

...safety at its best

DATASHEET



ISO 9001: 2000



Features

- Patented laser alignment system ILAS
(US Patent No. 6'124'586, EP 0 889 332 B1 and others)
- Up to 256 beams per system
- Fast response time
- Semi-conductor output (short-circuit proof)
- Optical synchronisation, no electrical cable needed between emitter and receiver
- Several protection fields with cascading (up to 3)
- Perimeter systems according to EN 999
- Simple installation and adjustment
- Several mounting kits available
- Modular construction (120 mm)
- Maintenance-free and inexpensive

Technical data

Optical

Resolution	14 or 30 mm (finger / hand)
Operating range	
- Resolution 14 mm	0 ... 9 m
- Resolution 30 mm	0 ... 18 m
	optional 6 m or 5 ... 30 m
Length of protective field	120 ... 2,280 mm

Electrical

Power supply	24 VDC \pm 20 %
Power supply ripple	< 10 % of U_{sp}
Current consumption	< 500 mA (without load)
Input (emitter)	Test input
Output (receiver)	2 channels PNP 24 V / 0.3 A short circuit protected
Time of self check when switching on U_{sp}	< 3 s
Diagnostics	LED display / OptiLink
Response time	see configuration
Inrush current	max 1 A / 20 ms

Mechanical

Profile cross section	30 x 40 mm
Enclosure rating	IP65
Temperature range	
- Operation	-20 ... +55°C
- Storage / Transport	-20 ... +60°C
Relative humidity	15 ... 95% non-condensing

Response time

Refer to ordering information	
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Electrical connection

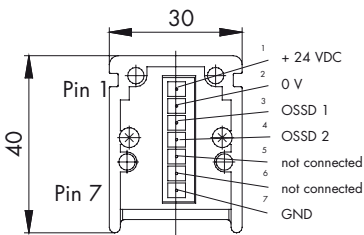
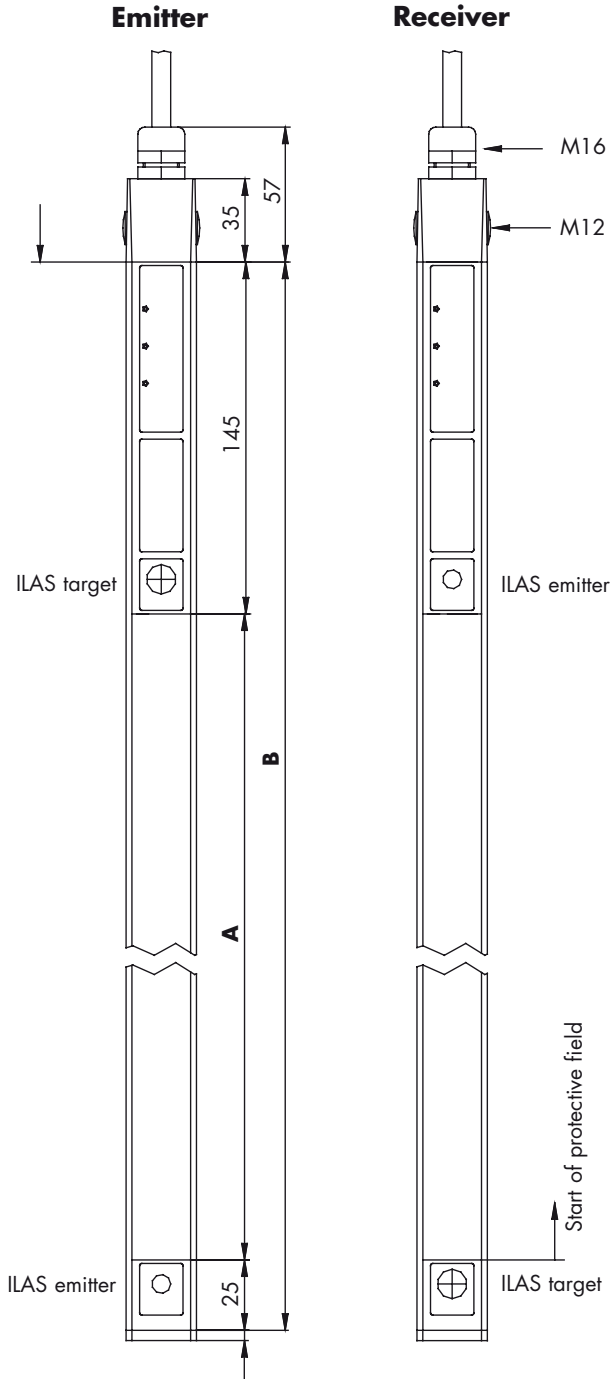
Length of connection cable	max. 60 m
Cross-section	min. 1.5 mm ²
Connecting plug	7-pole terminal block, optional M12, 5-pin
Cable gland	
- Axial	M16
- Radial	M12, 5-pin
	Guard only with automatic restart

General

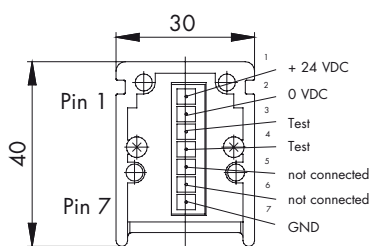
Safety category	4 PL e acc. to EN ISO 13849-1 or SILCL 3 acc. to EN 62061
Approvals	CE, CSA, TÜV, ISO 9001: 2000
ILAS laser class	2 (IEC 60825-1)
Standards	IEC 61496 Part 1+2
EMC	IEC 61496 Part 1

Dimensions

Systems with integrated controller and A cap



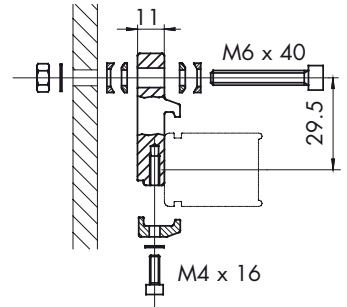
Receiver
cross section
terminal block



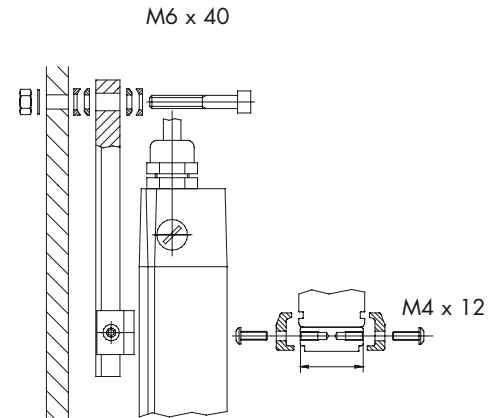
Emitter
cross section
terminal block

Mounting sets

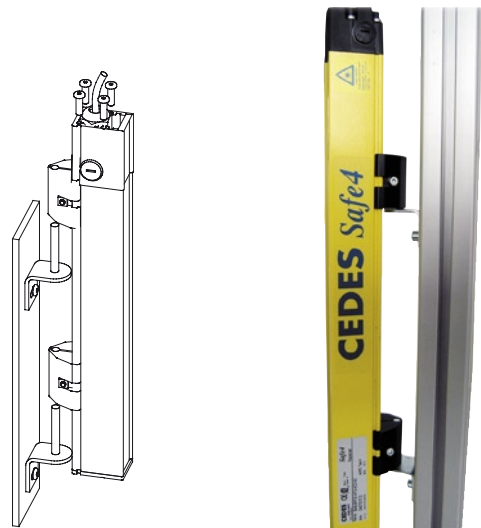
Standard mounting (Part No. 106 500)
on aluminum profile, adjustable by $\pm 4^\circ$

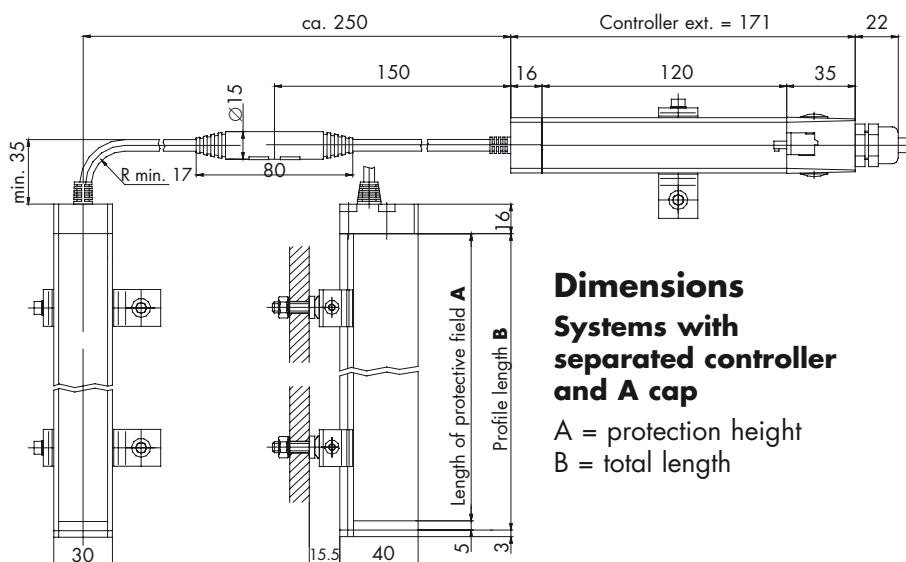


Vertical mounting (Part No. 106 502)
adjustable by $\pm 4^\circ$



180° Mounting (Part No. 106 497)
rotation $\pm 90^\circ$, for applications where the mounting
angle is not set using the mounting frame.

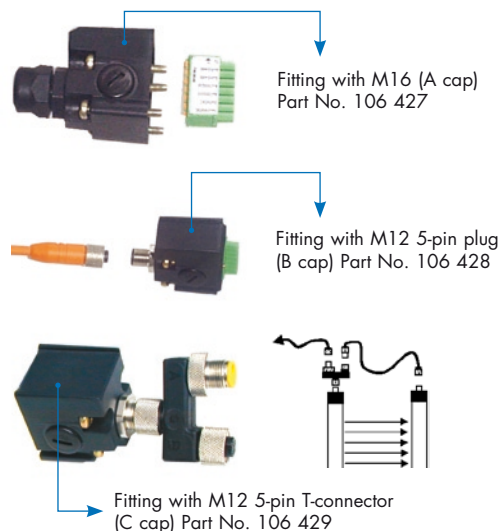




Dimensions Systems with separated controller and A cap

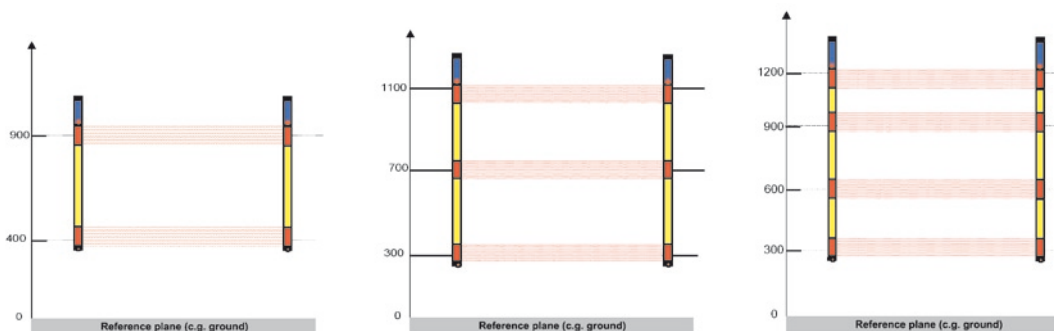
A = protection height
B = total length

Cable connection caps



Perimeter Systems

Safe4 2-, 3- or 4 beams perimeter system (according to EN 999) is suitable for access control.



Possible configurations

System structure	Possible configurations			
<p>Connection cap A, B or C cap</p>				
<p>Controller with LED display</p>				
<p>ILAS Laser alignment system</p>				
<p>Protection height</p> <p>Standard in mm</p> <p>120</p> <p>up to</p> <p>1,800</p> <p>in</p> <p>120 mm increments</p>				
<p>Laser target</p>				
<p>End piece</p>				
	<p>Standard version</p>	<p>System with separate controller</p>	<p>Two separate protective fields</p>	<p>Three separate protective fields</p>

Safe4 Ordering Information

System	With connection cap A	Operating Range	Resolution	Response time	Protective field length	Overall length	
Part No.	Description	(m)	(mm)	(ms)	(mm)	(mm)	
103 000 0002	Safe4-14-240	9	14	15.8	240	410	
103 000 0003	Safe4-14-360	9	14	21.1	360	536	
103 000 0004	Safe4-14-480	9	14	26.3	480	650	
103 000 0005	Safe4-14-600	9	14	31.6	600	771	
103 000 0006	Safe4-14-720	9	14	36.9	720	891	
103 000 0008	Safe4-14-960	9	14	47.5	960	1,131	
103 000 0010	Safe4-14-1200	9	14	58.1	1,200	1,372	
103 000 0012	Safe4-30-240	18	30				
103 000 0013	Safe4-30-360	18	30				
103 000 0014	Safe4-30-480	18	30	15.8	480	650	
103 000 0015	Safe4-30-600	18	30	18.4	600	771	
103 000 0016	Safe4-30-720	18	30	21.1	720	891	
103 000 0018	Safe4-30-960	18	30	26.3	960	1,131	
103 000 0020	Safe4-30-1200	18	30	31.6	1,200	1,372	
103 000 0023	Safe4-30-1560	18	30	39.6	1,560	1,733	
103 000 0025	Safe4-30-1800	18	30	44.9	1,800	1,973	

Above mentioned systems include transmitter and receiver edge, connection cap A, mounting kits 30 mm (2x106 500), no connection cables

Perimeter		Beams	Resolution	Reponse time	Range (m)
Art. Nr.	Beschreibung		(mm)	(ms)	(m)
103 002 0001	Safe4 / 600-P2-18m / A-System	2	420	10.5	18
103 002 0048	Safe4 / 600-P2-18m / B-System	2	420	10.5	18
103 002 0003	Safe4 / 840-P3-18m / A-System	3	300	13.2	18
103 002 0021	Safe4 / 840-P3-18m / B-System	3	300	13.2	18
103 002 0004	Safe4 / 960-P4-18m / A-System	4	300	15.8	18
103 002 0007	Safe4 / 960-P4-18m / B-System	4	300	15.8	18

Above mentioned systems include transmitter and receiver edge without connection cables, connection cap A or B, mounting kits 30mm (2 x 106 500)

Accessories / Spare parts*

Part No.	Description
106 427*	Connection Cap A (Cable Gland) Tx / Rx
102 862*	Connection Cap B (M12/5 Pin) Tx / Rx
106 429*	Connection Cap C (Double M12/5 Pin) Tx
301 347	Cable, 5m, M12-M12, 5pol, M-F)
102 792	Cable, 1m, MiniDin-MiniDin, 8pol, M-F, for cascading
102 793	Cable, 3m, MiniDin-MiniDin, 8pol, M-F, for cascading
106 500*	Mounting kit 30mm (2 brackets)
106 502	Mounting kit vertical 30mm (2 brackets)
106 497	Mounting kit 180° adj. 30mm (2 brackets)
106 501	Mounting kit silent block (2 pcs.)
103 006	Mirror 30
103 652	Mirror 60 with mounting column
102 965	ZCH Drawing opto edges Safe4/Safe2+
103 282	CD Configuration Tool / Optilink
104 565	OptiLink USB
103 105	Safety relay SafeC S
104 794	Safety relay SafeCIS3-2P-4IO

Special configurations available on request.