



DATA SHEET

UE48-20S3D2

UE48-20S
Safety relays



Illustration may differ

SAFETY RELAYS

UE48-2OS3D2

ORDERING INFORMATION

Type	part no.
UE48-2OS3D2	6024916

Further device versions and accessories at www.sick.com/UE48-2OS

DETAILED TECHNICAL DATA

SAFETY-RELATED PARAMETERS

Safety integrity level	SIL 3 (IEC 61508)
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)

ELECTRONICS - 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⁾
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.

ELECTRONICS - 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

ELECTRONICS - 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	40 mA $\leq$ 100 mA
	S34, S35	≤ 50 mA
Reset time	Manual	≤ 40 ms
	Automatic	≤ 80 ms
Activation time of reset button		≥ 50 ms
Test pulse width		$\leq 1,000$ μ s
Test pulse rate		≤ 10 Hz
Cable resistance		≤ 35 Ω

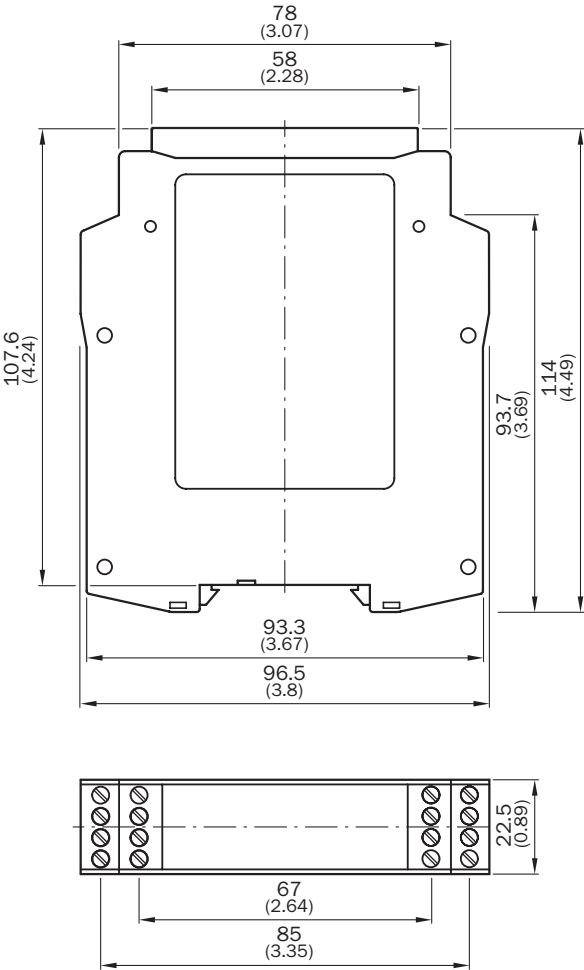
ELECTRONICS - OUTPUT CURRENT PATHS: 13/14, 23/24, 31/32, 33/34

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, 10 V DC ... 230 V AC, 300 V DC
Current loading	Enabling current path	10 mA ... 6 A
	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)		1×10^7 switching cycles
Electrical life (relay contacts)		2×10^6 switching cycles

¹⁾ K1/K2.**MECHANICS**

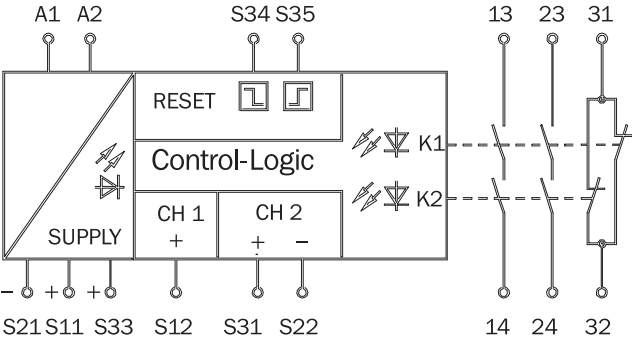
Dimensions (W x H x D)	22.5 mm x 114 mm x 96.5 mm
Contamination rating	3 (EN 50178)
Weight	0.21 kg

DIMENSIONAL DRAWING



Dimensions in mm (inch)

CONNECTION DIAGRAM



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/6024916



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