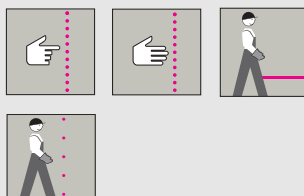




Industrial Safety Systems

C4000 Micro, Basic Plus, Basic, Eco
Safety Light Curtains





- 7-Segment-Display + LED
- Restart interlock (RES)
- External device monitoring (EDM)
- Pre-wired cables M12



Overview of technical specifications

Protective field height (depending on type)	150 mm ... 1200 mm / 300 mm ... 1800 mm
Scanning range (depending on type)	0 m ... 2.5 m / 1 m ... 5 m / 0 m ... 6 m
Resolution (depending on type)	14 mm / 30 mm
Type	Type 4 according to IEC 61496, SIL3 (IEC/EN 61508)
Enclosure rating	IP 65

Product description

The safety light curtain C4000 Micro, Basic Plus, Basic and Eco are used wherever hazardous points and hazardous areas require reliable and cost effective protection. Cost-efficient: pre-wired "off the shelf" cables M12 x 8 / M12 x 5 and clever accessories like the T-connector for a single home run to the control cabinet save your money. Simplified machine integration due to internal functions like EDM and Restart interlock. Alignment aid

and diagnosis via well-proven 7-segment display.

- Approved combination of sensor and interface means less failures and high availability
- Fast response time for short safety distances means small and compact machine design
- EMC-resistant for high availability even under rough industrial conditions.

Description	Connection type	External device monitoring (EDM)	Restart interlock (RES)
C4000 Micro	M12 x 7 + FE	✓	✓
C4000 Basic Plus	M12 x 7 + FE	✓	✓
C4000 Basic	M26 x 6 + FE Hirschmann plug	✓	-
C4000 Eco	M12 x 4 + FE	-	-

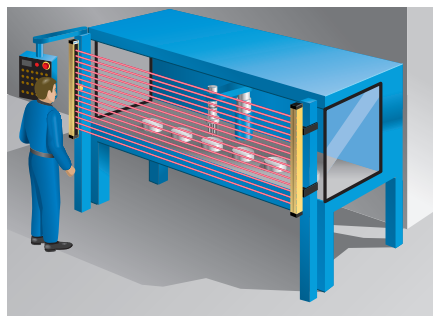
→ You can find the complete product portfolio of C4000 using the product finder at www.sick.com

Applications

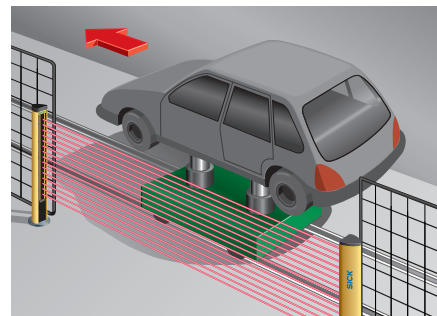
→ You can find more applications using the application finder at www.sick.com

- Automotive Industry
- Machine tool industry
- Electronics industry
- Packaging machinery

- Food and beverage industry
- Handling machinery
- Special machinery
- Environmental engineering



Hazardous point protection on a handling machine



Hazardous point protection on an assembly line

Further information	Page
→ C4000 Micro	3
→ C4000 Basic Plus	9
→ C4000 Basic	16
→ C4000 Eco	23
→ C4000 Advanced	*)
→ C4000 Standard	*)
→ C4000 Entry/Exit	*)
→ C4000 Palletizer	*)

*) see www.sick.com

Ordering information

C4000 Micro

Housing cross-section	28.5 mm x 33.5 mm
Function	Restart interlock, external device monitoring
Usage	Single system
Connection types	System connection: M12 x 7 + FE (sender and receiver unit)

Resolution 14 mm, scanning range 0 m ... 2.5m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
150	C41S-0101AA300	1024054	C41E-0101AG300	1024055
300	C41S-0301AA300	1023458	C41E-0301AG300	1023459
450	C41S-0401AA300	1023460	C41E-0401AG300	1023461
600	C41S-0601AA300	1023462	C41E-0601AG300	1023463
750	C41S-0701AA300	1023464	C41E-0701AG300	1023465
900	C41S-0901AA300	1023466	C41E-0901AG300	1023467
1050	C41S-1001AA300	1023468	C41E-1001AG300	1023469
1200	C41S-1201AA300	1023470	C41E-1201AG300	1023471

Resolution 14 mm, scanning range 1 m ... 5 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
150	C41S-0101AA300	1024054	C41E-0101BG300	1024037
300	C41S-0301AA300	1023458	C41E-0301BG300	1023486
450	C41S-0401AA300	1023460	C41E-0401BG300	1023487
600	C41S-0601AA300	1023462	C41E-0601BG300	1023488
750	C41S-0701AA300	1023464	C41E-0701BG300	1023489
900	C41S-0901AA300	1023466	C41E-0901BG300	1023490
1050	C41S-1001AA300	1023468	C41E-1001BG300	1023491
1200	C41S-1201AA300	1023470	C41E-1201BG300	1023492

Resolution 30 mm, scanning range 0 m ... 6 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
150	C41S-0103AA300	1023563	C41E-0103AG300	1023860
300	C41S-0303AA300	1023472	C41E-0303AG300	1023473
450	C41S-0403AA300	1023474	C41E-0403AG300	1023475
600	C41S-0603AA300	1023476	C41E-0603AG300	1023477
750	C41S-0703AA300	1023478	C41E-0703AG300	1023479
900	C41S-0903AA300	1023480	C41E-0903AG300	1023481
1050	C41S-1003AA300	1023482	C41E-1003AG300	1023483
1200	C41S-1203AA300	1023484	C41E-1203AG300	1023485

Detailed technical specifications

General system data

Scanning range (depending on type)	0 m ... 2.5 m / 1 m ... 5 m / 0 m ... 6 m
Protective field height (depending on type)	150 mm ... 1200 mm
Resolution (depending on type)	14 mm / 30 mm
Protection class	III
Enclosure rating	IP 65
Supply voltage U_v	24 V (19.2 V ... 28.8 V) DC ¹⁾
Type	Type 4 according to IEC 61496, SIL3 (IEC/EN 61508)
Synchronization	Optical, without separate synchronisation

¹⁾ The external voltage supply must be capable of buffering brief mains failures of 20 ms as specified in EN 60 204-1. Suitable power supplies are available as accessories from SICK.

Receiver unit

Switching outputs (OSSDs)	2 PNP semiconductors, short-circuit protected, cross-circuit monitored
Switching voltage	$HIGH_{min}$ LOW_{max} 24 V (15 V ... 28,8 V) DC 3,5 V
Switching current max.	500 mA
Power consumption	≤ 0.45 A (without OSSD)

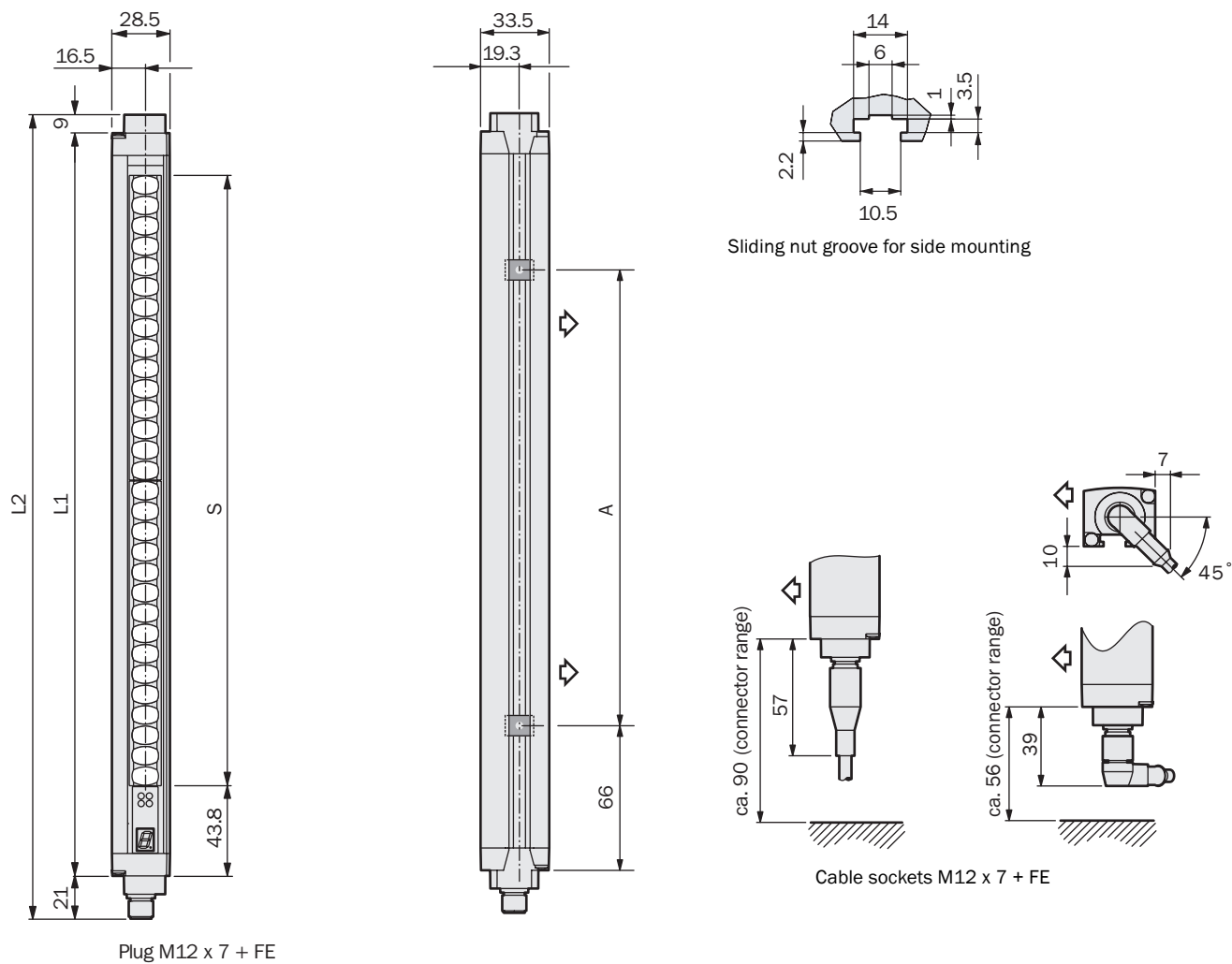
Sender unit

Power consumption	≤ 0.35 A
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Operating data

Connection type	M12 x 7 + FE
Cable length	15 m
Wire cross-section	0.25 mm ²
Ambient operating temperature from ... to	0 °C ... +55 °C
Storage temperature from ... to	-25 °C ... +70 °C
Air humidity from ... to	15 % ... 95 %
Housing cross-section	28.5 mm x 33.5 mm
Vibration resistance	5 g, 10 Hz ... 55 Hz according to IEC 60068-2-6
Shock resistance	10 g, 16 ms IEC 60068-2-29

Dimensional drawings



Dimensions in mm

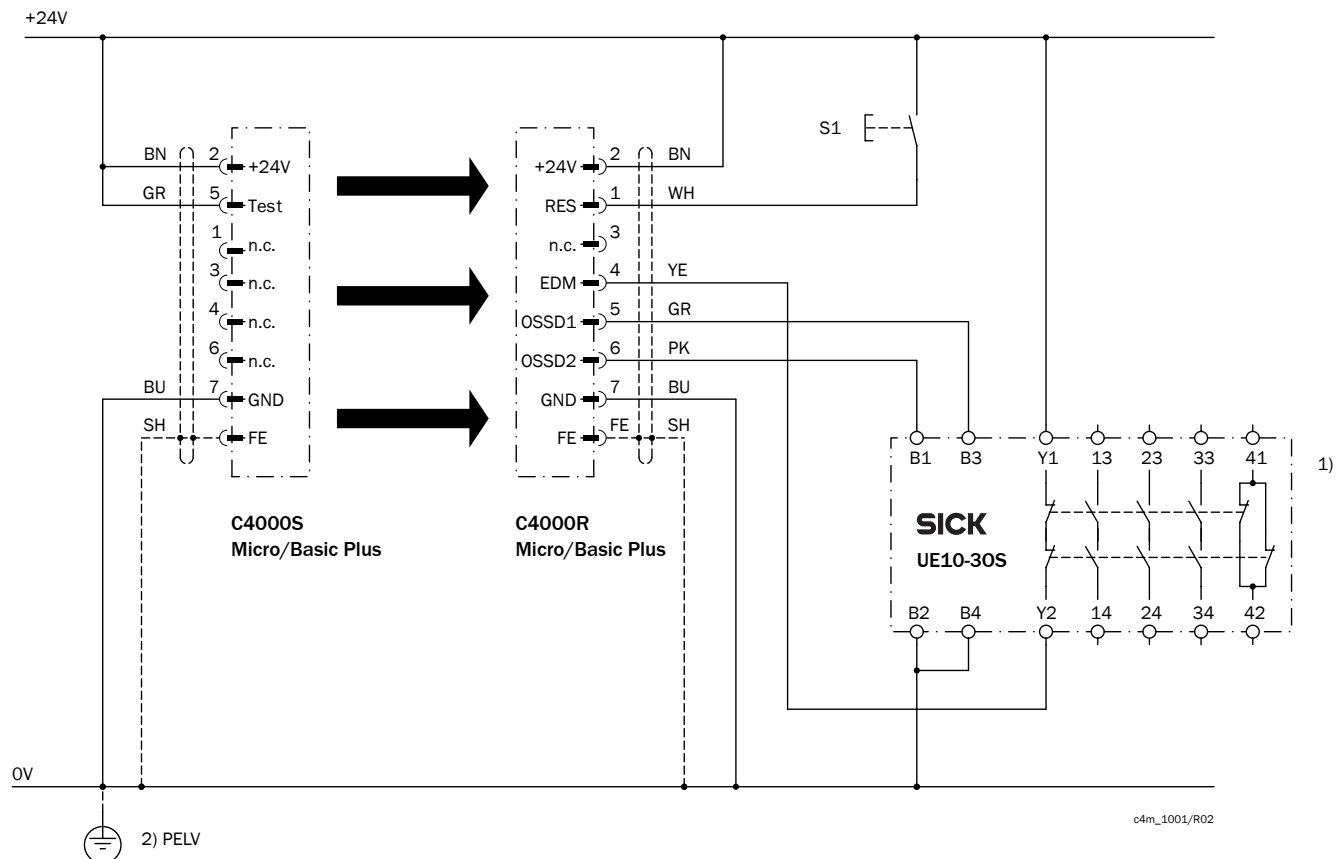
Protective field height S	L1	L2	A
150	246	276	106
300	364	394	224
450	515	545	374
600	666	696	524
750	816	846	674
900	967	997	824
1050	1117	1147	974
1200	1266	1296	1124

Dimensions in mm

Connection diagrams

→ You can find more connection diagrams at www.sick.com

C4000 Micro connected to UE10-30S safety relay.



Task

Connection of one C4000 Micro/Basic Plus safety light curtain to an UE10-30S interface
Operating mode with restart interlock and contactor monitoring.

Operating characteristics

If the light beams are free and fault free rest position of the UE10, the yellow LED at the receiver flashes and the system is ready for operation. The system is started through the actuation of S1 (the push-button is actuated and released). The outputs OSSD1 and OSSD2 are under voltage, the UE10 switch to ON. If one of the light beams is interrupted, the UE10 will be switched off by the outputs OSSD1 and OSSD2.

Fault analysis

Cross- or shortcircuits on the OSSD's will be detected and lead to the lock-out of the device. The malfunction of the UE10 will be detected and does not lead to the loss of the switch-off function. The manipulation (clamping) of S1 prevents the release of the output circuits.

Comments

- 1) Output circuit. These contacts have to be integrated in the control system in such a way that the hazardous state is overcome when the output circuit is open. In case of category 4 and 3 this integration shall have two channels (x, y, paths). An integration in the control system with one channel (z path) is only possible with single-channel control systems and under consideration of the risk analysis.
- 2) PELV in accordance with EN 60204-1 / 6.4

Take note of the operating instructions of the integrated devices.

Accessories

Mounting systems

Description	Type of fastening	Packing unit	Remark	Part number
Mounting kit 1	Pivoting, swivel mount	4	For all protective field heights	2019649
Mounting kit 6	Pivoting, side bracket	4	For all protective field heights	2019506
Mounting kit 10	Replacement bracket	4	Suitable for replacement of FGS	2021645
Stainless steel bracket	Pivoting	4	–	2030288

Sliding nuts/sliding blocks

Description	Packing unit	Remark	Part number
Sliding block (sliding nut)	4	Supplied with delivery	2017550

Connection cables

Connection type	Direction of the cable outlet	Type of connection	Cable length	Part number
Cable socket M12 x 7 + FE	Straight	Stripped	2,5 m	6020537
			5 m	6020354
			10 m	6020352
			15 m	6020872
			7,5 m	6020353
	Angled		5 m	6021342
			15 m	6021343

Interfaces

Description	Description	Type	Part number
Relay module	With 3 NO, 1 NC, screw type terminals	UE10-30S2D0	6024917
	With 3 NO, 1 NC, removable terminals	UE10-30S3D0	6024918
Safety relay for external restart interlock and external device monitoring	With 2 NO, 1 NC, screw type terminals	UE48-20S2D2	6024915
	With 2 NO, 1 NC, removable terminals	UE48-20S3D2	6024916
	With 3 NO, screw type terminals	UE48-30S2D3	6025089
	With 3 NO, removable terminals	UE48-30S2D4	6025097

Power supply

Input voltage	Output voltage	Maximum Power	Part number
120 / 240 V AC	24 V DC	50 W	7028789
120 / 240 V AC	24 V DC	95 W	7028790

Resettool

Description	Remark	Part number
Resettool	For deactivation of the integrated restart interlock	6022103
Adapter cable		2026866

Device columns

Länge	Suitable for protective field height	Remark	Part number
1200 mm	150 ... 1050 mm	Incl. mounting kit 1 (2 pieces)	2021333
1500 mm	150 ... 1200 mm	Incl. mounting kit 1 (2 pieces)	2021242
1700 mm	150 ... 1200 mm	Incl. mounting kit 1 (2 pieces)	2021337

Additional front screens

Suitable for protective field height	Part number
150 mm	2022404
300 mm	2022405
450 mm	2022406
600 mm	2022407
750 mm	2022408
900 mm	2022409
1050 mm	2022410
1200 mm	2022411

Deflector mirrors

Description	Suitable for protective field height	Part number
PNS75-034	300 mm	1019414
PNS75-049	450 mm	1019415
PNS75-064	600 mm	1019416
PNS75-079	750 mm	1019417
PNS75-094	900 mm	1019418
PNS75-109	1050 mm	1019419
PNS75-124	1200 mm	1019420
PNS125-034	300 mm	1019425
PNS125-049	450 mm	1019426
PNS125-064	600 mm	1019427
PNS125-079	750 mm	1019428
PNS125-094	900 mm	1019429
PNS125-109	1050 mm	1019430
PNS125-124	1200 mm	1019431

Laser alignment

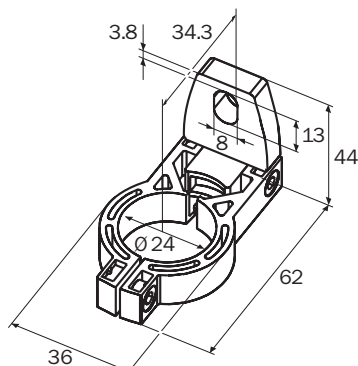
Description	Maximum scanning range	Light type	Part number
Laser alignment aid AR 60	60 m	Red light	1015741
Adapter AR60, C4000 Micro	–	–	4032462

Documentation

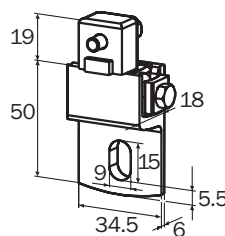
Description	Remark	Part number
Operating instructions C4000 Basic Plus, Basic, Eco, Micro on CD-ROM	Supplied with delivery	2026783

Dimensional drawings mounting accessories

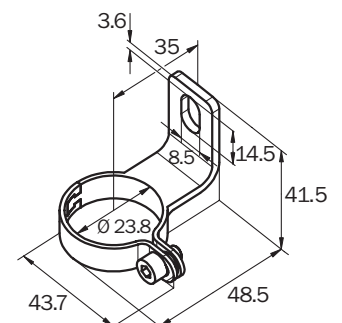
Dimensions in mm



Swivel mount, mounting kit 1



Side bracket, mounting kit 6



Stainless steel bracket

Ordering information

C4000 Basic Plus

Housing cross-section	40 mm x 48 mm
Functions	Restart interlock, external device monitoring
Usage	Single system
Connection types	System connection: M12 x 7 + FE (sender and receiver unit)

Resolution 14 mm, scanning range 0 m ... 2.5m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA300	1027922	C40E-0301AG300	1027944
450	C40S-0401AA300	1027923	C40E-0401AG300	1027945
600	C40S-0601AA300	1027924	C40E-0601AG300	1027946
750	C40S-0701AA300	1027925	C40E-0701AG300	1027947
900	C40S-0901AA300	1027926	C40E-0901AG300	1027948
1050	C40S-1001AA300	1027927	C40E-1001AG300	1027949
1200	C40S-1201AA300	1027928	C40E-1201AG300	1027950
1350	C40S-1301AA300	1027929	C40E-1301AG300	1027951
1500	C40S-1501AA300	1027930	C40E-1501AG300	1027952
1650	C40S-1601AA300	1027931	C40E-1601AG300	1027953
1800	C40S-1801AA300	1027932	C40E-1801AG300	1027954

Resolution 14 mm, scanning range 1 m ... 5 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA300	1027922	C40E-0301BG300	1027966
450	C40S-0401AA300	1027923	C40E-0401BG300	1027967
600	C40S-0601AA300	1027924	C40E-0601BG300	1027968
750	C40S-0701AA300	1027925	C40E-0701BG300	1027969
900	C40S-0901AA300	1027926	C40E-0901BG300	1027970
1050	C40S-1001AA300	1027927	C40E-1001BG300	1027971
1200	C40S-1201AA300	1027928	C40E-1201BG300	1027972
1350	C40S-1301AA300	1027929	C40E-1301BG300	1027973
1500	C40S-1501AA300	1027930	C40E-1501BG300	1027974
1650	C40S-1601AA300	1027931	C40E-1601BG300	1027975
1800	C40S-1801AA300	1027932	C40E-1801BG300	1027976

Resolution 30 mm, scanning range 0 m ... 6 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0303AA300	1027933	C40E-0303AG300	1027955
450	C40S-0403AA300	1027934	C40E-0403AG300	1027956
600	C40S-0603AA300	1027935	C40E-0603AG300	1027957
750	C40S-0703AA300	1027936	C40E-0703AG300	1027958
900	C40S-0903AA300	1027937	C40E-0903AG300	1027959
1050	C40S-1003AA300	1027938	C40E-1003AG300	1027960
1200	C40S-1203AA300	1027939	C40E-1203AG300	1027961
1350	C40S-1303AA300	1027940	C40E-1303AG300	1027962
1500	C40S-1503AA300	1027941	C40E-1503AG300	1027963
1650	C40S-1603AA300	1027942	C40E-1603AG300	1027964
1800	C40S-1803AA300	1027943	C40E-1803AG300	1027965

Detailed technical specifications

General system data

Scanning range (depending on type)	0 m ... 2.5 m / 1 m ... 5 m / 0 m ... 6 m
Protective field height (depending on type)	300 mm ... 1800 mm
Resolution (depending on type)	14 mm / 30 mm
Protection class	III
Enclosure rating	IP 65
Supply voltage U_v	24 V (19.2 V ... 28.8 V) DC ¹⁾
Type	Type 4 according to IEC 61496, SIL3 (IEC/EN 61508)
Synchronization	Optical, without separate synchronisation

¹⁾ The external voltage supply must be capable of buffering brief mains failures of 20 ms as specified in EN 60 204-1. Suitable power supplies are available as accessories from SICK.

Receiver unit

Switching outputs (OSSDs)	2 PNP semiconductors, short-circuit protected, cross-circuit monitored
Switching voltage	$HIGH_{min}$ LOW_{max} 24 V (15 V ... 28,8 V) DC 3,5 V
Switching current max.	500 mA
Power consumption	≤ 0.45 A (without OSSD)

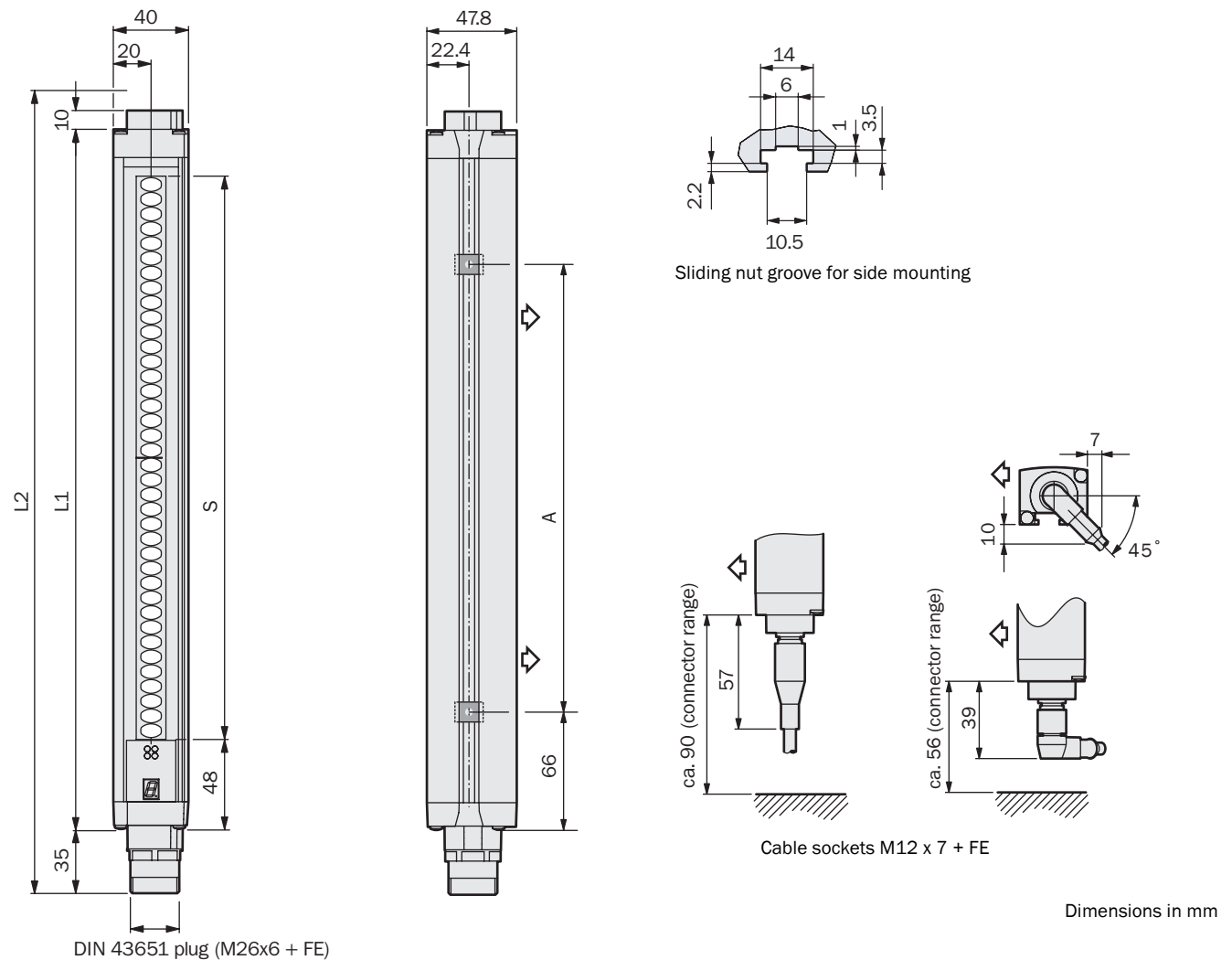
Sender unit

Power consumption	≤ 0.35 A
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Operating data

Connection type	M12 x 7 + FE
Cable length	15 m
Wire cross-section	0.25 mm ²
Ambient operating temperature from ... to	0 °C ... +55 °C
Storage temperature from ... to	-25 °C ... +70 °C
Air humidity from ... to	15 % ... 95 %
Housing cross-section	40 mm x 48 mm
Vibration resistance	5 g, 10 Hz ... 55 Hz according to IEC 60068-2-6
Shock resistance	10 g, 16 ms IEC 60068-2-29

Dimensional drawings



Protective field height S	L1	L2	A
300	372	417	224
450	523	568	374
600	674	718	524
750	824	869	674
900	975	1020	824
1050	1125	1170	974
1200	1274	1319	1124
1350	1426	1471	1274
1500	1577	1622	1424
1650	1727	1772	1574
1800	1878	1923	1724

Dimensions in mm

Connection diagrams

→ You can find connection diagrams at www.sick.com

Accessories

Mounting systems

Description	Type of fastening	Packing unit	Remark	Part number
Mounting kit 2	Pivoting, swivel mount	4	For all protective field heights	2019659
Mounting kit 3	Pivoting, schock resistant	4	For all protective field heights	2017752
Mounting kit 6	Pivoting, side bracket	4	For all protective field heights	2019506
Mounting kit 11	Replacement bracket	4	Suitable for replacement of FGS	2021646
Stainless steel bracket	Pivoting	4	For all protective field heights	2023708
Reinforced stainless steel bracket	Pivoting	4	For all protective field heights	2026850

Sliding nuts/sliding blocks

Description	Packing unit	Remark	Part number
Sliding block (sliding nut)	4	Supplied with delivery	2 017 550

Connection cables

Connection type	Direction of the cable outlet	Type of connection	Cable length	Part number
Cable socket M12 x 7 + FE	Straight	Stripped	2,5 m	6020537
			5 m	6020354
			10 m	6020352
			15 m	6020872
			7,5 m	6020353
	Angled		5 m	6021342
			15 m	6021343

Interfaces

Description	Description	Type	Part number
Relay module	With 3 NO, 1 NC, screw type terminals	UE10-30S2D0	6024917
	With 3 NO, 1 NC, removable terminals	UE10-30S3D0	6024918
Safety relay for external restart interlock and external device monitoring	With 2 NO, 1 NC, screw type terminals	UE48-20S2D2	6024915
	With 2 NO, 1 NC, removable terminals	UE48-20S3D2	6024916
	With 3 NO, screw type terminals	UE48-30S2D3	6025089
	With 3 NO, removable terminals	UE48-30S2D4	6025097

Power supply

Input voltage	Output voltage	Maximum Power	Part number
120 / 240 V AC	24 V DC	50 W	7028789
120 / 240 V AC	24 V DC	95 W	7028790

Resettool

Description	Remark	Part number
Resettool	For deactivation of the integrated restart interlock	6022103
Adapter cable		2026866

Device columns

Länge	Suitable for protective field height	Remark	Part number
1200 mm	300 ... 900 mm	Incl. mounting kit 1 (2 pieces)	2021330
1500 mm	300 ... 1200 mm	Incl. mounting kit 1 (2 pieces)	2021331
1700 mm	300 ... 1350 mm	Incl. mounting kit 1 (2 pieces)	2021332

Additional front screens

Suitable for protective field height	Part number
300 mm	2022412
450 mm	2022413
600 mm	2022414
750 mm	2022415
900 mm	2022416
1050 mm	2022417
1200 mm	2022418
1350 mm	2022419
1500 mm	2022420
1650 mm	2022421
1800 mm	2022422

Additional front screens heavy duty

Suitable for protective field height	Part number
300 mm	2026853
450 mm	2026854
600 mm	2026855
750 mm	2026856
900 mm	2026857
1050 mm	2026858
1200 mm	2026859
1350 mm	2026860
1500 mm	2026861
1650 mm	2026862
1800 mm	2026863

Deflector mirrors

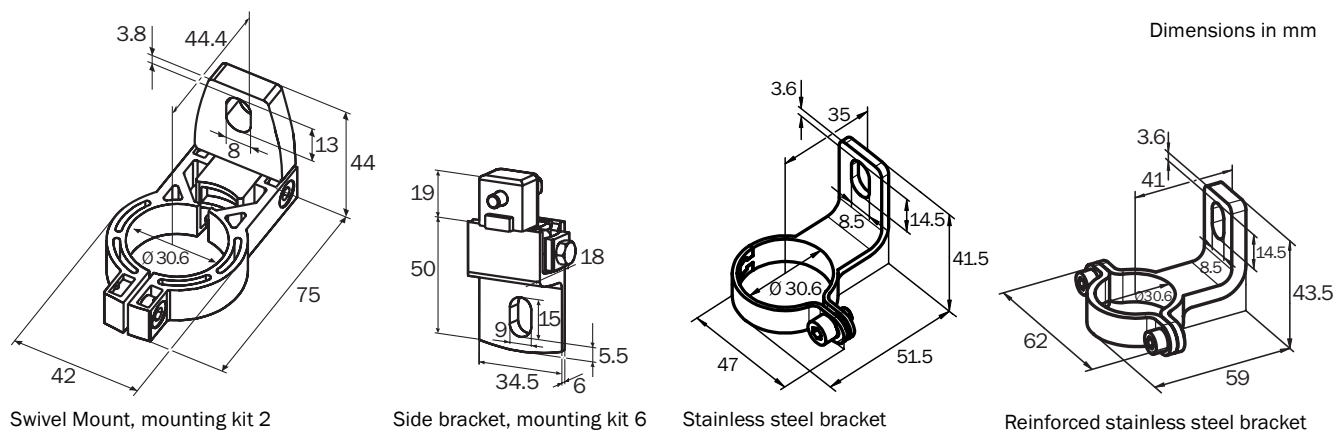
Description	Suitable for protective field height	Part number
PNS75-034	300 mm	1019414
PNS75-049	450 mm	1019415
PNS75-064	600 mm	1019416
PNS75-079	750 mm	1019417
PNS75-094	900 mm	1019418
PNS75-109	1050 mm	1019419
PNS75-124	1200 mm	1019420
PNS75-139	1350 mm	1019421
PNS75-154	1500 mm	1019422
PNS75-169	1650 mm	1019423
PNS75-184	1800 mm	1019424
PNS125-034	300 mm	1019425
PNS125-049	450 mm	1019426
PNS125-064	600 mm	1019427
PNS125-079	750 mm	1019428
PNS125-094	900 mm	1019429
PNS125-109	1050 mm	1019430
PNS125-124	1200 mm	1019431
PNS125-139	1350 mm	1019432
PNS125-154	1500 mm	1019433
PNS125-169	1650 mm	1019434
PNS125-184	1800 mm	1019435

Laser alignment

Description	Maximum scanning range	Light type	Part number
Laser alignment aid AR 60	60 m	Red light	1015741
Adapter AR60, C4000 Basic Plus	–	–	4032461

Documentation

Description	Remark	Part number
Operating instructions C4000 Basic Plus, C4000 Basic, C4000 Eco, C4000 Micro on CD-ROM	Supplied with delivery	2026783

Dimensional drawings mounting accessories

Ordering information

C4000 Basic

Housing cross-section	40 mm x 48 mm
Functions	External device monitoring
Usage	Single system
Connection types	System connection: Hirschmann plug M26 x 6 + FE (sender and receiver unit)

Resolution 14 mm, scanning range 0 m ... 2.5m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA030	1022195	C40E-0301AH030	1022196
450	C40S-0401AA030	1022198	C40E-0401AH030	1022199
600	C40S-0601AA030	1022200	C40E-0601AH030	1022201
750	C40S-0701AA030	1022202	C40E-0701AH030	1022203
900	C40S-0901AA030	1022204	C40E-0901AH030	1022205
1050	C40S-1001AA030	1022206	C40E-1001AH030	1022207
1200	C40S-1201AA030	1022208	C40E-1201AH030	1022209
1350	C40S-1301AA030	1022210	C40E-1301AH030	1022211
1500	C40S-1501AA030	1022212	C40E-1501AH030	1022213
1650	C40S-1601AA030	1022214	C40E-1601AH030	1022215
1800	C40S-1801AA030	1022216	C40E-1801AH030	1022217

Resolution 14 mm, scanning range 1 m ... 5 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA030	1022195	C40E-0301BH030	1022240
450	C40S-0401AA030	1022198	C40E-0401BH030	1022241
600	C40S-0601AA030	1022200	C40E-0601BH030	1022242
750	C40S-0701AA030	1022202	C40E-0701BH030	1022243
900	C40S-0901AA030	1022204	C40E-0901BH030	1022244
1050	C40S-1001AA030	1022206	C40E-1001BH030	1022245
1200	C40S-1201AA030	1022208	C40E-1201BH030	1022246
1350	C40S-1301AA030	1022210	C40E-1301BH030	1022247
1500	C40S-1501AA030	1022212	C40E-1501BH030	1022248
1650	C40S-1601AA030	1022214	C40E-1601BH030	1022249
1800	C40S-1801AA030	1022216	C40E-1801BH030	1022250

Resolution 30 mm, scanning range 0 m ... 6 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0303AA030	1022218	C40E-0303AH030	1022219
450	C40S-0403AA030	1022220	C40E-0403AH030	1022221
600	C40S-0603AA030	1022222	C40E-0603AH030	1022223
750	C40S-0703AA030	1022224	C40E-0703AH030	1022225
900	C40S-0903AA030	1022226	C40E-0903AH030	1022227
1050	C40S-1003AA030	1022228	C40E-1003AH030	1022229
1200	C40S-1203AA030	1022230	C40E-1203AH030	1022231
1350	C40S-1303AA030	1022232	C40E-1303AH030	1022233
1500	C40S-1503AA030	1022234	C40E-1503AH030	1022235
1650	C40S-1603AA030	1022236	C40E-1603AH030	1022237
1800	C40S-1803AA030	1022238	C40E-1803AH030	1022239

Detailed technical specifications

General system data

Scanning range (depending on type)	0 m ... 2.5 m / 1 m ... 5 m / 0 m ... 6 m
Protective field height (depending on type)	300 mm ... 1800 mm
Resolution (depending on type)	14 mm / 30 mm
Protection class	III
Enclosure rating	IP 65
Supply voltage U_v	24 V (19.2 V ... 28.8 V) DC ¹⁾
Type	Type 4 according to IEC 61496, SIL3 (IEC/EN 61508)
Synchronization	Optical, without separate synchronisation

¹⁾ The external voltage supply must be capable of buffering brief mains failures of 20 ms as specified in EN 60 204-1. Suitable power supplies are available as accessories from SICK.

Receiver unit

Switching outputs (OSSDs)	2 PNP semiconductors, short-circuit protected, cross-circuit monitored
Switching voltage	24 V (15 V ... 28,8 V) DC 3,5 V
Switching current max.	500 mA
Power consumption	≤ 0.45 A (without OSSD)

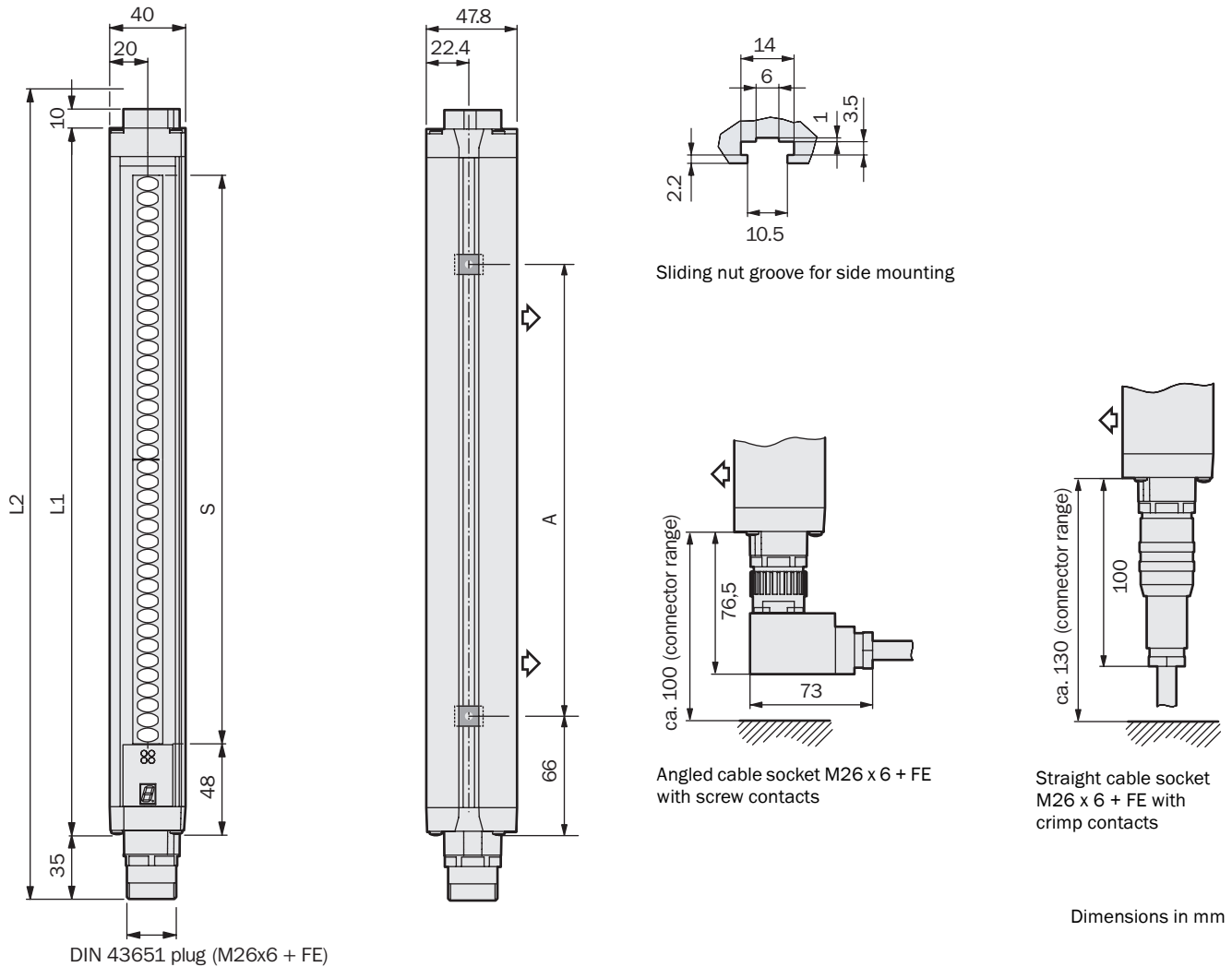
Sender unit

Power consumption	≤ 0.35 A
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Operating data

Connection type	Hirschmann plug M26 x 6 + FE
Cable length	Max. 50 m
Wire cross-section	0,75 mm ²
Ambient operating temperature from ... to	0 °C ... +55 °C
Storage temperature from ... to	-25 °C ... +70 °C
Air humidity from ... to	15 % ... 95 %
Housing cross-section	40 mm x 48 mm
Vibration resistance	5 g, 10 Hz ... 55 Hz according to IEC 60068-2-6
Shock resistance	10 g, 16 ms IEC 60068-2-29

Dimensional drawings



Protective field height S	L1	L2	A
300	372	417	224
450	523	568	374
600	674	718	524
750	824	869	674
900	975	1020	824
1050	1125	1170	974
1200	1274	1319	1124
1350	1426	1471	1274
1500	1577	1622	1424
1650	1727	1772	1574
1800	1878	1923	1724

Dimensions in mm

Accessories

Mounting systems

Description	Type of fastening	Packing unit	Remark	Part number
Mounting kit 2	Pivoting, swivel mount	4	For all protective field heights	2019659
Mounting kit 3	Pivoting, shock resistant	4	For all protective field heights	2017752
Mounting kit 6	Pivoting, side bracket	4	For all protective field heights	2019506
Mounting kit 11	Replacement bracket	4	Suitable for replacement of FGS	2021646
Stainless steel bracket	Pivoting	4	For all protective field heights	2023708
Reinforced stainless steel bracket	Pivoting	4	For all protective field heights	2026850

Sliding nuts/sliding blocks

Description	Packing unit	Remark	Part number
Sliding block (sliding nut)	4	Supplied with delivery	2017550

Cable socket

Description	Type of connection	Direction of the cable outlet	Part number
Hirschmann cable socket M26 x 6 + FE	Crimp contacts	Straight	6006612
	Screw connection	Angled	6007363

Connection cables

Connection type	Direction of the cable outlet	Type of connection	Cable length	Part number
Hirschmann cable socket M26 x 6 + FE	Straight	Stripped	2,5 m	2023993
			5 m	2023994
			7,5 m	2023995
			10 m	2023996
			15 m	2023997
			20 m	2023998
			30 m	2023999

Interfaces

Description	Description	Type	Part number
Relay module	With 3 NO, 1 NC, screw type terminals	UE10-30S2D0	6024917
	With 3 NO, 1 NC, removable terminals	UE10-30S3D0	6024918
Safety relay for external restart interlock and external device monitoring	With 2 NO, 1 NC, screw type terminals	UE48-20S2D2	6024915
	With 2 NO, 1 NC, removable terminals	UE48-20S3D2	6024916
	With 3 NO, screw type terminals	UE48-30S2D3	6025089
	With 3 NO, removable terminals	UE48-30S2D4	6025097

Power supply

Input voltage	Output voltage	Maximum Power	Part number
120 / 240 V AC	24 V DC	50 W	7028789
120 / 240 V AC	24 V DC	95 W	7028790

Device columns

Länge	Suitable for protective field height	Remark	Part number
1200 mm	300 ... 900 mm	Incl. mounting kit 1 (2 pieces)	2021330
1500 mm	300 ... 1200 mm	Incl. mounting kit 1 (2 pieces)	2021331
1700 mm	300 ... 1350 mm	Incl. mounting kit 1 (2 pieces)	2021332

Additional front screens

Suitable for protective field height	Part number
300 mm	2022412
450 mm	2022413
600 mm	2022414
750 mm	2022415
900 mm	2022416
1050 mm	2022417
1200 mm	2022418
1350 mm	2022419
1500 mm	2022420
1650 mm	2022421
1800 mm	2022422

Additional front screens heavy duty

Suitable for protective field height	Part number
300 mm	2026853
450 mm	2026854
600 mm	2026855
750 mm	2026856
900 mm	2026857
1050 mm	2026858
1200 mm	2026859
1350 mm	2026860
1500 mm	2026861
1650 mm	2026862
1800 mm	2026863

Deflector mirrors

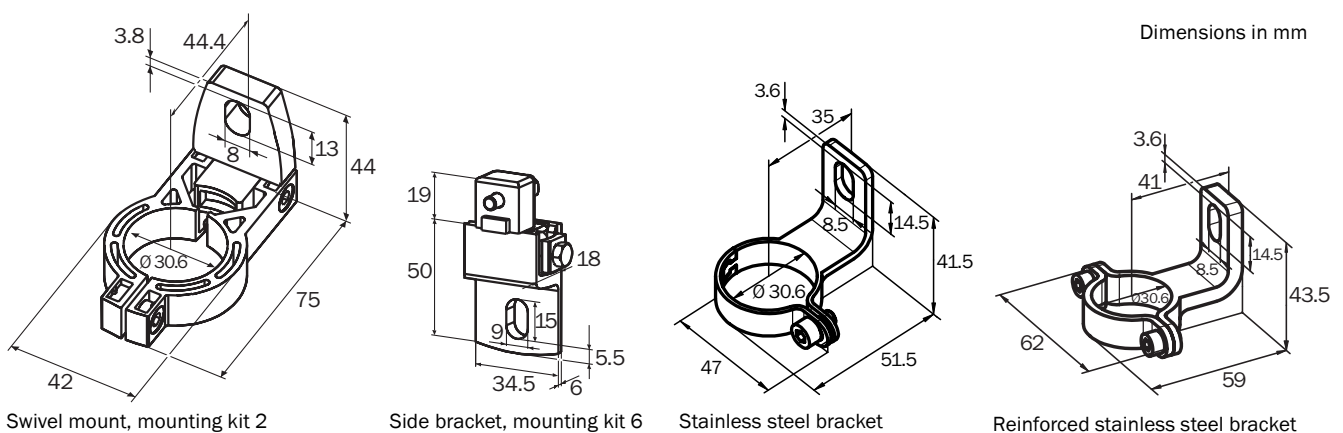
Description	Suitable for protective field height	Part number
PNS75-034	300 mm	1019414
PNS75-049	450 mm	1019415
PNS75-064	600 mm	1019416
PNS75-079	750 mm	1019417
PNS75-094	900 mm	1019418
PNS75-109	1050 mm	1019419
PNS75-124	1200 mm	1019420
PNS75-139	1350 mm	1019421
PNS75-154	1500 mm	1019422
PNS75-169	1650 mm	1019423
PNS75-184	1800 mm	1019424
PNS125-034	300 mm	1019425
PNS125-049	450 mm	1019426
PNS125-064	600 mm	1019427
PNS125-079	750 mm	1019428
PNS125-094	900 mm	1019429
PNS125-109	1050 mm	1019430
PNS125-124	1200 mm	1019431
PNS125-139	1350 mm	1019432
PNS125-154	1500 mm	1019433
PNS125-169	1650 mm	1019434
PNS125-184	1800 mm	1019435

Laser alignment

Description	Maximum scanning range	Light type	Part number
Laser alignment aid AR 60	60 m	Red light	1015741
Adapter AR60, C4000 Basic Plus	–	–	4032461

Documentation

Description	Remark	Part number
Operating instructions C4000 Basic Plus, C4000 Basic, C4000 Eco, C4000 Micro on CD-ROM	Supplied with delivery	2026783

Dimensional drawings mounting accessories

Ordering information

C4000 Eco

Housing cross-section	40 mm x 48 mm
Functions	Guard only
Usage	Single system
Connection types	System connection: M12 x 4 + FE (sender and receiver unit)

Resolution 14 mm, scanning range 0 m ... 2.5m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA310	1027440	C40E-0301AN310	1027441
450	C40S-0401AA310	1027442	C40E-0401AN310	1027443
600	C40S-0601AA310	1027444	C40E-0601AN310	1027445
750	C40S-0701AA310	1027446	C40E-0701AN310	1027447
900	C40S-0901AA310	1027448	C40E-0901AN310	1027449
1050	C40S-1001AA310	1027450	C40E-1001AN310	1027451
1200	C40S-1201AA310	1027452	C40E-1201AN310	1027453
1350	C40S-1301AA310	1027454	C40E-1301AN310	1027455
1500	C40S-1501AA310	1027456	C40E-1501AN310	1027457
1650	C40S-1601AA310	1027458	C40E-1601AN310	1027459
1800	C40S-1801AA310	1027460	C40E-1801AN310	1027463

Resolution 14 mm, scanning range 1 m ... 5 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0301AA310	1027440	C40E-0301BN310	1027486
450	C40S-0401AA310	1027442	C40E-0401BN310	1027487
600	C40S-0601AA310	1027444	C40E-0601BN310	1027488
750	C40S-0701AA310	1027446	C40E-0701BN310	1027489
900	C40S-0901AA310	1027448	C40E-0901BN310	1027490
1050	C40S-1001AA310	1027450	C40E-1001BN310	1027491
1200	C40S-1201AA310	1027452	C40E-1201BN310	1027492
1350	C40S-1301AA310	1027454	C40E-1301BN310	1027493
1500	C40S-1501AA310	1027456	C40E-1501BN310	1027494
1650	C40S-1601AA310	1027458	C40E-1601BN310	1027495
1800	C40S-1801AA310	1027460	C40E-1801BN310	1027496

Resolution 30 mm, scanning range 0 m ... 6 m

Protective field height (mm)	Sender unit		Receiver unit	
	Type	Part number	Type	Part number
300	C40S-0303AA310	1027464	C40E-0303AN310	1027465
450	C40S-0403AA310	1027466	C40E-0403AN310	1027467
600	C40S-0603AA310	1027468	C40E-0603AN310	1027469
750	C40S-0703AA310	1027470	C40E-0703AN310	1027471
900	C40S-0903AA310	1027472	C40E-0903AN310	1027473
1050	C40S-1003AA310	1027474	C40E-1003AN310	1027475
1200	C40S-1203AA310	1027476	C40E-1203AN310	1027477
1350	C40S-1303AA310	1027478	C40E-1303AN310	1027479
1500	C40S-1503AA310	1027480	C40E-1503AN310	1027481
1650	C40S-1603AA310	1027482	C40E-1603AN310	1027483
1800	C40S-1803AA310	1027484	C40E-1803AN310	1027485

Detailed technical specifications

General system data

Scanning range (depending on type)	0 m ... 2.5 m / 1 m ... 5 m / 0 m ... 6 m
Protective field height (depending on type)	300 mm ... 1800 mm
Resolution (depending on type)	14 mm / 30 mm
Protection class	III
Enclosure rating	IP 65
Supply voltage U_v	24 V (19.2 V ... 28.8 V) DC ¹⁾
Type	Type 4 according to IEC 61496, SIL3 (IEC/EN 61508)
Synchronization	Optical, without separate synchronisation

¹⁾ The external voltage supply must be capable of buffering brief mains failures of 20 ms as specified in EN 60 204-1. Suitable power supplies are available as accessories from SICK.

Receiver unit

Switching outputs (OSSDs)	2 PNP semiconductors, short-circuit protected, cross-circuit monitored
Switching voltage	24 V (15 V ... 28,8 V) DC 3,5 V
HIGH_{min} LOW_{max}	
Switching current max.	500 mA
Power consumption	≤ 0.45 A (without OSSD)

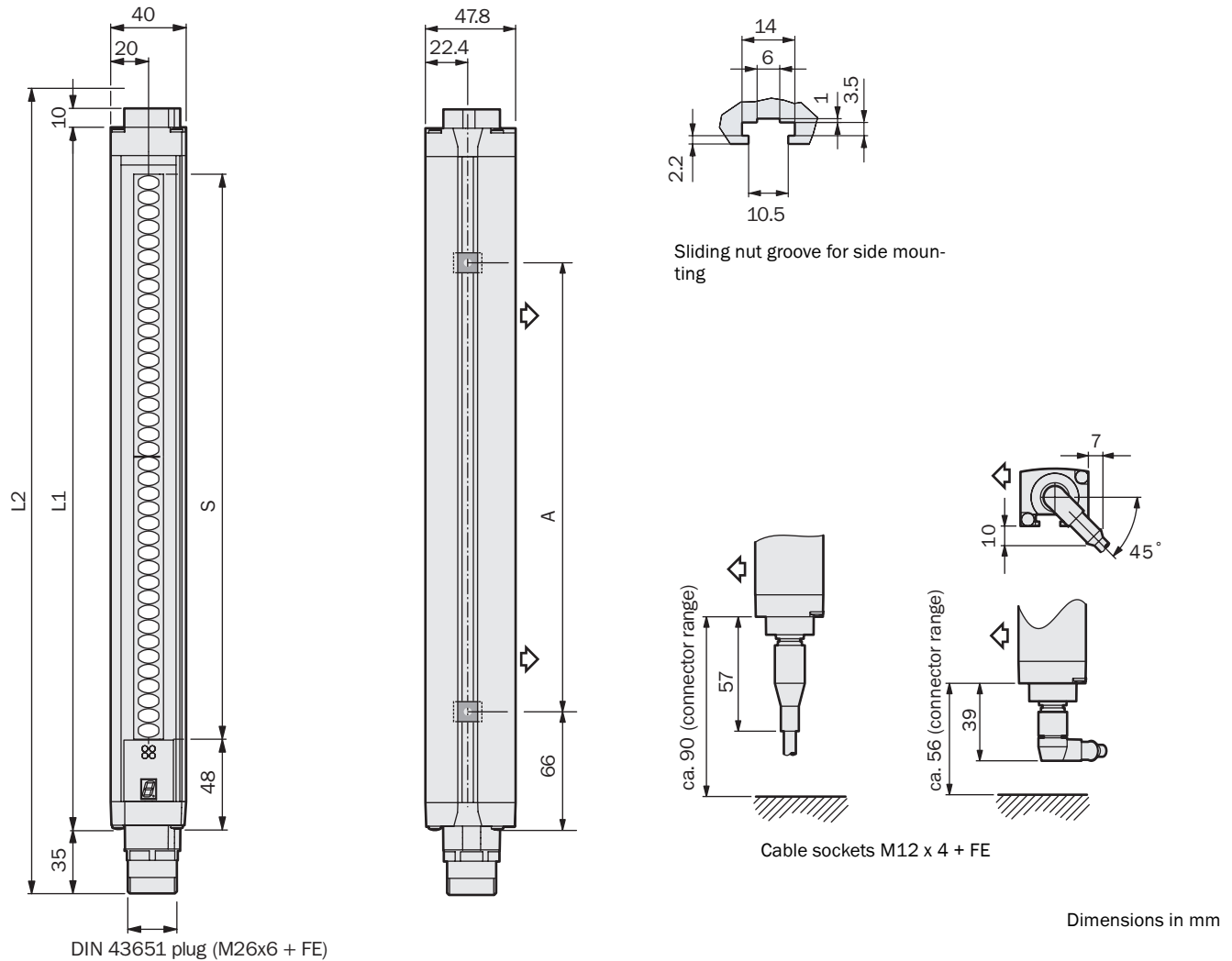
Sender unit

Power consumption	≤ 0.35 A
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Operating data

Connection type	M12 x 4 + FE
Cable length	15 m
Wire cross-section	0.25 mm ²
Ambient operating temperature from ... to	0 °C ... +55 °C
Storage temperature from ... to	-25 °C ... +70 °C
Air humidity from ... to	15 % ... 95 %
Housing cross-section	40 mm x 48 mm
Vibration resistance	5 g, 10 Hz ... 55 Hz according to IEC 60068-2-6
Shock resistance	10 g, 16 ms IEC 60068-2-29

Dimensional Drawings



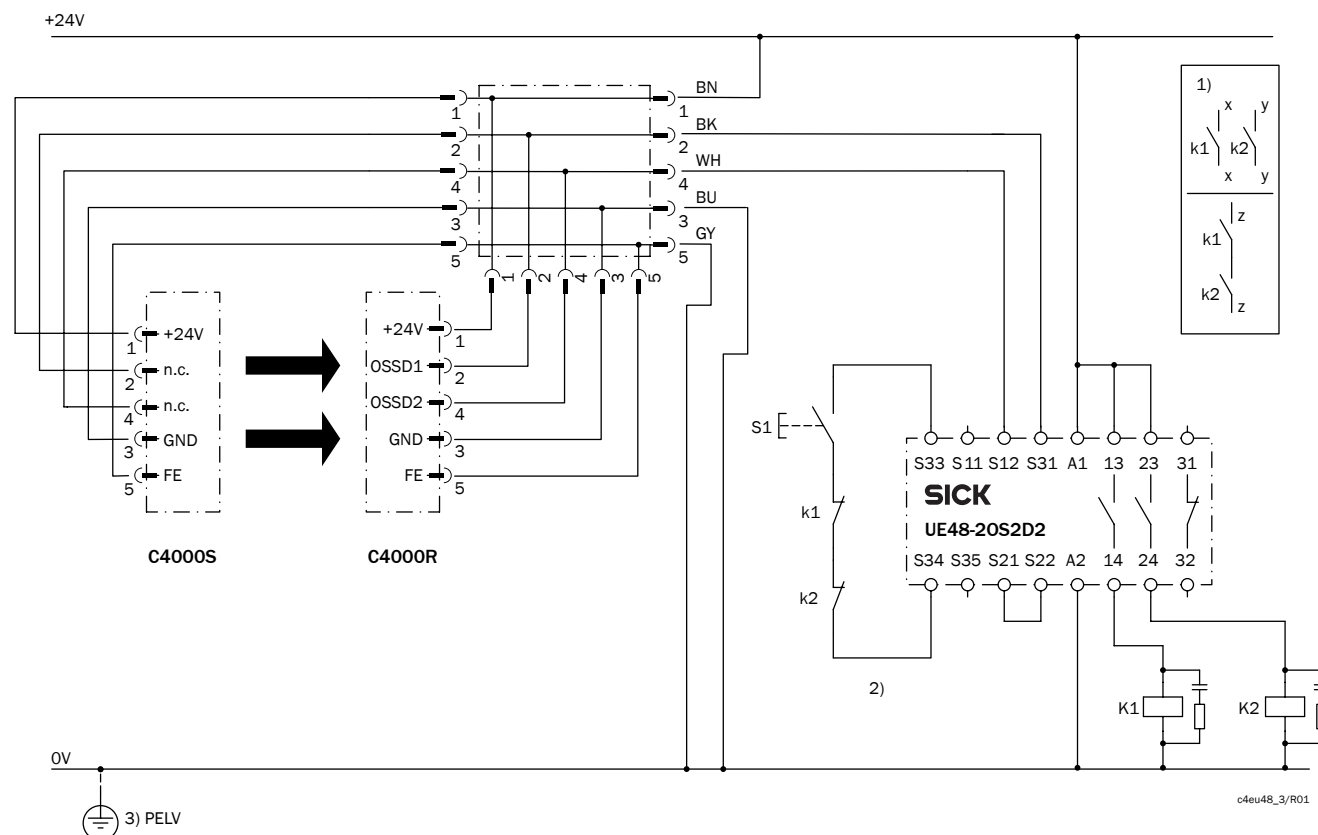
Protective field height S	L1	L2	A
300	372	417	224
450	523	568	374
600	674	718	524
750	824	869	674
900	975	1020	824
1050	1125	1170	974
1200	1274	1319	1124
1350	1426	1471	1274
1500	1577	1622	1424
1650	1727	1772	1574
1800	1878	1923	1724

Dimensions in mm

Connection diagrams

→ You can find more connection diagrams at www.sick.com

C4000 Eco connected with a T-distributor to UE48-20S safety relay.



Task

Connection of a C4000 Eco safety light curtain with a T-distributor to a UE48-20S safety relay.

Operating mode: with restart interlock and external device monitoring.

Operating characteristics

If the light path is clear, the OSSD1 and OSSD2 outputs are live. If K1 and K2 are de-energised and functioning correctly, the system is ready for switch on and waits for an input signal/switch on signal. The UE48 is switched on by pressing and releasing the button S1. The outputs (contacts 13-14 and 23-24) energise the contactors K1 and K2. If one or more light beams in the active protective field are interrupted, the outputs OSSD1 and OSSD2 shutdown the UE48-20S. The contactors K1 and K2 are de-energised.

Fault analysis

Cross-circuits and short-circuits of the OSSDs are detected and lead to the inhibited state (lock-out). The erroneous behaviour of one of the contactors K1 or K2 will be detected. The shutdown function is retained. On manipulation (e.g. jamming)

of the button S1, the UE48-20S will not re-enable the output current circuits.

Comments

- 1) Output circuit. These contacts have to be integrated in the control system in such a way that the hazardous state is overcome when the output circuit is open. In case of category 4 and 3 this integration shall have two channels (x, y, paths). An integration in the control system with one channel (z path) is only possible with single-channel control systems and under consideration of the risk analysis.
- 2) The external device monitoring is only statical.
- 3) PELV in accordance to EN 60204-1 / 6.4

Take note of the operating instructions of the integrated devices.

This circuit can also be used for the UE48-30S.

Accessories

Mounting systems

Description	Type of fastening	Packing unit	Remark	Part number
Mounting kit 2	Pivoting, swivel mount	4	For all protective field heights	2019659
Mounting kit 3	Pivoting, shock resistant	4	For all protective field heights	2017752
Mounting kit 6	Pivoting, side bracket	4	For all protective field heights	2019506
Mounting kit 11	Replacement bracket	4	Suitable for replacement of FGS	2021646
Stainless steel bracket	Pivoting	4	For all protective field heights	2023708
Reinforced stainless steel bracket	Pivoting	4	For all protective field heights	2026850

Sliding nuts/sliding blocks

Description	Packing unit	Remark	Part number
Sliding block (sliding nut)	4	Supplied with delivery	2017550

Connection cables

Connection type	Direction of the cable outlet	Type of connection	Cable length	Part number
Cable socket M12 x 4 + FE	Straight	Stripped	2 m	6008899
			5 m	6009868
			10 m	6010544
			15 m	6029215

Connection cables for T-distributor

Connection type	Direction of the cable outlet	Type of connection	Cable length	Remark	Part number
Cable socket M12 x 4 + FE	Straight	Stripped	0,6 m	For connection to T-distributor	6025930
			2 m		6025931

T-distributor

Description	Remark	Part number
T-distributor	For connection to connection cables M12 x 4 + FE	6030664

Interfaces

Description	Description	Type	Part number
Relay module	With 3 NO, 1 NC, screw type terminals	UE10-30S2D0	6024917
	With 3 NO, 1 NC, removable terminals	UE10-30S3D0	6024918
Safety relay for external restart interlock and external device monitoring	With 2 NO, 1 NC, screw type terminals	UE48-20S2D2	6024915
	With 2 NO, 1 NC, removable terminals	UE48-20S3D2	6024916
	With 3 NO, screw type terminals	UE48-30S2D3	6025089
	With 3 NO, removable terminals	UE48-30S2D4	6025097

Power supply

Input voltage	Output voltage	Maximum Power	Part number
120 / 240 V AC	24 V DC	50 W	7028789
120 / 240 V AC	24 V DC	95 W	7028790

Device columns

Länge	Suitable for protective field height	Remark	Part number
1200 mm	300 ... 900 mm	Incl. mounting kit 1 (2 pieces)	2021330
1500 mm	300 ... 1200 mm	Incl. mounting kit 1 (2 pieces)	2021331
1700 mm	300 ... 1350 mm	Incl. mounting kit 1 (2 pieces)	2021332

Additional front screens

Suitable for protective field height	Part number
300 mm	2022412
450 mm	2022413
600 mm	2022414
750 mm	2022415
900 mm	2022416
1050 mm	2022417
1200 mm	2022418
1350 mm	2022419
1500 mm	2022420
1650 mm	2022421
1800 mm	2022422

Additional front screens heavy duty

Suitable for protective field height	Part number
300 mm	2026853
450 mm	2026854
600 mm	2026855
750 mm	2026856
900 mm	2026857
1050 mm	2026858
1200 mm	2026859
1350 mm	2026860
1500 mm	2026861
1650 mm	2026862
1800 mm	2026863

Deflector mirrors

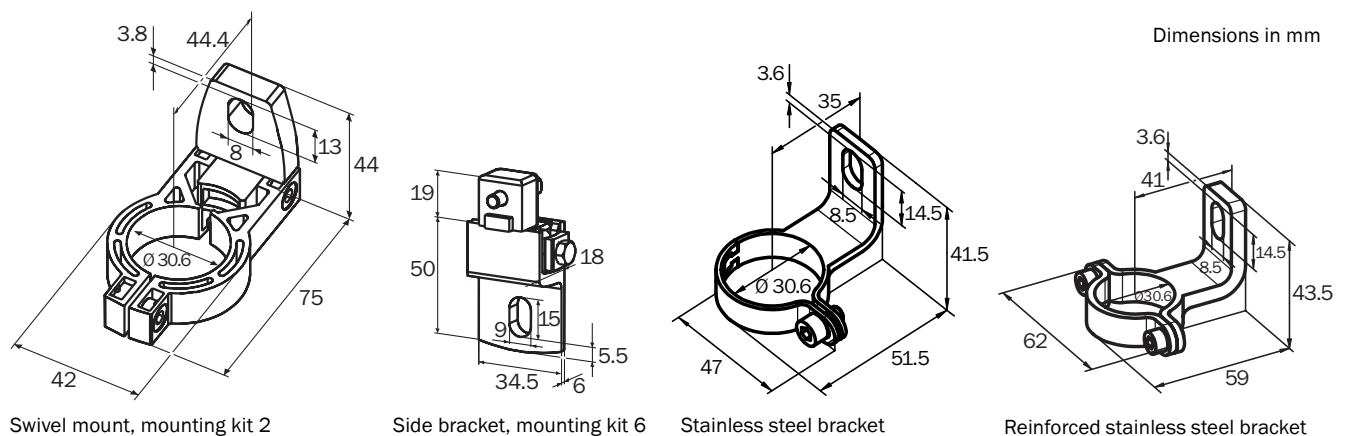
Description	Suitable for protective field height	Part number
PNS75-034	300 mm	1019414
PNS75-049	450 mm	1019415
PNS75-064	600 mm	1019416
PNS75-079	750 mm	1019417
PNS75-094	900 mm	1019418
PNS75-109	1050 mm	1019419
PNS75-124	1200 mm	1019420
PNS75-139	1350 mm	1019421
PNS75-154	1500 mm	1019422
PNS75-169	1650 mm	1019423
PNS75-184	1800 mm	1019424
PNS125-034	300 mm	1019425
PNS125-049	450 mm	1019426
PNS125-064	600 mm	1019427
PNS125-079	750 mm	1019428
PNS125-094	900 mm	1019429
PNS125-109	1050 mm	1019430
PNS125-124	1200 mm	1019431
PNS125-139	1350 mm	1019432
PNS125-154	1500 mm	1019433
PNS125-169	1650 mm	1019434
PNS125-184	1800 mm	1019435

Laser alignment

Description	Maximum scanning range	Light type	Part number
Laser alignment aid AR 60	60 m	Red light	1015741
Adapter AR60, C4000 Basic Plus	–	–	4032461

Documentation

Description	Remark	Part number
Operating instructions C4000 Basic Plus, C4000 Basic, C4000 Eco, C4000 Micro on CD-ROM	Supplied with delivery	2026783

Dimensional drawings mounting accessories

SICK Industrial Safety Systems

Safety laser scanners and safety camera system

- S3000
- PLS
- PLS Short Range
- V4000 Press Brake

Safety light curtains

- C4000 Micro
- C4000 Basic Plus, Basic, Eco
- C4000 Standard/Advanced
- C4000 Entry/Exit
- C4000 Palletizer
- C2000
- LGT

Multiple light beam safety devices

- M4000
- MSL
- MSL/MSM
- M2000

Single-beam photoelectric safety switches

- L4000 System
- WSU/WEU 26/2
- WS/WE 12-2 with LE20
- WS/WE 18-3 with LE20
- WS/WE 24-2 with LE20
- WS/WE 27-2 with LE20
- VS/VE 18-2 with LE20

Safety switches, safety sensors and safety operating devices

- Safety position switches
- Safety switches with separate actuator
- Safety locking devices
- Safety sensors
- Safety operating devices

Safety network solutions UE1000 series

- UE4120, UE4150, UE4155
- UE4212, UE4215, UE4231, UE4232
- UE4400 series in preparation

Safety controllers UE100 series

- UE440
- UE470

Safety relays UE10 series

- UE10 to UE48

Software

- Safexpert

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