



Industrial Safety Systems



C4000 Palletizer
Compact access protection – without muting





- Muting alternative
- Self-teach dynamic blanking
 - Goods detection
 - Palett detection
- Direction monitoring
- Beam coding
- Reduced resolution
- Object gap suppression
- Velocity monitoring
- Multiple sampling



Overview of technical specifications

Protective field height (depending on type)	750 mm ... 1800 mm
Scanning range	0.5 m ... 6 m
Resolution (depending on type)	30 mm / 40 mm
Type	Type 4 (IEC 61496)
Safety integrity level	SIL3 (IEC 61508), SILCL3 (IEC 62061)
Enclosure rating	IP 65

Product description

The C4000 Palletizer safety light curtain is the innovative muting alternative for access protection during automatic material transport.

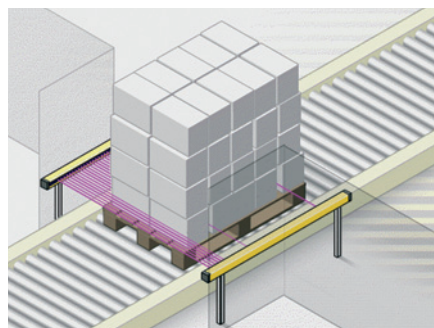
- Economical to procure: only one sensor pair means costs savings during planning, design, mounting, wiring and service
- Quickly placed in operation, pallets, mesh crates, etc. are recognised without programming
- Very high availability due to self-teach recognition of patterns on loading with different pallets
- Easily integrated : no secondary sensors necessary, only the OSSD's are implemented in the stop circuit
- Safer: provides protection in areas in which there is no object, unlike conventional muting solutions.

	C4000 Palletizer Standard	C4000 Palletizer Advanced
Detected objects	Packages (min. size of 500 mm)	Pallets, mesh crates, mesh carriage or packages (max. size 240 mm)
Pattern recognition	By size and solid shape of package	By size, number of objects (min. 2) and unchanging distances between objects
Automatic Teach-In		✓
Resolution	40 mm	30 mm

Applications

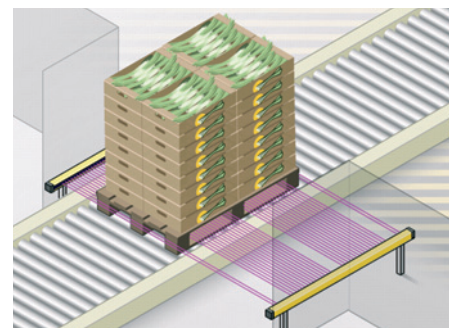
→ You can find more applications using the application finder at www.mysick.com

■ Material handling



Sensor differentiates between **goods** and **worker**

■ Packaging industry



Sensor differentiates between **pallets** and **worker**

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Ordering information

C4000 Palletizer Standard

- Resolution: 40 mm
- Scanning range: 0.5 m ... 6 m
- Type of blanking: Self-teach dynamic blanking

Protective field height	Sender		Receiver	
	Type	Part number	Type	Part number
750 mm	C40S-0704CD010	1043445	C40E-0704FP010	1043171
900 mm	C40S-0904CD010	1043446	C40E-0904FP010	1043172
1050 mm	C40S-1004CD010	1043447	C40E-1004FP010	1043173
1200 mm	C40S-1204CD010	1043448	C40E-1204FP010	1043174
1350 mm	C40S-1304CD010	1043449	C40E-1304FP010	1043175
1500 mm	C40S-1504CD010	1043450	C40E-1504FP010	1043176
1650 mm	C40S-1604CD010	1043451	C40E-1604FP010	1043177
1800 mm	C40S-1804CD010	1043452	C40E-1804CP010	1043178

C4000 Palletizer Advanced

- Resolution: 30 mm
- Scanning range: 0.5 m ... 6 m
- Type of blanking: Self-teach dynamic blanking

Protective field height	Sender		Receiver	
	Type	Part number	Type	Part number
750 mm	C40S-0703CD010	1041900	C40E-0703FK010	1043155
900 mm	C40S-0903CD010	1041901	C40E-0903FK010	1043156
1050 mm	C40S-1003CD010	1041902	C40E-1003FK010	1043157
1200 mm	C40S-1203CD010	1041903	C40E-1203FK010	1043158
1350 mm	C40S-1303CD010	1041904	C40E-1303FK010	1043159
1500 mm	C40S-1503CD010	1041905	C40E-1503FK010	1043160
1650 mm	C40S-1603CD010	1041907	C40E-1603FK010	1043161
1800 mm	C40S-1803CD010	1041908	C40E-1803FK010	1043162

C4000 Palletizer Advanced, extension connection at receiver (for e.g. bypass)

- Resolution: 30 mm
- Scanning range: 0.5 m ... 6 m
- Type of blanking: Self-teach dynamic blanking

Protective field height	Sender		Receiver	
	Type	Part number	Type	Part number
750 mm	C40S-0703CD010	1041900	C40E-0703GK010	1043220
900 mm	C40S-0903CD010	1041901	C40E-0903GK010	1043179
1050 mm	C40S-1003CD010	1041902	C40E-1003GK010	1043180
1200 mm	C40S-1203CD010	1041903	C40E-1203GK010	1043221
1350 mm	C40S-1303CD010	1041904	C40E-1303GK010	1043181
1500 mm	C40S-1503CD010	1041905	C40E-1503GK010	1043222
1650 mm	C40S-1603CD010	1041907	C40E-1603GK010	1043223
1800 mm	C40S-1803CD010	1041908	C40E-1803GK010	1043182

Detailed technical specifications

General data

	Sender	Receiver
Resolution (depending on type)	30 mm / 40 mm	
Scanning range	-	0.5 m ... 6 m
Protective field height (depending on type)	750 mm ... 1800 mm	
Safety related parameters	Type 4 (IEC 61496) SIL3 (IEC 61508), SILCL3 (IEC 62061) Category 4 (EN ISO 13849) PL e (EN ISO 13849) PFHd (probability of a dangerous failure/hour) $1,5 \times 10^{-8}$ TM (Mission Time) 20 a	
Response time (depending on type)	-	10 ms ¹⁾ ... 14 ms ¹⁾
Synchronisation	Optical, without separate synchronisation	
Protection class	3	
Enclosure rating	IP 65	
Ambient operating temperature from ... to	0 °C +55 °C	
Storage temperature from ... to	-25 °C +70 °C	
Air humidity from ... to	15 % ... 95 %, non-dewing	
Housing cross section	48 mm x 40 mm	
Vibration resistance	5 g (10 Hz ... 55 Hz)	
Shock resistance	10 g, 16 ms (IEC 60068-2-29)	

¹⁾ Without beam coding, with 1 x sampling, no cascaded systems. Other response times see operating instructions.

Functional data

	C4000 Palletizer Standard	C4000 Palletizer Advanced	C4000 Palletizer Advanced, extension connection
Restart interlock		✓	
Restart interlock (delivery status)		External	
External device monitoring		✓	
External device monitoring (delivery status)		Deactivated	
Beam coding		✓	
Beam coding (delivery status)		Non-coded	
Multiple sampling		✓	
Multiple sampling (delivery status)		3 x sampling	
Direction monitoring		✓	
Reduced resolution		✓	
Reduced resolution (delivery status)		2 beam reduced resolution	
Extension connection	-	-	✓
Emergency stop / bypass at extension connection		✓	
Bypass (with UE 402)		✓	
Operating mode switching (with UE 402)		✓	
Blanking			
Delivers status	Self-teach dynamic blinking Goods detection: 500 mm ... protective field height - 150 mm	Self-teach dynamic blanking Palett detection: 0 .. 240 mm / 2 ... 5 objects	
Velocity monitoring		✓ ¹⁾	
Goods detection	✓		
Object size monitoring	✓	✓ ²⁾	✓ ²⁾
Individual objects teach-in	✓	✓	✓
Object gap suppression	✓	✓ ²⁾	✓ ²⁾
Palett detection	-		✓
Object entry monitoring		✓	
Safe integration to bus system		✓	
SDL interface		✓	
CDS configuration via RS-232 interface		✓	
ATEX II 3G/3D (with ATEX Package)		✓	-

¹⁾ Software version V 06.2x or higher

²⁾ Only in case when blanking of a single object is configured

Electrical data

		Sender	Receiver
System connection	Configuration connection	Hirschmann plug M26 x 11 + FE	
	Cable length	M8 x 4 50 m ¹⁾	
	Conductor cross-section	0.8 mm ²	
	Extension connection	Hirschmann plug M26 x 11 + FE	
Supply voltage	24 V DC (19.2 V DC ... 28.8 V DC) ²⁾		
Ripple	≤ 10 % ³⁾		
Power consumption	Max. 1 A		Max. 1.8 A
Safety outputs (OSSD)	Type of output	-	
	Switching voltage LOW	-	
	Switching current	-	
	Opening time	-	
		2 PNP semiconductors, short-circuit protected, cross-circuit monitored 3.5 V DC 500 mA Min. 1000 ms	
Display elements	7-segment		

¹⁾ Depending on load, power supply and wire cross-section. The technical specifications must be observed.

²⁾ 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 (Siemens type series 6 EP 1).

³⁾ Within the limits of U_V .

UE402

General data

Protection class	III (IEC 536:1976)
Enclosure rating	IP 20 (IEC 60529)
Safety related parameters	Type
	Type 4 (IEC 61496)
Ambient operating temperature from ... to	0 °C ... +55 °C
Air humidity from ... to	15 % ... 95 %, non-dewing
Storage temperature from ... to	-25 °C ... +70 °C
Weight	120 g
Housing material	Plastic

Functional data

Bypass	✓
Operating mode switching	✓

Electrical data

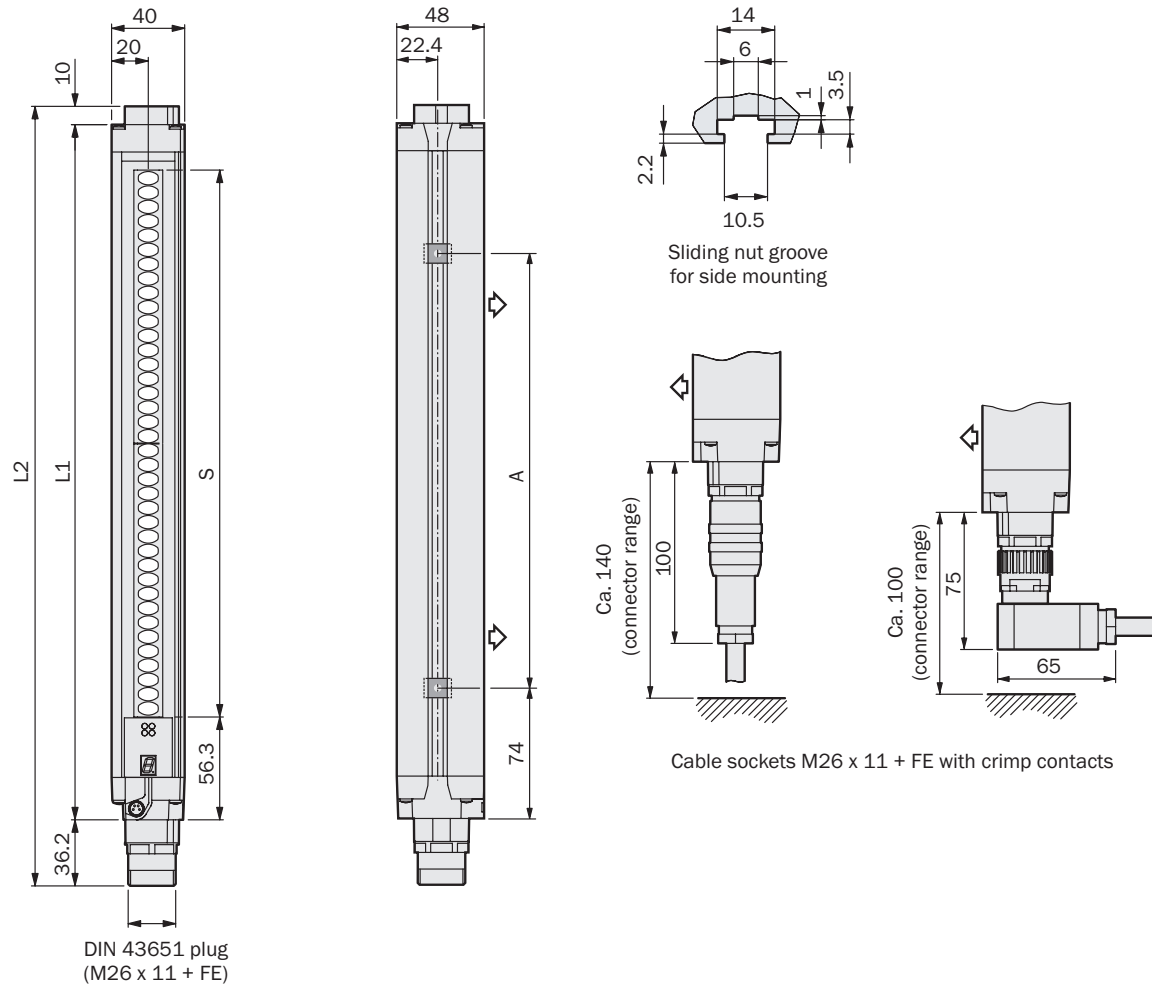
Supply voltage V_s	24 V DC (19.2 V DC ... 28.8 V DC)	
Ripple	10 %	
Power consumption	Max. 110 mA	
Switch-on time	4 s	
IN A1 ... A6	Switching voltage HIGH	24 V DC (11 V DC ... 30 V DC)
	Switching voltage LOW	-30 V DC ... 5 V DC
	Switching current HIGH	6 mA ... 20 mA
	Switching current LOW	-3 mA ... 0.5 mA
	Change over time operating mode selection	Max. 2 s
IN B1, IN B2, OUT B1, OUT B2	Change over time bypass	Max. 2 s
	Synchronous time monitoring	200 ms

Safety outputs

Connection type	Screw- terminal connector
Conductor cross-section	0.2 mm ² ... 2.5 mm ²

Dimensional drawings

C4000 Palletizer Standard, C4000 Palletizer Advanced

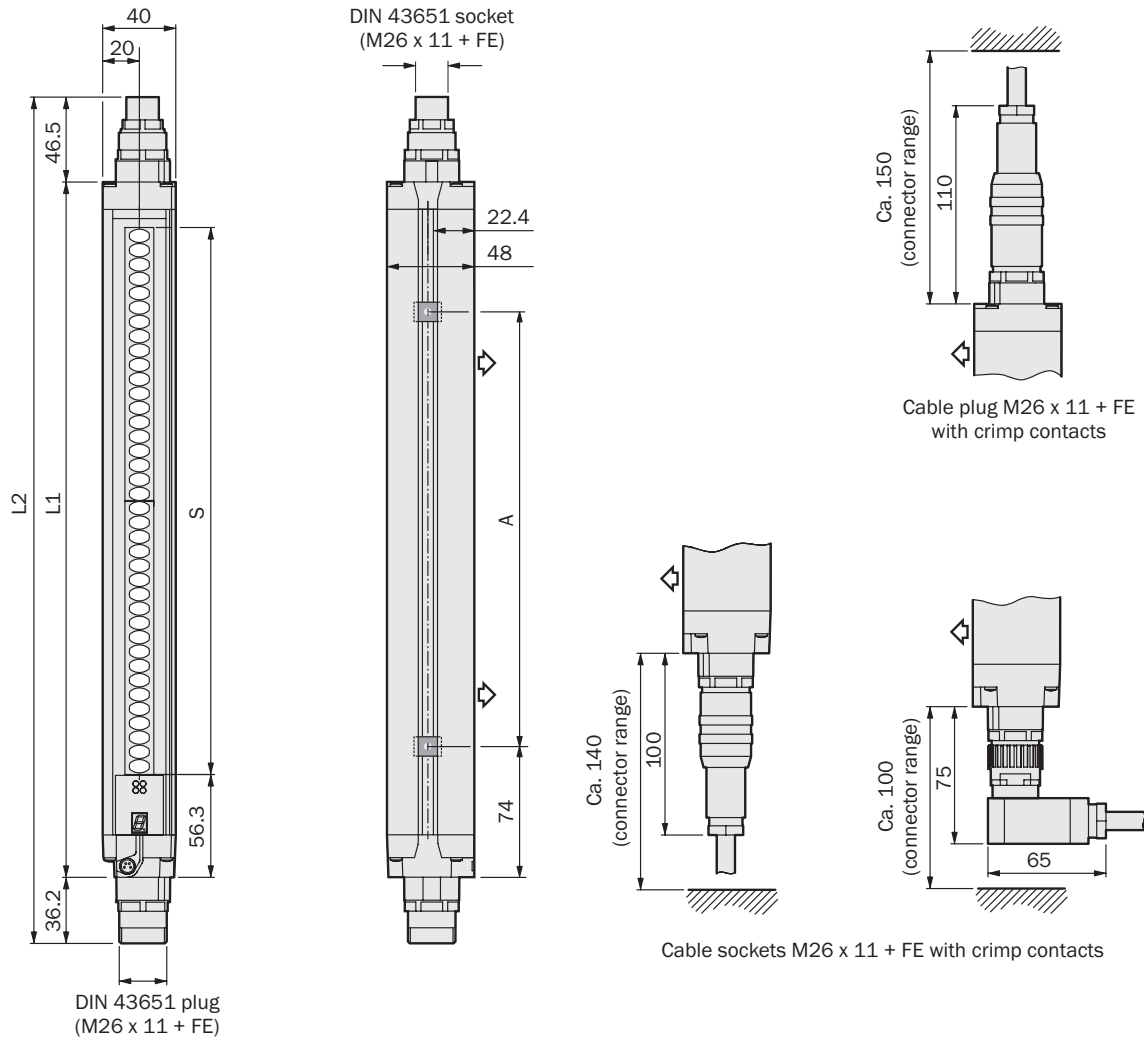


Dimensions in mm

Protective field height	L1	L2	A
750	833	879	674
900	984	1030	824
1050	1134	1180	974
1200	1283	1329	1124
1350	1435	1481	1274
1500	1586	1632	1424
1650	1736	1782	1574
1800	1887	1933	1724

Dimensions in mm

C4000 Palletizer Advanced, extension connection



Dimensions in mm

Protective field height S	L1	L2	A
750	833	895	674
900	984	1046	824
1050	1134	1196	974
1200	1283	1346	1124
1350	1435	1497	1274
1500	1586	1649	1424
1650	1736	1798	1574
1800	1887	1949	1724

Dimensions in mm

Accessories

Mounting systems

Designation	Property	Packing unit	Remark	Part number
Mounting kit 1	Rigid	4	-	7021352
Mounting kit 2	Swivel Mount	4	For all protective field heights	2019659
Mounting kit 3	Adjustable, vibration-absorbing	4	-	2017752
Mounting kit 6	Swivel function, side bracket	4	For all protective field heights	2019506
Mounting kit 11	Replacement bracket	4	Suitable for replacement of FGS	2021646
Stands	Stand	2	For safety light curtains and multiple light beam safety devices	2041661
Stainless steel bracket	Adjustable	4	For all protective field heights	2023708
Omega bracket	Mounting brackets	4	For all protective field heights	2044847
Reinforced stainless steel bracket	Adjustable	4	For all protective field heights	2026850

Sliding nuts/sliding blocks

Designation	Packing unit	Remark	Part number
Sliding block (sliding nuts)	4	Included with delivery	2017550

Connection cables

Connection type	Cable alignment	Cable length	Part number
Hirschmann cable socket M26 x 11 + FE	Straight	2.5 m	2022544
		5 m	2022545
		7.5 m	2022546
		10 m	2022547
		50 m	2033548
		15 m	2022548
		20 m	2022549
		30 m	2022550

Cable receptacles

Connection type	Cable alignment	Part number
Hirschmann cable socket M26 x 11 + FE	Straight	6020757
	Angled	6020758

Connector

Connection type	Cable alignment	Part number
Hirschmann cable plug M26 x 11 + FE	Angled	6021192
	Straight	6021191

Configuration connection cable

Connection type	Remark	Cable length	Part number
M8 x 4, SUB-D 9-pol	For connecting the configuration connection to the PC	2 m	6021195
		8 m	2027649

Power supply units

Input voltage	Output voltage	Maximum output current	Part number
100 V AC ... 240 V AC	24 V DC	2.1 A	7028789
		3.9 A	7028790

Additional front screen

Suitable for protective field height	Part number
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 screen Heavy Duty

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

Explosion protection

Type	Part number
ATEX packet	2029961

Laser alignment aid

Designation	Scanning range	Type of light	Output voltage	Part number
Laser alignment aid - AR 60	Max. 60 m	Visible red light	3 V	1015741
Adapter for AR60, for large housing profile	-	-	-	4032461

Configuration software

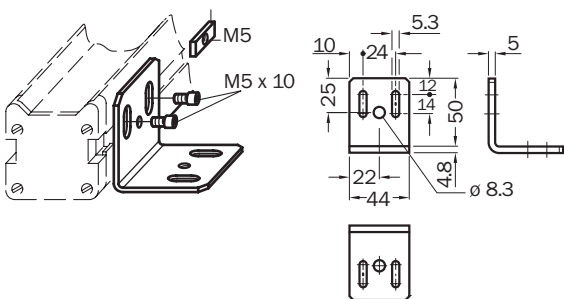
Designation	Description	Part number
CDS	CDS (Configuration & Diagnostic Software) on CD-ROM including online documentation and operating instructions in all available languages	2032314

Configuration tools

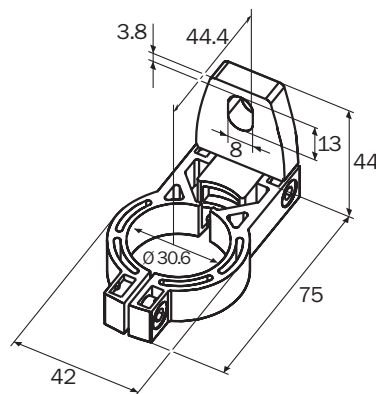
Designation	Remark	Part number
Clone Plug for C4000 and M4000	For C4000 Standard / Advanced / Palletizer / Entry/Exit and M4000 Advanced	1029665

Dimensional drawings mounting systems

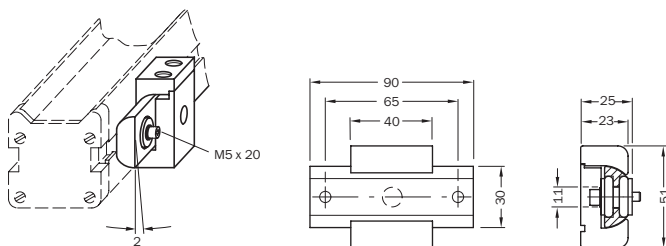
Mounting kit 1



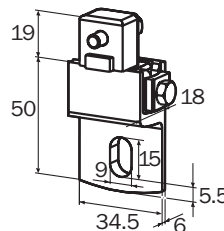
Mounting kit 2



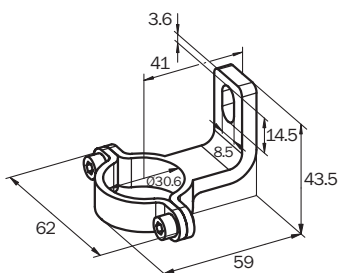
Mounting kit 3



Mounting kit 6



Reinforced stainless steel bracket



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