



UE48-20S2D2

UE48-20S

SAFETY RELAYS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

Type	part no.
UE48-20S2D2	6024915

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

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

¹⁾ K1/K2.

Electrical life (relay contacts)	2 x 10 ⁶ switching cycles
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¹⁾ K1/K2.

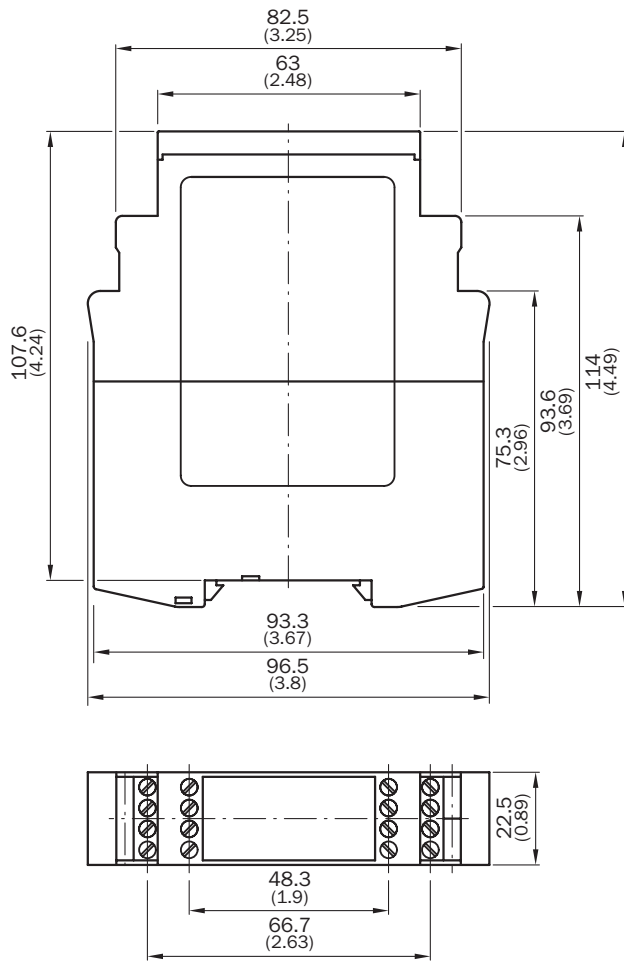
Mechanics

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

Classifications

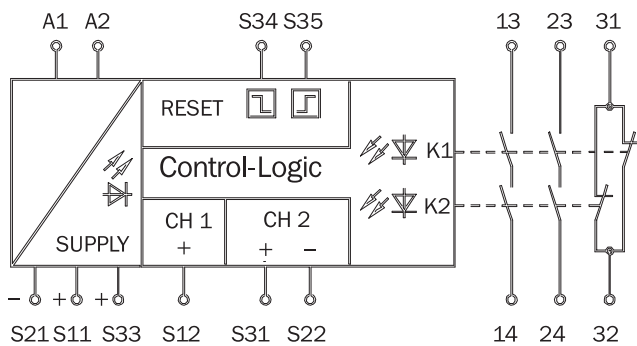
ECLASS 5.0	27371990
ECLASS 5.1.4	27371990
ECLASS 6.0	27371819
ECLASS 6.2	27371819
ECLASS 7.0	27371819
ECLASS 8.0	27371819
ECLASS 8.1	27371819
ECLASS 9.0	27371819
ECLASS 10.0	27371819
ECLASS 11.0	27371819
ECLASS 12.0	27371819
ETIM 5.0	EC001449
ETIM 6.0	EC001449
ETIM 7.0	EC001449
ETIM 8.0	EC001449
UNSPSC 16.0901	41113704

Dimensional drawing Safety relay



Dimensions in mm (inch)

Connection diagram



SICK AT A GLANCE

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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.

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For us, that is “Sensor Intelligence.”

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