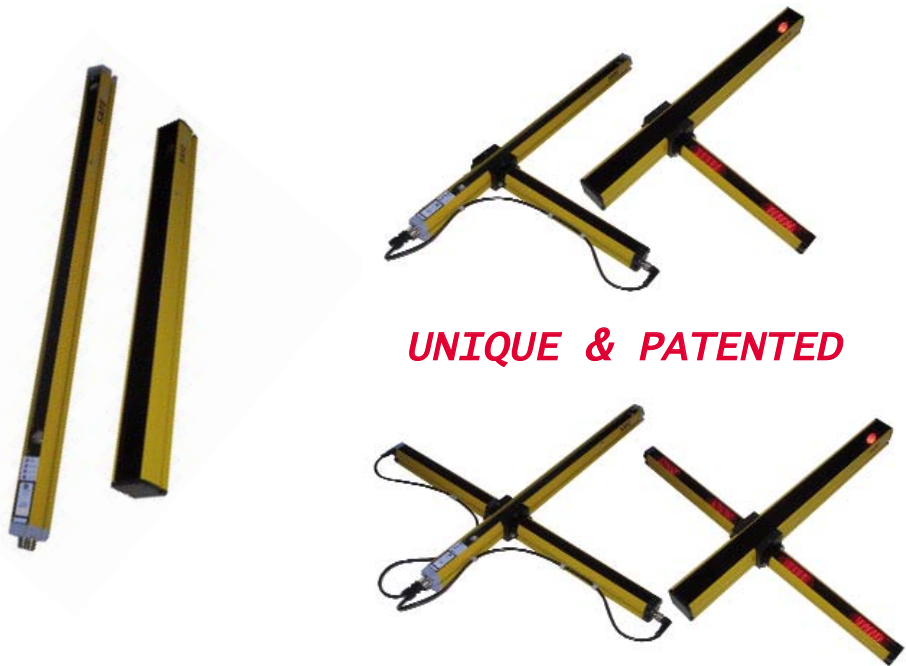# *SAFEasy*™ TYPE 4 LIGHT CURTAINS

Type 4

UNIQUE & PATENTED

- *Integrated light curtains for <u>BODY PROTECTION</u>*
- *Versions with 2 beams, 500 mm controlled height*
- *Configurable Restart, Muting and EDM functions*
- *Retroreflex active unit with compact 35x40 mm profile*
- *Passive unit with integrated mirrors or accessory mirrors*

SE4-R SERIES

The *SAFEasy*™ light curtains, conforming with the IEC 61496-1 and IEC 61496-2 standards, are particularly suitable for body protection of operators exposed to risk.

The device is composed of a **SE4-RA1** active unit, contained inside a sturdy aluminium profile and a **SE4-RDB** passive unit developed with integrated reflectors, or with 2 **SE4-RSM** deviating mirrors supplied as accessories.

The detection height is 500 mm and the operating distance reaches 7.5 m for the linear version or 3 m for the 'L' and 'T' versions. The Restart, Muting, EDM and Muting time-out functions are integrated and selectable through the dip-switches present in the active unit.

'L' or 'T' shaped versions are available for applications requiring the Muting function, equipped with one or two active bars with integrated retroreflective sensors on one side and one or two passive bars with integrated reflectors on the other side.

DATASENSOR IS THE FIRST AND UNIQUE MANUFACTURER TO OFFER THIS PATENTED SOLUTION ON THE MARKET.

The SE4-R light curtains represent a reliable and cost-effective alternative to light curtains with active units on emitter and receiver sides thanks to reduced costs and installation time as well as the advantage of cabling only the active unit.

DATASENSOR
value through detection

SAFEASY™ TYPE 4 LIGHT CURTAINS

The main features of the SE4-R safety light curtains are:

- passive unit with integrated reflectors or accessory deviating mirrors orientable thanks to simple screw adjustments;

- device configuration through specific dip-switches postioned on the front of the active unit for the selection of the manual or automatic reset, the number of Muting selection (if present), Muting time-out of 10 minutes or infinitive and the EDM function for the control of external relays;

- Muting lamp integrated on the active unit;

- easy cabling thanks to two M12 8-pole and 5-pole connectors present on the active unit. The 5-pole connector requires connection only if the Muting function is activated;

- 'L' and 'T' versions are available for Muting applications with active bars and integrated retroreflex sensors and passive bars with integrated reflectors;

- sensor and reflector bars are available as accessories to be mounted to the linear SE4-R vesions to obtain 'L' and 'T' configurations.
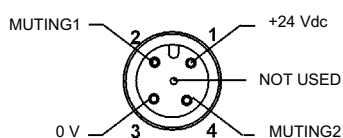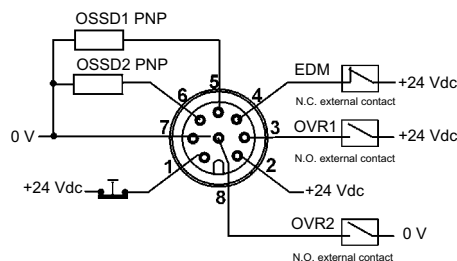

FAST & EASY CABLING

CONNECTIONS

M12 5-POLE CONNECTOR

1 = brown = +24 Vdc
2 = white = MUTING 1
3 = blue = 0 V
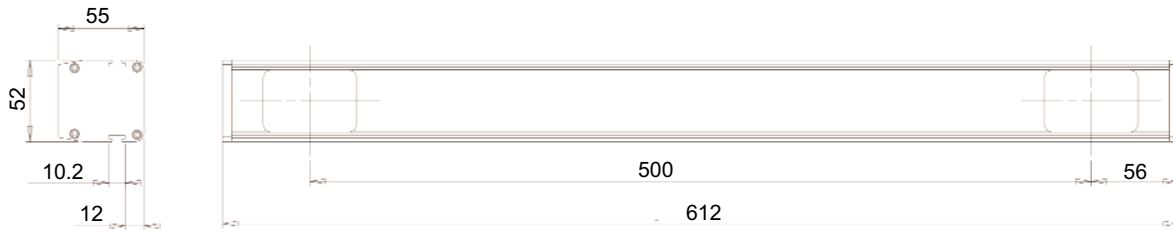4 = black = MUTING 2
5 = grey = NOT USED
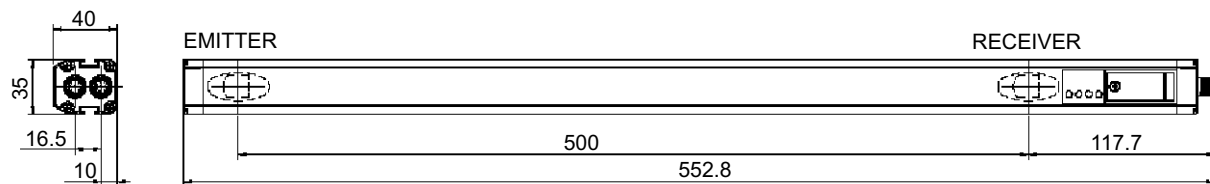
M12 8-POLE CONNECTOR

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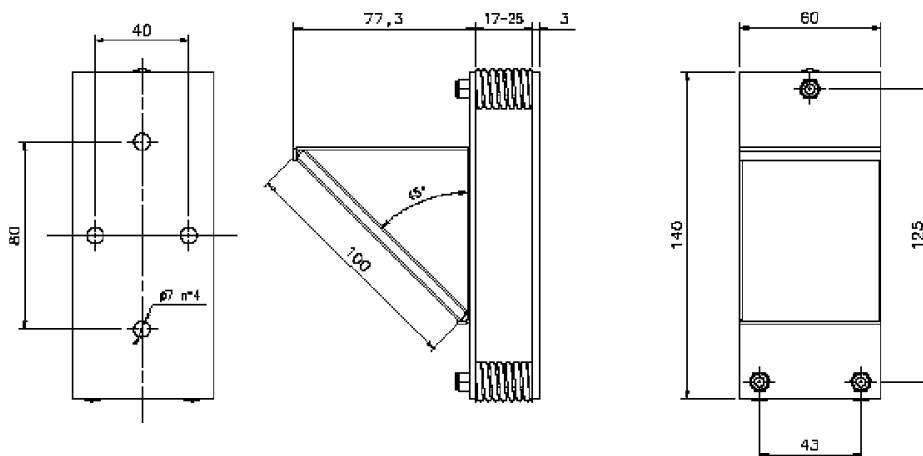7 = blue = 0 V
8 = red = OVERRIDE 2

DATASENSOR

DIMENSIONS - LINEAR VERSION

PASSIVE UNIT

55

52

10.2

12

500

612

56

ACTIVE UNIT

40

35

16.5

10

EMITTER

RECEIVER

500

552.8

117.7

DEVIATING MIRRORS

40

80

80

⌀7 n°4

77,3   17-25   3

45°

100

60

140

125

43

mm

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DIMENSIONS - 'L' VERSION

PASSIVE UNIT

SE4-RDBL
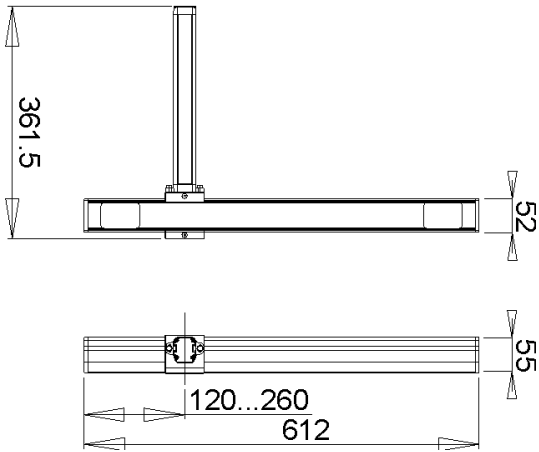
SE4-RLR
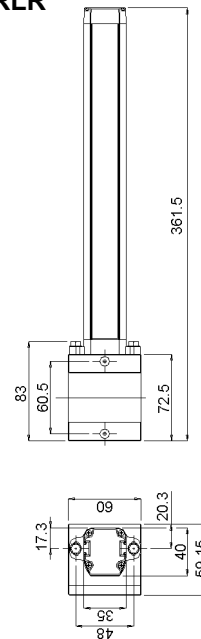
ACTIVE UNIT

SE4-RA1L-PP-W

SE4-RLS

mm

DATASENSOR
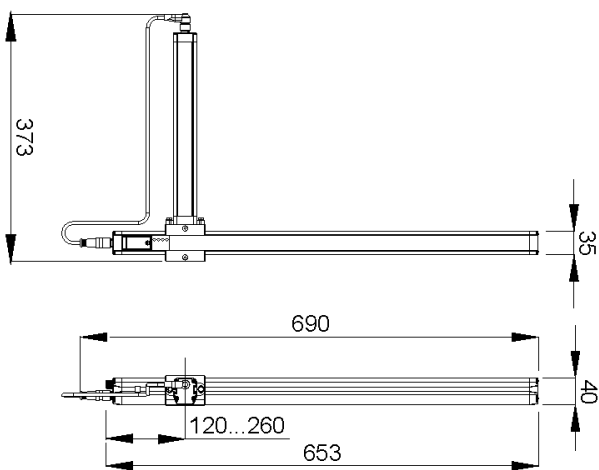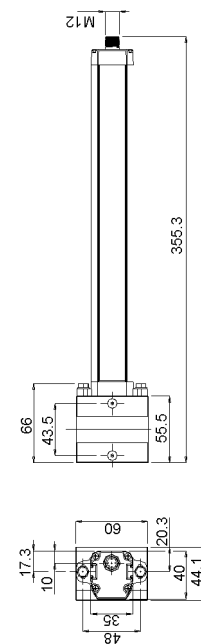
DIMENSIONS - 'T' VERSION

PASSIVE UNIT

SE4-RDBT

650.5

52

55

120...260

612

SE4-RTR

289

93.5
60.5
72.5
650.5

60
20.3
17.3
40
59.15
35
48

ACTIVE UNIT

SE4-RA1T-PP-W

691

35

690

40

120...260

653

SE4-RTS

299.8

76.5
43.5
55.5
655.1

M12

60
20.3
17.3
10
40
44.1
35
48

mm

DATASENSOR
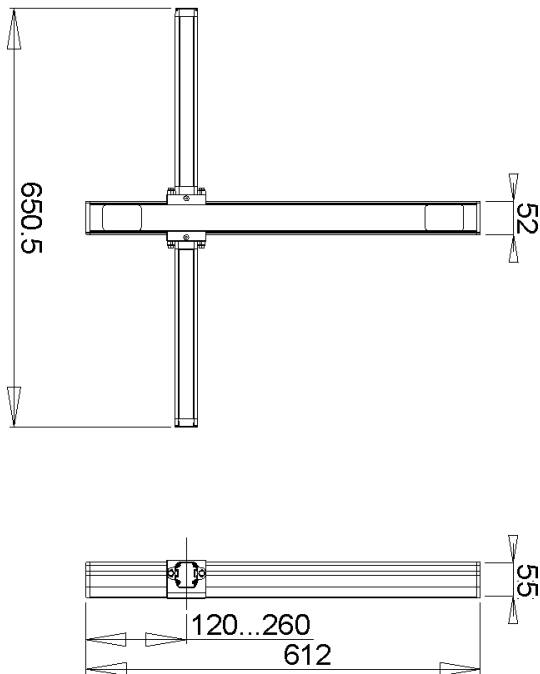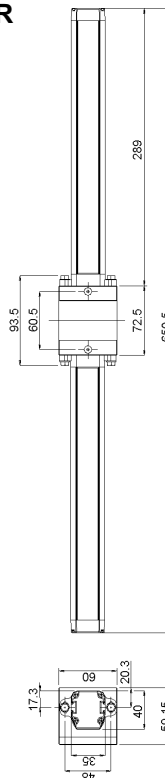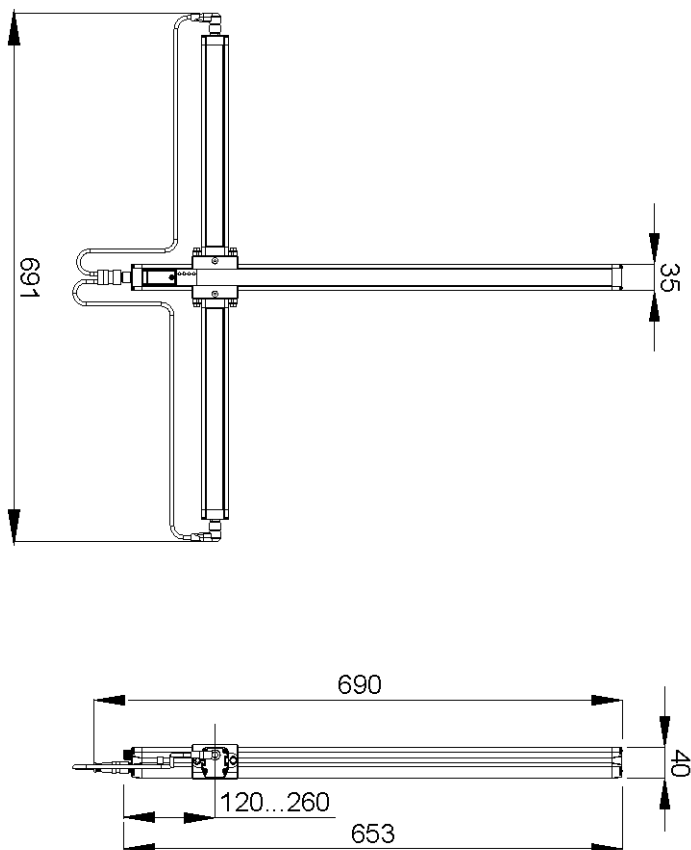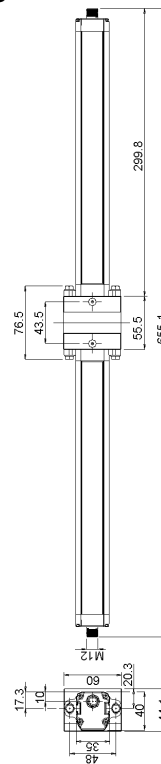
TECHNICAL DATA

Power supply:	24 Vdc ± 20% *(SELV / PELV)*
Active unit consumption:	100 mA max. *(without load)* / 3 W
Light emission:	infrared LED 880 nm
Optic diameter:	Ø 16 mm
Number of controlled beams:	2
Controlled height:	500 mm
Resolution:	515 mm
Active unit - mirrors operating distance:	0.5 ... 7.5 m (linear version)
	0.5 ... 3 m ('L' and 'T' versions)
Active unit indicators:	green/red SAFE/BREAK LED
	2 yellow ALIGNMENT LEDs
	green POWER ON LED
Outputs:	2 PNP [1]
Output current:	0.5 A max., short-circuit protection
Response time:	14 ms
Available functions:	Test
	automatic/manual reset
	EDM
	Override
Muting signal activation timing:	max. 4 sec.
Muting time-out:	Muting: 10 minutes / infinitive
	Override: 2 minutes
Muting signalling lamp:	integrated LED in active unit
Active unit connection:	M12 5-pole connector
	M12 8-pole connector
Cable length:	50 m max[2] *(with 50 nF of capacitive load)*
Safety category:	Type 4
Electrical protection:	class 1
Mechanical protection:	IP65
Housing material:	aluminium with PC Makrolon plastic caps
Weight:	active unit: 900 g
	passive unit: 1500 g
	deviating mirrors: 600 g
Operating temperature:	-10 ... +55 °C
Storage temperature:	-25 ... +70 °C
Reference standard:	EN 954-1, IEC 61496-1, IEC 61496-2

DIP-SWITCHES
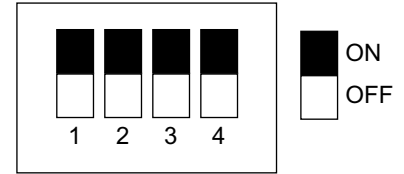
DIP-SWITCHES
1 - 10 min. (ON) / infinite (OFF) Muting time-out
2 - 'T' mode (ON) / 'L' mode (OFF)
3 - EDM inactive (ON) / EDM active (OFF)
4 - Automatic (ON) / manual (OFF) Restart

TECHNICAL NOTES

[1] *NPN versions available on request*
[2] *If a longer cable is used, ensure the respect of the specifications*

CE ⬡ TÜV c (UL) US LISTED ⟨Ex⟩ II3D

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APPLICATION EXAMPLES

The new **SE4-R** light curtains are recommended above all for Body Protection and Area Access Control, in order to create a protective barrier in dangerous areas, including robotic cells, transfer stations, palletizers and loading machines in a broad range of various industries (warehousing, bottling, ceramic, automotive, etc).
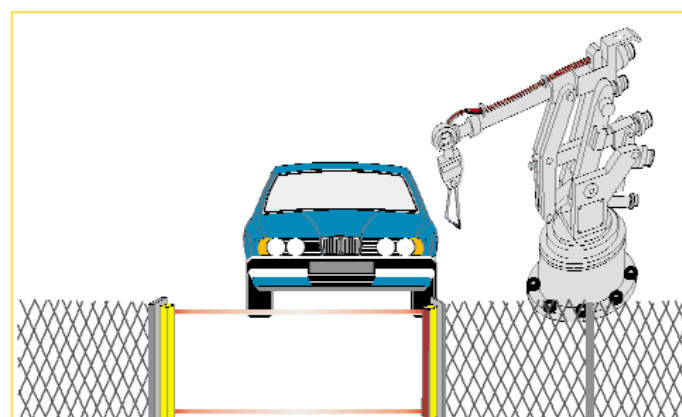The 'L' version for one-way Muting, or the 'T' version for two-way Muting are suitable for applications where the material has to enter and exit the dangerous area, but the operator must be detected in order to stop the machine or dangerous work.
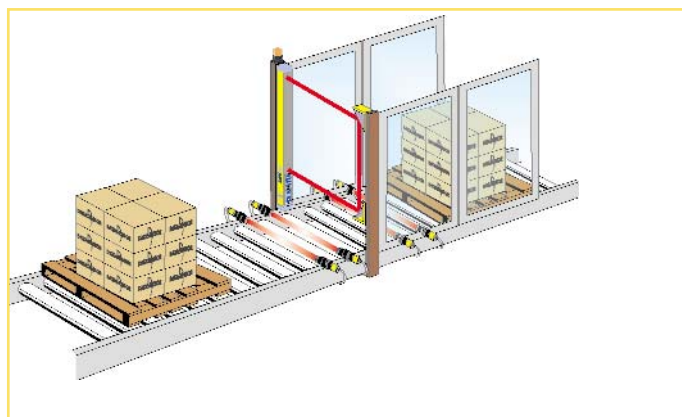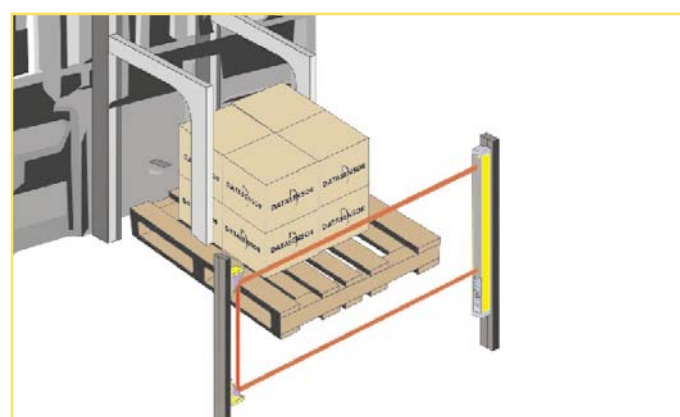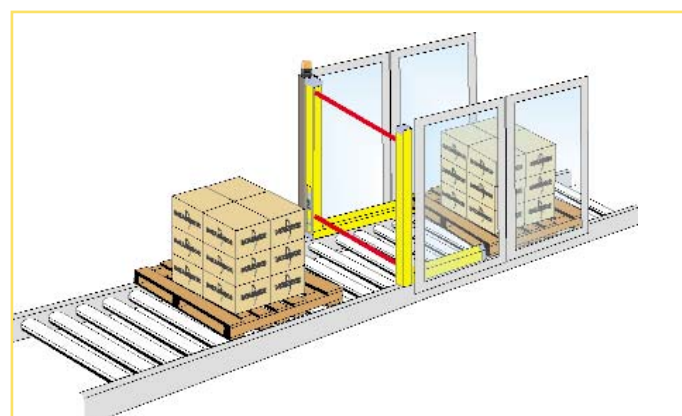

PALLETTISERS
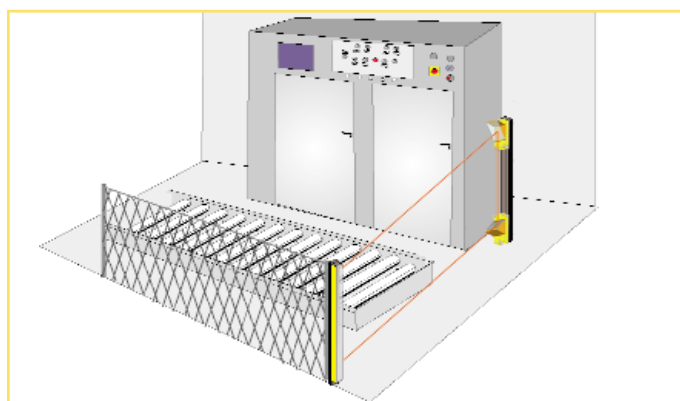
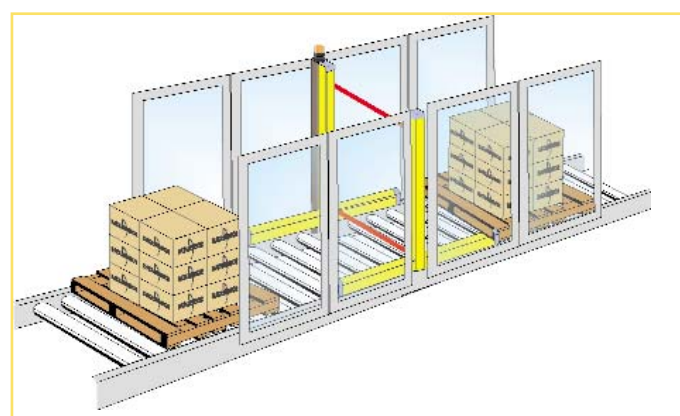**CONVEYORS**

ROBOTS

MATERIALS HANDLING AREAS

VERSION WITH 'L' INTEGRATED MUTING SENSORS FOR UNIDIRECTIONAL MUTING

VERSION WITH 'T' INTEGRATED MUTING SENSORS FOR BIDIRECTIONAL MUTING

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MODEL SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	ORDER N°
SE4-RA1-PP-W	Linear version - active unit H=500 PNP-PNP-NA	957401000
SE4-RDB	Linear version - passive unit with integrated reflectors H=500	957401010
SE4-RA1L-PP-W	'L' version - active unit H=500 PNP-PNP-NA	957401020
SE4-RDBL	'L' version - passive unit with integrated reflectors H=500	957401030
SE4-RA1T-PP-W	'T' version - active unit H=500 PNP-PNP-NA	957401040
SE4-RDBT	'T' version - passive unit with integrated reflectors H=500	957401050

Note: the system composed by the SE4-RA1-PP-W active unit and the SE4-RDB passive unit (to be ordered separately) should be preferred because, in this case, the integrated mirrors are already aligned with each other and are completely protected inside the profile.

ACCESSORY SELECTION AND ORDER INFORMATION

MODEL	DESCRIPTION	N° ORDINE
SE4-RSM	Deviating mirrors 60X100 mm (1 pc)	95ASE1010
SE4-RLS	'L' active sensor bar	95ASE1030
SE4-RLR	'L' passive reflector bar	95ASE1040
SE4-RTS	'T' active sensor bar	95ASE1050
SE4-RTR	'T' passive reflector bar	95ASE1060
CV-Y1-02-B-007	M12 4-pole T Muting cable	95ACC2560
CV-L1-02-B-007	M12 4-pole L Muting cable	95ACC2570
CV-Y1-02-B-007	M12 4-pole cable 0.7 m for 'T' versions with integrated sensors	95ACC2560
CV-L1-02-B-007	M12 4-pole cable 0.7 m for 'L' versions with integrated sensors	95ACC2570

Note: a SE4-RA1-PP-W active unit and two accessory SE4-RSM deviating mirrors have to be ordered separately for the system with external mirrors. No SE4-RDB passive unit is necessary in this case.

Please refer also to **Safey Device Accessories**

SAFETY DEVICES

Distributed by:

HEADQUARTERS

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