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DATA SHEET

C4P-EA03031C00

deTec
Safety light curtains

SICK Sensor Intelligence



Illustration may differ

SAFETY LIGHT CURTAINS

C4P-EA03031C00

ORDERING INFORMATION

Type	part no.
C4P-EA03031C00	1220137

Further device versions and accessories at www.sick.com/deTec

DETAILED TECHNICAL DATA

FEATURES

Product version	deTec4
Application	Normal industrial environment
System part	Receiver
Resolution	30 mm
Scanning range	30 m
Protective field height	300 mm
Response time	9 ms (Uncoded) 12 ms (code 1 or code 2)
No blind zones	Yes
Synchronization	Optical synchronization
Items supplied	Receiver Test rod with diameter corresponding to the resolution of the safety light curtain Safety instruction Mounting instructions Operating instructions for download

SAFETY-RELATED PARAMETERS

Type	Type 4 (IEC 61496-1)
Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
PFH_D (mean probability of a dangerous failure per hour)	
Single device	15.3×10^{-9}
Cascade with one guest	30.5×10^{-9}
Cascade with two guest devices	45.6×10^{-9}
T_M (mission time)	20 years (ISO 13849-1)
Safe state in the event of a fault	At least one OSSD is in the OFF state.

FUNCTIONS

Note	The product can be used with different function packages. The function packages are determined by the equipment used.
Function package SP1	Protective operation Automatic calibration of the protective field width Beam coding Restart interlock External device monitoring (EDM) Cascading Equipment: Sender and receiver with SP1 system plug
Function package SP2	Function package SP1 included Smart presence detection Reduced resolution (Basic) Dynamic protective field width during operation Muting (2-signal muting) Partial muting Smart Box Detection Equipment: Sender with SP1 system plug and receiver with SP2 system plug
Function package DMM4	Function package SP2 included (except Smart Box Detection) Smart restart interlock Transmitting power adjustment Muting (4-signal muting) Fixed blanking Operating modes Configurable multiple sampling Inputs for safety sensors (SDI) Equipment: Sender and receiver with SP1 system plug and DMM4 extension module
Function package DCM4	Function package SP2 included Smart restart interlock Reduced resolution (Advanced) Transmitting power adjustment Fixed blanking Teach-in for fixed blanking Floating blanking Operating modes Configurable multiple sampling Object pattern recognition Equipment: Sender and receiver with SP1 system plug and DCM4 extension module

INTERFACES

System connection	Depending on system plug (M12 male connector, 5-pin or 8-pin)
Extension connection	Depending on system plug (without extension connection or with M12 female connector, 5-pin)
Configuration method	DIP switch on system plug
Display elements	LEDs
Display of the synchronization status of the upper and lower beams	✓
Application diagnostic output (ADO)	✓
IO-Link	✓
Near Field Communication (NFC)	✓

ELECTRONICS

Protection class	III (IEC 61140)
Supply voltage V_S	24 V DC (19.2 V ... 28.8 V)
Ripple	≤ 10 %

[1] Applies to the voltage range between –30 V and +30 V.

Power consumption typical	3.23 W (DC)
Output signal switching devices (OSSDs)	
Type of output	2 PNP semiconductors, short-circuit protected, cross-circuit monitored [1]
ON state, switching voltage HIGH	24 V DC (V_s – 2.25 V DC ... V_s)
OFF state, switching voltage LOW	≤ 2 V DC
Current-carrying capacity per OSSD	≤ 500 mA
Application diagnostic output (ADO)	
Type of output	PNP semiconductor, short-circuit protected [1]
Output voltage HIGH (active)	≥ V_s – 3 V
Output voltage LOW (deactivated)	High resistance
Output current HIGH (active)	≤ 100 mA

[1] Applies to the voltage range between –30 V and +30 V.

MECHANICS

Dimensions	See dimensional drawing
Housing material	Aluminum extruded profile

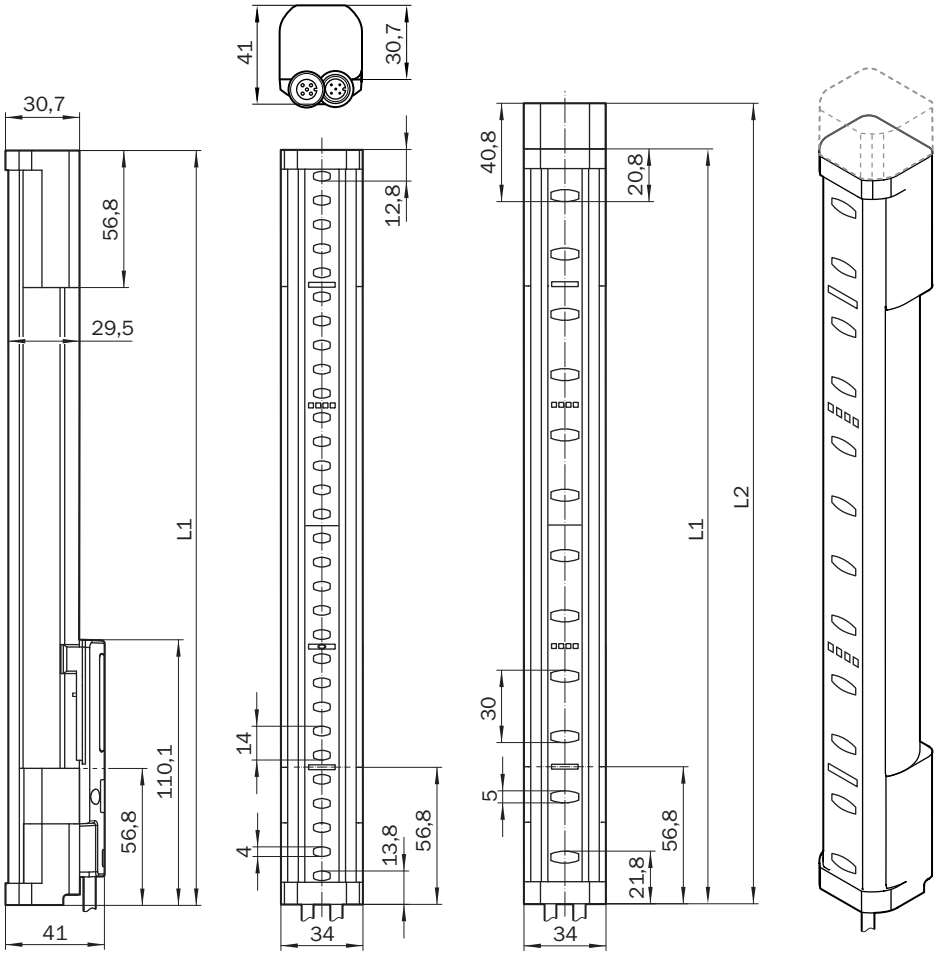
AMBIENT DATA

Enclosure rating	IP65 (IEC 60529) IP67 (IEC 60529)
Ambient operating temperature	–30 °C ... +55 °C
Storage temperature	–30 °C ... +70 °C
Air humidity	15 % ... 95 %, Non-condensing
Vibration resistance	5 ... 150 Hz, 3,5 mm / 1 g (EN 60068-2-6)
Shock resistance	15 g / 6 ms (EN 60068-2-27)
Class	3M4 (IEC TR 60721-4-3)

CERTIFICATES

EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
UK-Type-Examination approval	✓
S Mark certificate	✓
ULus approval	✓
cUL approval	✓
Taiwan OSHA certificate	✓
Japan Press Safety certificate	✓
EC-Type-Examination approval	✓
China GB/T certificate	✓
Information according to Art. 3 of Data Act (Regulation EU 2023/2854)	✓

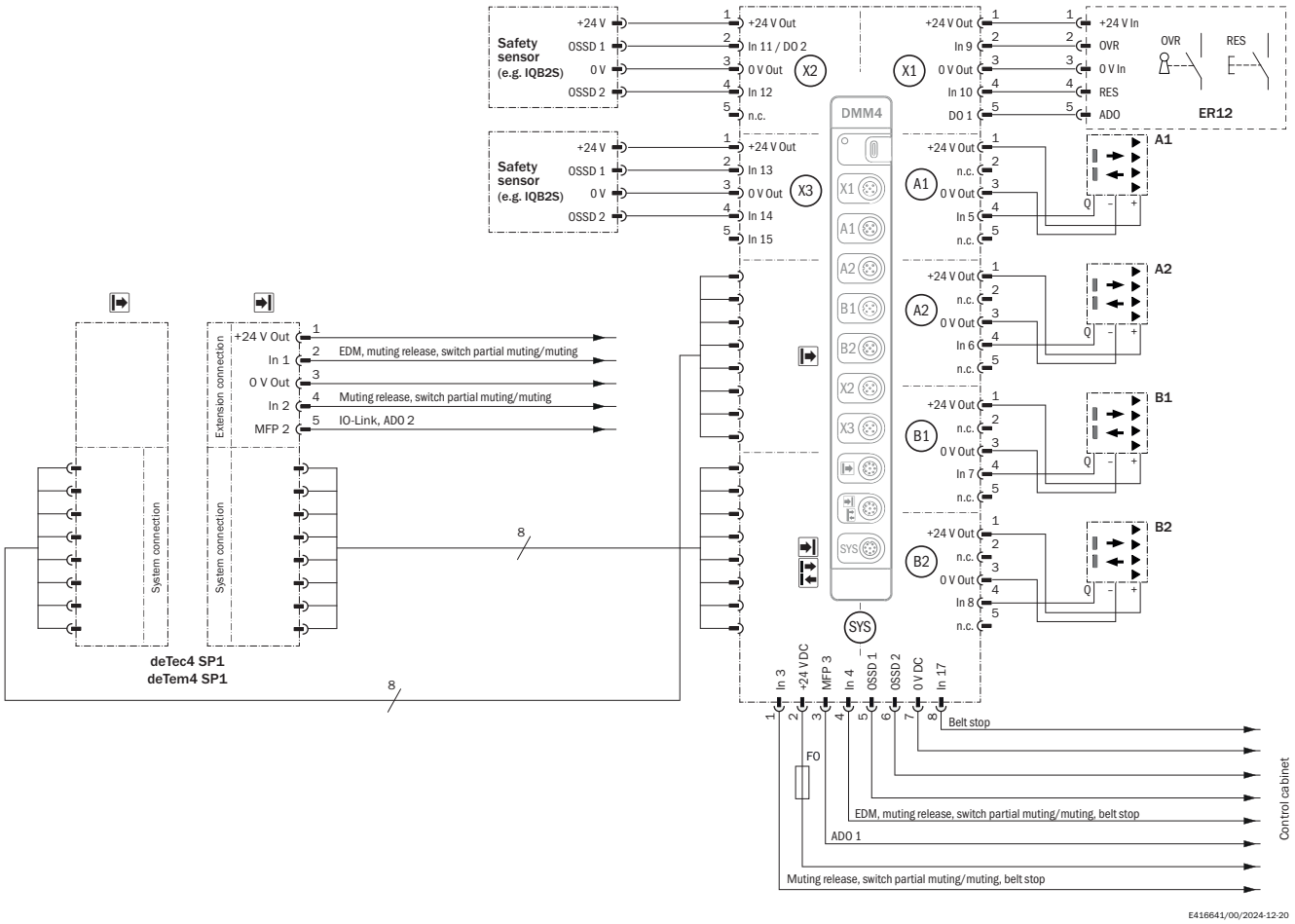
DIMENSIONAL DRAWING



Dimensions in mm (inch)

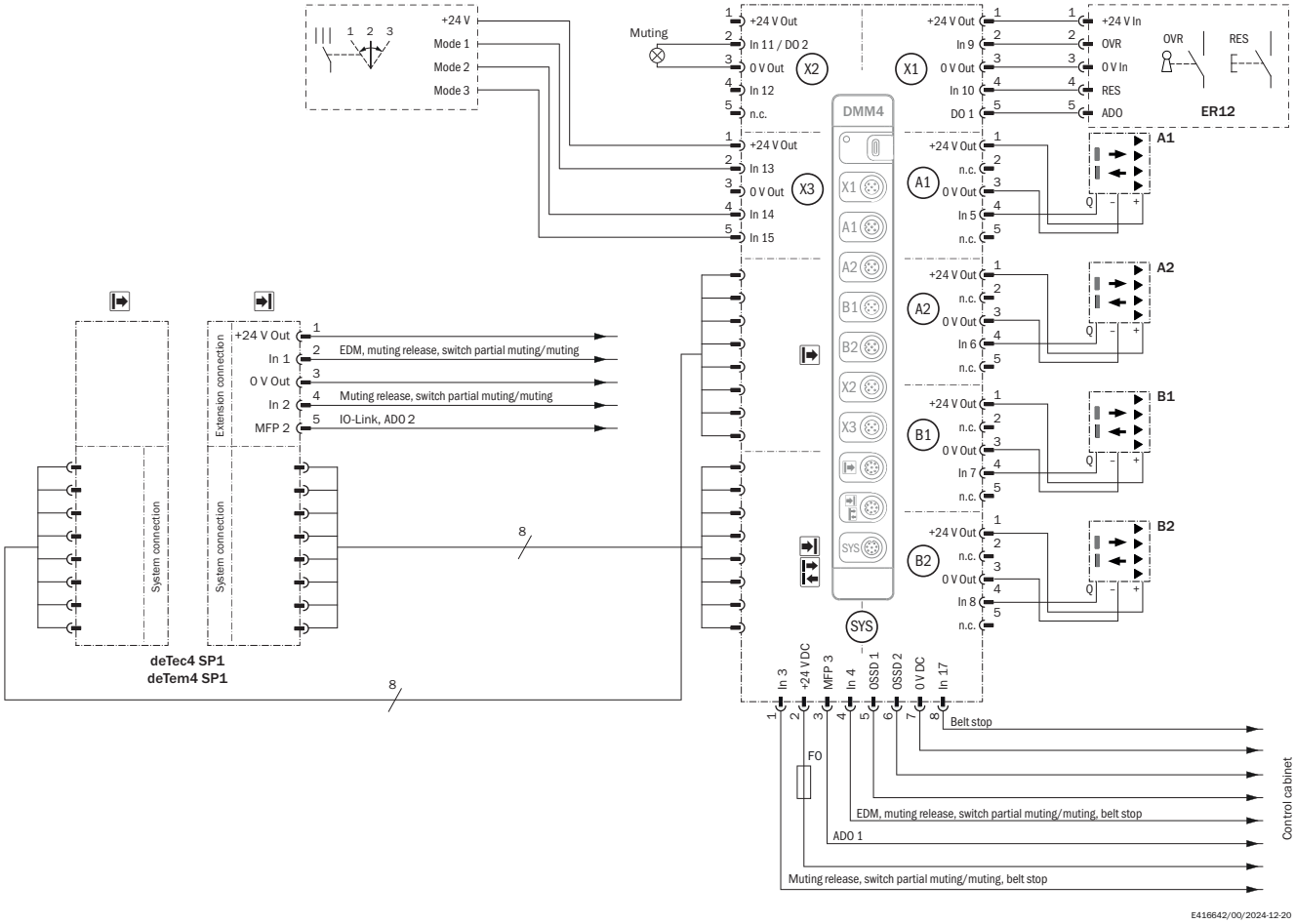
Protective field height	L1	L2
300 (11.81)	313 (12.32)	332 (13.07)
450 (17.72)	463 (18.23)	482 (18.98)
600 (23.62)	613 (24.13)	632 (24.88)
750 (29.53)	763 (30.04)	782 (30.79)
900 (35.43)	913 (35.94)	932 (36.69)
1,050 (41.34)	1,063 (41.85)	1,082 (42.6)
1,200 (47.24)	1,213 (47.75)	1,232 (48.5)
1,350 (53.15)	1,362 (53.62)	1,381 (54.37)
1,500 (59.06)	1,512 (59.53)	1,531 (60.28)
1,650 (64.96)	1,662 (65.43)	1,681 (66.18)
1,800 (70.87)	1,812 (71.34)	1,831 (72.09)
1,950 (76.77)	1,962 (77.24)	1,981 (77.99)
2,100 (82.68)	2,112 (83.15)	2,131 (83.9)

CONNECTION DIAGRAM DETEC4 / DETEM4 ON DMM4, CONNECTION EXAMPLE, MUTING, RESET, OVERRIDE, SDI



The requirements in the operating instructions of the devices used must be adhered to.

CONNECTION DIAGRAM DETEC4 / DETEM4 ON DMM4, MUTING, RESET, OVERRIDE, OPERATING MODE SELECTION



The requirements in the operating instructions of the devices used must be adhered to.

Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1220137

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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