

... safety at its best



Features

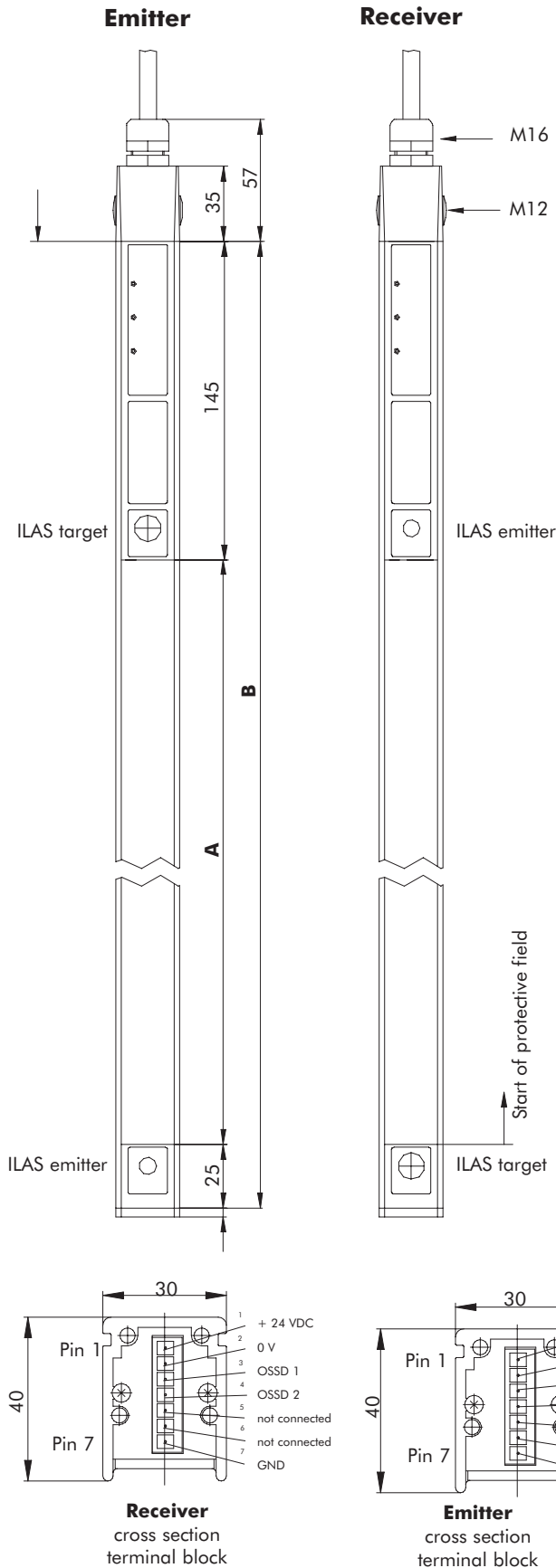
- Patented laser alignment system ILAS
(US Patent No. 6'124'586, EP 0 889 332 B1 and others)
- Up to 256 beams per system
- Fast response time
- Semi-conductor output (short-circuit proof)
- Optical synchronisation, no electrical cable needed between emitter and receiver
- Several protection fields with 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		Response time	
Resolution	14 or 30 mm (finger / hand)	Refer to ordering information	
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		
Max. ambient light	5,000 Lux		
Electrical		Electrical connection	
Power supply	24 VDC \pm 20 %	Length of connection cable	max. 60 m
Power supply ripple	< 10 % of U_{sp}	Cross-section	min. 1.5 mm ²
Current consumption	< 500 mA (without load)	Connecting plug	7-pole terminal block, optional M12, 5-pin
Input (emitter)	Test input	Cable gland	
Output (receiver)	2 channels PNP 24 V / 0.3 A short circuit protected	- Axial	M16
Time of self check when switching on U_{sp}	< 3 s	- Radial	M12, 5-pin
Diagnostics	LED display / OptiLink		Guard only with automatic restart
Response time	see configuration		
Inrush current	max 1 A / 20 ms		
Mechanical		General	
Profile cross section	30 x 40 mm	Safety Category	EN 954-1, Cat. 4
Enclosure rating	IP65	Approvals	CE, CSA, TÜV, ISO 9001: 2000
Temperature range		ILAS laser class	2 (IEC 60825-1)
- Operation	-20 ... +55°C	Standards	IEC 61496 Part 1+2
- Storage / Transport	-20 ... +60°C	EMC	IEC 61496 Part 1
Relative humidity	15 ... 95% non-condensing		

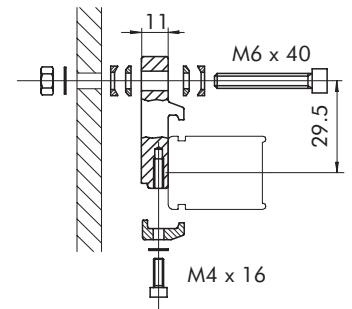
Dimensions

Systems with integrated controller and A cap

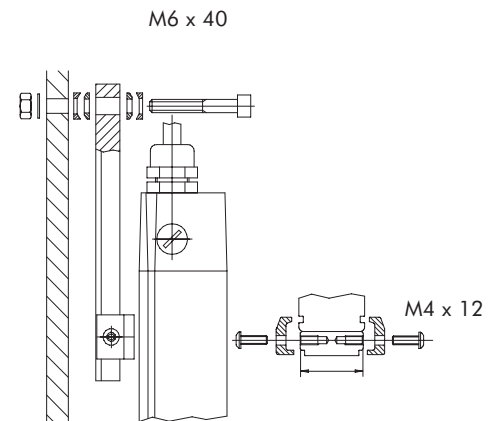


Mounting sets

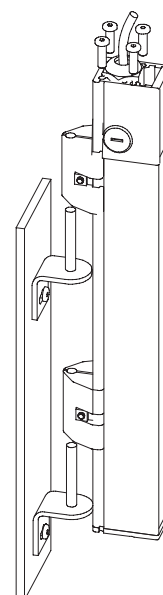
Standard mounting (Part No. 106 500) on aluminum profile, adjustable by $\pm 4^\circ$



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



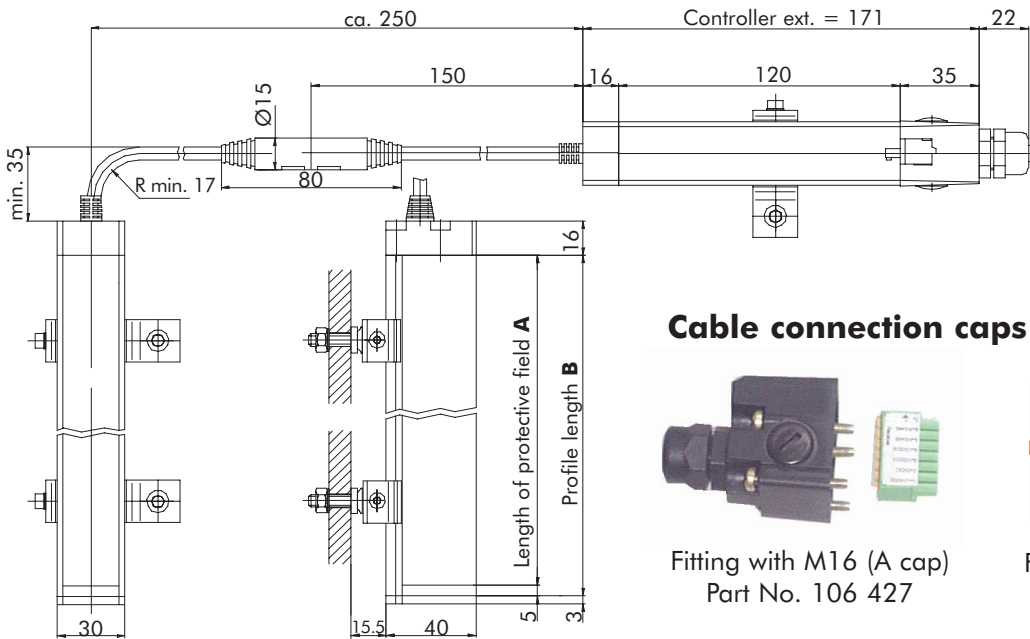
180° Mounting (Part No. 106 497) rotation $\pm 90^\circ$, for applications where the mounting angle is not set using the mounting frame.



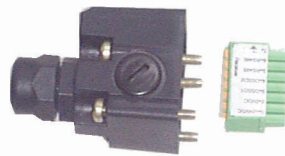
Dimensions

Systems with separated controller and A cap

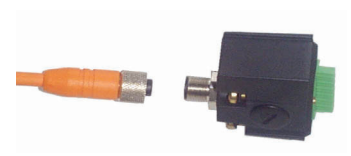
A = protection height, B = total length



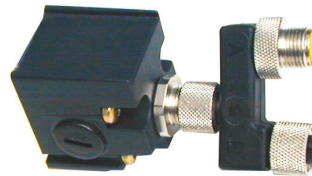
Cable connection caps



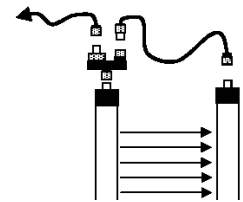
Fitting with M16 (A cap)
Part No. 106 427









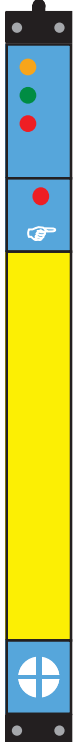
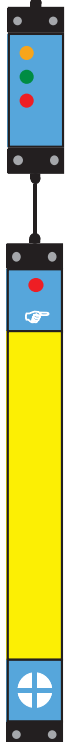

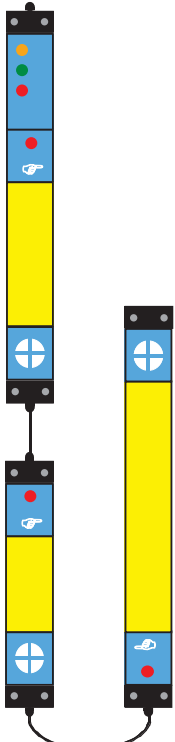
Fitting with M12 5-pin plug (B cap)
Part No. 106 428



Fitting with M12 5-pin T-connector (C cap)
Part No. 106 429



Possible configurations

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

Safe4 Ordering Information

Emitter		Receiver		Range	Pitch	Response Time	Protective Height A	Total Length B
Part No.	Description	Part No.	Description	(m)	(mm)	(ms)	(mm)	(mm)
106 430	Safe4-240-14-E	106 431	Safe4-240-14-R	9	14	15.8	240	410
106 432	Safe4-480-14-E	106 433	Safe4-480-14-R	9	14	26.3	480	650
106 434	Safe4-600-14-E	106 435	Safe4-600-14-R	9	14	31.6	600	771
106 436	Safe4-720-14-E	106 437	Safe4-720-14-R	9	14	36.9	720	891
106 438	Safe4-960-14-E	106 439	Safe4-960-14-R	9	14	47.5	960	1,131
106 440	Safe4-1200-14-E	106 442	Safe4-1200-14-R	9	14	58.1	1,200	1,372
106 442	Safe4-480-30-E	106 443	Safe4-480-30-R	18	30	15.8	480	650
106 444	Safe4-600-30-E	106 445	Safe4-600-30-R	18	30	18.4	600	771
106 446	Safe4-720-30-E	106 447	Safe4-720-30-R	18	30	21.1	720	891
106 448	Safe4-960-30-E	106 449	Safe4-960-30-R	18	30	26.3	960	1,131
106 450	Safe4-1200-30-E	106 451	Safe4-1200-30-R	18	30	31.6	1,200	1,372
106 452	Safe4-1560-30-E	106 453	Safe4-1560-30-R	18	30	39.6	1,560	1,733
106 454	Safe4-1800-30-E	106 455	Safe4-1800-30-R	18	30	44.9	1,800	1,973

Accessories

Part No.	Description
301 347	1 x 5 m shielded PVC cable with M 12 / 5pin connector
102 792	1 x 1 m MiniDin-MiniDin extension cable
102 793	1 x 3 m MiniDin-MiniDin extension cable
106 427	1 x "A" Safe4 connection cap complete (cable gland), for emitter or receiver
106 428	1 x "B" Safe4 connection cap complete (M 12 / 5 pin), for emitter or receiver
106 429	1 x "C" Safe4 connection cap complete (double M 12 / 5 pin), for emitter only
106 500	Mounting kit standard (30mm / for 1 profile)
106 497	Mounting kit 180° adjustable (30mm / for 1 profile)
106 502	Mounting kit vertical (30mm / for 1 profile)
106 501	Silent block (for 1 profile)
102 731	Test rod - 14 mm
102 732	Test rod - 30 mm
102 261	Operating manual - Safe4

Special configurations available according CEDES Configuration Tool (see www.cedes.com) or on request.