



DATA SHEET

UE48-20S2D2

UE48-20S
Safety relays



Illustration may differ

SAFETY RELAYS

UE48-2OS2D2

ORDERING INFORMATION

Type	part no.
UE48-2OS2D2	6024915

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

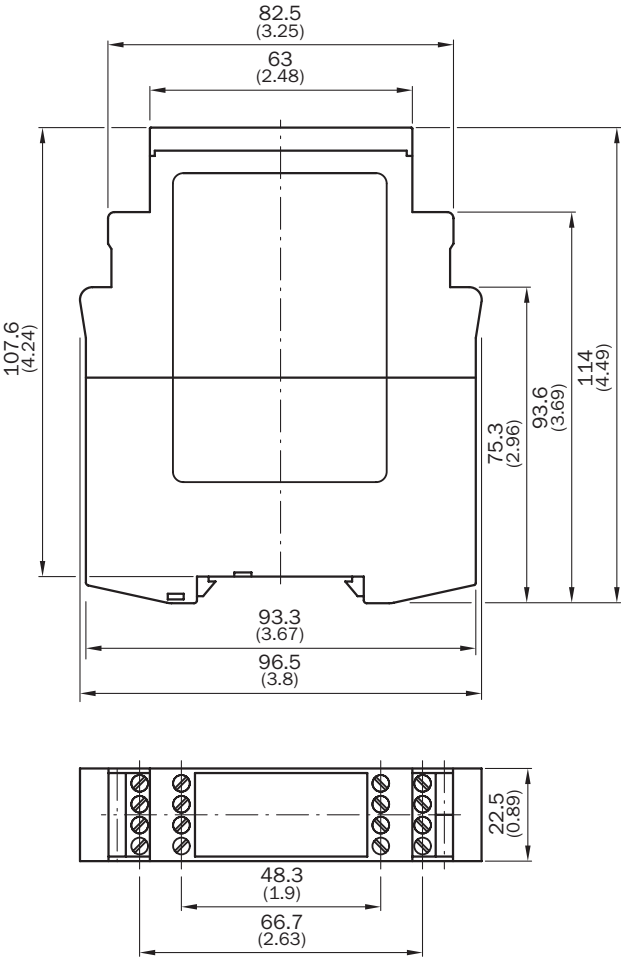
ELECTRONICS - OUTPUT CURRENT PATHS: 13/14, 23/24, 31/32, 33/34

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**

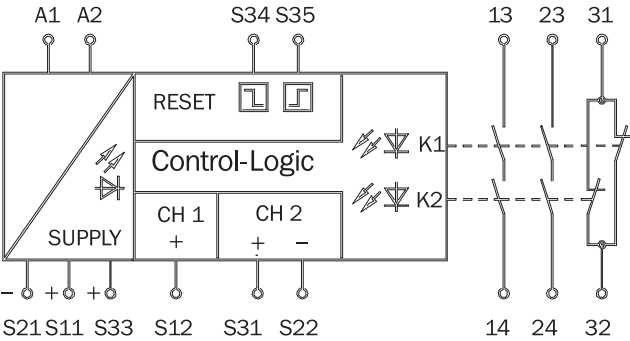
Dimensions (W x H x D)	22.5 mm x 114 mm x 96.5 mm
Contamination rating	3 (EN 50178)
Weight	0.21 kg

DIMENSIONAL DRAWING SAFETY RELAY



Dimensions in mm (inch)

CONNECTION DIAGRAM



Further information as well as suitable accessories, example applications and downloads such as CAD di-
mensional models, operating instructions and software can be found at www.sick.com/6024915



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