Product data sheet



UE48-20S3D2

UE48-20S

SAFETY RELAYS

SICK
Sensor Intelligence.



Illustration may differ

Ordering information

Type	Part no.
UE48-20S3D2	6024916

Other models and accessories → www.sick.com/UE48-20S

Detailed technical data

Safety-related parameters

Safety integrity level	SIL3 (IEC 61508) SILCL3 (EN 62061)
Category	Category 4 (EN ISO 13849)
Performance level	PL e (EN ISO 13849)
B_{10d} parameter	1.26 x 10^6 switching cycles (AC-15, 230 V, I = 1.5 A) 5.9 x 10^6 switching cycles (AC-15, 230 V, I = 0.75 A) 4.35 x 10^5 switching cycles (DC-13, 24 V, I = 2.5 A) 1 x 10^7 switching cycles (DC-13, 24 V, I = 0.63 A)
PFH_D (mean probability of a dangerous failure per hour)	3.0 x 10^{-8} (EN ISO 13849)
T_M (mission time)	20 years (EN ISO 13849)
Stop category	0 (EN 60204-1)

Interfaces

Connection type	Plug-in screw-type terminals
Number of enabling current paths (N/O)	2, relevant for safety

Electrical data

Operating data

Voltage supply	A1, A2
Output circuit > 25 V AC / 60 V DC	PELV
Output circuit ≤ 25 V AC / 60 V DC	PELV or SELV
Supply voltage V_s	A1, A2 24 V AC/DC (20.4 V AC/DC ... 26.4 V AC/DC)
Residual ripple	≤ 2.4 V_{pp} [1]

[1] In DC operation, within the limits of V_S.

Power consumption	(≤ 4.6 VA (AC)) (≤ 2.1 W (DC))
Overvoltage category	II
Rated insulation voltage U_i	300 V AC
Rated impulse withstand voltage U_{imp}	4 kV
Test voltage	2 kV (50 Hz) (EN 60439-1)

[1] In DC operation, within the limits of V_S.

Control voltage: S11, S21, S33

Control voltage	22 V DC (≥ 17.4 V DC)
Control current	40 mA ... 100 mA
Short-circuit current	≤ 300 mA, between S33 / S11 and S21
Short-circuit protection	Electronic fuse
Galvanized decoupling	– (between A1, A2 and S11, S21, S33)

Input circuits: S12, S22, S31, S34, S35

Input voltage	
HIGH	17.4 V DC ... 26.4 V DC
LOW	–3 V DC ... 5 V DC
Input current	
S12, S22, S31	≤ 100 mA
S34, S35	≤ 50 mA
Reset time	
Manual	≤ 40 ms
Automatic	≤ 80 ms
Activation time of reset button	≥ 50 ms
Test pulse width	≤ 1,000 µs
Test pulse rate	≤ 10 Hz
Cable resistance	≤ 35 Ω

Output current paths: 13/14, 23/24, 31/32, 33/34

Response time	≤ 25 ms [1]
Number of enabling current paths (N/O)	2, relevant for safety
Number of signaling current paths (normally closed)	1, not safety-relevant
Contact type	Positively driven
Contact material	Silver alloy, gold flashed
Switching voltage	
Enabling current path	10 V AC ... 230 V AC 10 V DC ... 300 V DC
Signaling current path	10 V AC ... 230 V AC 10 V DC ... 300 V DC
Current-carrying capacity per OSSD	
Enabling current path	10 mA ... 6 A

[1] K1/K2.

Signaling current path	10 mA ... 6 A
Total current	≤ 12 A
Usage category	AC-15/DC-13 (EN 60947-5-1)
Rated operating current (voltage)	4 A (230 V AC) 360 switching cycles/h 3 A (230 V AC) 3600 switching cycles/h 4 A (24 V DC) 360 switching cycles/h 2.5 A (24 V DC) 3600 switching cycles/h
Switching frequency	≤ 3600/h
Mechanical life (relay contacts)	1 x 10^7 switching cycles
Electrical life (relay contacts)	2 x 10^6 switching cycles

[1] K1/K2.

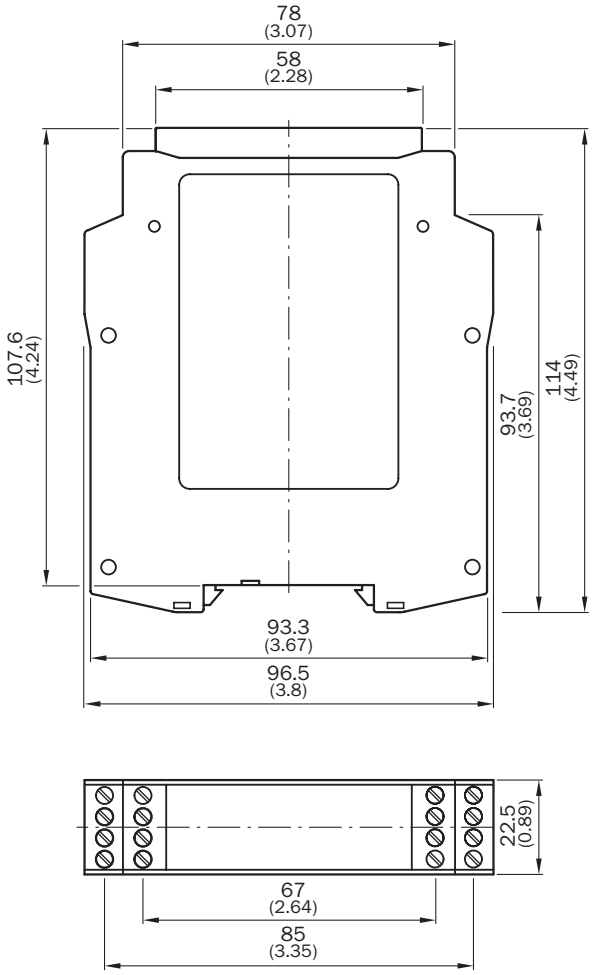
Mechanical data

Dimensions (W x H x D)	22.5 mm x 114 mm x 96.5 mm
Contamination rating	3 (EN 50178)
Weight	0.21 kg

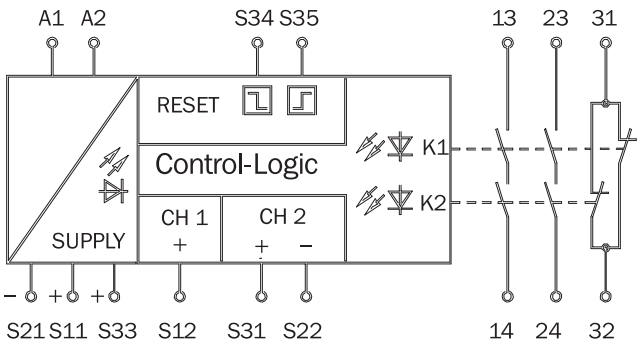
Classifications

ECl@ss 5.0	27371990
ECl@ss 5.1.4	27371990
ECl@ss 6.0	27371819
ECl@ss 6.2	27371819
ECl@ss 7.0	27371819
ECl@ss 8.0	27371819
ECl@ss 8.1	27371819
ECl@ss 9.0	27371819
ECl@ss 10.0	27371819
ECl@ss 11.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449
ETIM 8.0	EC001449
UNSPSC 16.0901	41113704

Dimensional drawing (Dimensions in mm (inch))



Connection diagram



SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

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