



DATA SHEET

UE45-3S13D33

UE45-3S1
Safety relays



Illustration may differ

SAFETY RELAYS

UE45-3S13D33

ORDERING INFORMATION

Type	part no.
UE45-3S13D33	6024912

Further device versions and accessories at www.sick.com/UE45-3S1

DETAILED TECHNICAL DATA

SAFETY-RELATED PARAMETERS

Safety integrity level	¹⁾
Category	Category 4 (EN ISO 13849) ²⁾ Category 3 (EN ISO 13849) ¹⁾
Performance level	PL e (EN ISO 13849) ²⁾ PL d (EN ISO 13849) ¹⁾
B _{10d} parameter	4 x 10 ⁵ switching cycles (with maximum load)
PFH ₀ (mean probability of a dangerous failure per hour)	3.0 x 10 ⁻⁸ (EN ISO 13849) ²⁾ 2.0 x 10 ⁻⁸ (EN ISO 13849) ¹⁾
T _M (mission time)	20 years (EN ISO 13849)
Stop category	0 (EN 60204-1) ²⁾ 1 (EN 60204-1) ¹⁾

¹⁾ For time contacts 37/38.

²⁾ For contacts 13/14, 23/24.

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 DC (20.4 V DC ... 26.4 V DC)
Residual ripple	(≤ 2.4 V _{pp}) ¹⁾
Power consumption	2.6 W (DC)
Overvoltage category	II

¹⁾ In DC operation, within the limits of V_s.

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_G .

ELECTRONICS - CONTROL VOLTAGE: S11/S33, S21

Control voltage	22 V DC
Short-circuit current	≤ 2.2 A, between S 11 and A 2
Short-circuit protection	PTC resistor

ELECTRONICS - INPUT CIRCUITS: S12, S31/S22

Input current	25 mA
Reset time	Manual (≤ 30 ms) Automatic (≤ 600 ms)
Activation time of reset button	≤ 30 ms ≤ 600 ms
Synchronous time monitoring	≤ 500 ms
Cable resistance	$\leq 85 \Omega$

ELECTRONICS - OUTPUT CURRENT PATHS: 13/14, 23/24, 37/38

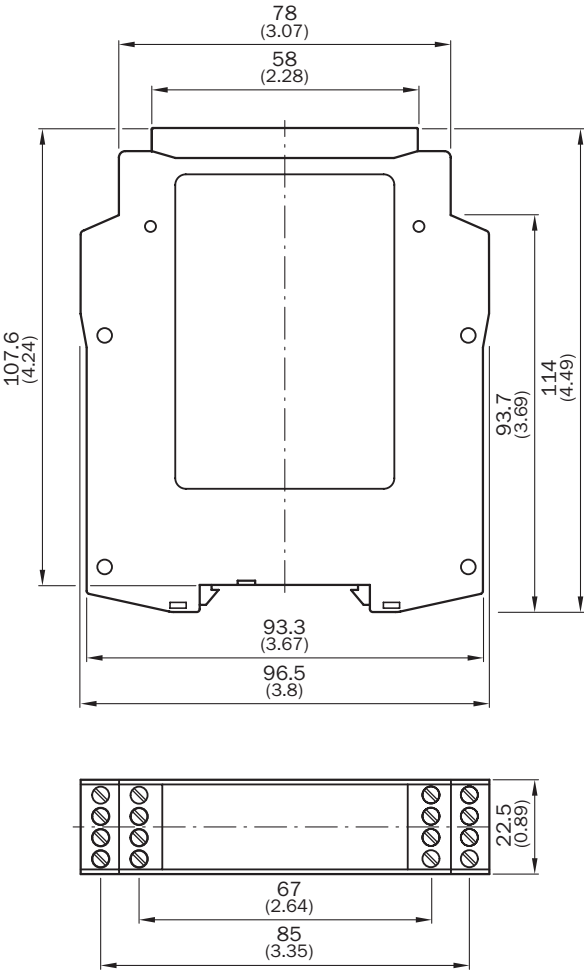
Response time	25 ms ¹⁾
Off-delay time	0.15 s ... 3 s
Number of enabling current paths (N/O)	2, category 4
Number of off-delayed N/O contacts	1, category 3
Number of on-delayed N/O contacts	Category 3
Contact type	Positively driven
Contact material	Silver alloy, gold flashed
Switching voltage	Enabling current path 10 V AC ... 230 V AC 10 V DC ... 300 V DC
Current loading	Enabling 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 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)	5×10^6 switching cycles
Electrical life (relay contacts)	2×10^6 switching cycles

¹⁾ K1/K2.

MECHANICS

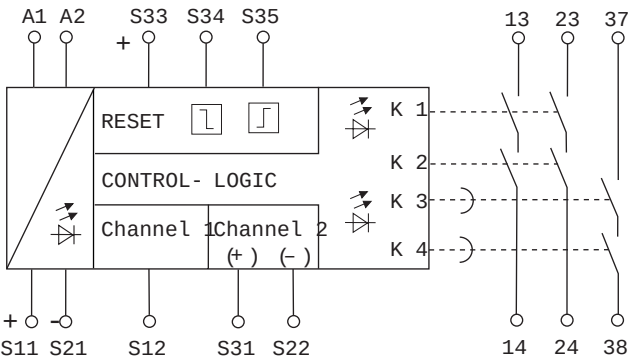
Dimensions (W x H x D)	22.5 mm x 114 mm x 96.5 mm
Contamination rating	3 (EN 50178)
Weight	0.2 kg

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/6024912



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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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