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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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# UE45-3S12D33

## UE45-3S1

SAFETY RELAYS

**SICK**  
Sensor Intelligence.



Illustration may differ



### Ordering information

Type	Part no.
UE45-3S12D33	6024911

Other models and accessories → [www.sick.com/UE45-3S1](http://www.sick.com/UE45-3S1)

### Detailed technical data

#### Safety-related parameters

<b>Safety integrity level</b>	SILCL3 (EN 62061) <sup>1)</sup> SILCL2 (EN 62061) <sup>2)</sup>
<b>Category</b>	Category 4 (EN ISO 13849) <sup>1)</sup> Category 3 (EN ISO 13849) <sup>2)</sup>
<b>Performance level</b>	PL e (EN ISO 13849) <sup>1)</sup> PL d (EN ISO 13849) <sup>2)</sup>
<b>B<sub>10d</sub> parameter</b>	4 x 10 <sup>5</sup> switching cycles (with maximum load)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	3.0 x 10 <sup>-8</sup> (EN ISO 13849) <sup>1)</sup> 2.0 x 10 <sup>-8</sup> (EN ISO 13849) <sup>2)</sup>
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)
<b>Stop category</b>	0 (EN 60204-1) <sup>1)</sup> 1 (EN 60204-1) <sup>2)</sup>

<sup>1)</sup> For contacts 13/14, 23/24.

<sup>2)</sup> For time contacts 37/38.

#### Interfaces

<b>Connection type</b>	Fixed screw terminals
<b>Number of enable current (N/O) contacts</b>	2, category 4

#### Electrical data

##### Operating data

<b>Voltage supply</b>	A1, A2
Output circuit > 25 V AC / 60 V DC	PELV
Output circuit ≤ 25 V AC / 60 V DC	PELV or SELV
<b>Supply voltage V<sub>S</sub></b>	A1, A2

<sup>1)</sup> In DC operation, within the limits of V<sub>S</sub>.

	24 V DC (20.4 V DC ... 26.4 V DC)
<b>Residual ripple</b>	( $\leq 2.4 V_{pp}$ ) <sup>1)</sup>
<b>Power consumption</b>	2.6 W (DC)
<b>Overvoltage category</b>	II
<b>Rated insulation voltage <math>U_i</math></b>	300 V AC
<b>Rated impulse withstand voltage <math>U_{imp}</math></b>	4 kV
<b>Test voltage</b>	2 kV (50 Hz) (EN 60439-1)

<sup>1)</sup> In DC operation, within the limits of  $V_S$ .

Control voltage: S11/S33, S21

<b>Control voltage</b>	22 V DC
<b>Short-circuit current</b>	$\leq 2.2$ A, between S 11 and A 2
<b>Short-circuit protection</b>	PTC resistor

Input circuits: S12, S31/S22

<b>Reset time</b>	Manual	( $\leq 30$ ms)
	Automatic	( $\leq 600$ ms)
<b>Activation time of reset button</b>		$\leq 30$ ms $\leq 600$ ms
<b>Synchronous time monitoring</b>		$\leq 500$ ms
<b>Cable resistance</b>		$\leq 85 \Omega$

Electrical output circuits: 13/14, 23/24, 37/38

<b>Response time</b>	25 ms <sup>1)</sup>	
<b>Off-delay time</b>	0.15 s ... 3 s	
<b>Number of enable current (N/O) contacts</b>	2, category 4	
<b>Number of off-delayed N/O contacts</b>	1, category 3	
<b>Number of on-delayed N/O contacts</b>	Category 3	
<b>Contact type</b>	Positively driven	
<b>Contact material</b>	Silver alloy, gold flashed	
<b>Switching voltage</b>		
	Enable current contact	10 V AC ... 230 V AC 10 V DC ... 300 V DC
<b>Current-carrying capacity per OSSD</b>		
	Enable current contact	10 mA ... 6 A
	Total current	$\leq 12$ A
<b>Usage category</b>	AC-15/DC-13 (EN 60947-5-1)	
<b>Rated operating current (voltage)</b>	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	
<b>Switching frequency</b>	$\leq 3600$ /h	
<b>Mechanical life (relay contacts)</b>	$5 \times 10^6$ switching cycles	
<b>Electrical life (relay contacts)</b>	$2 \times 10^6$ switching cycles	

<sup>1)</sup> K1/K2.

## Mechanical data

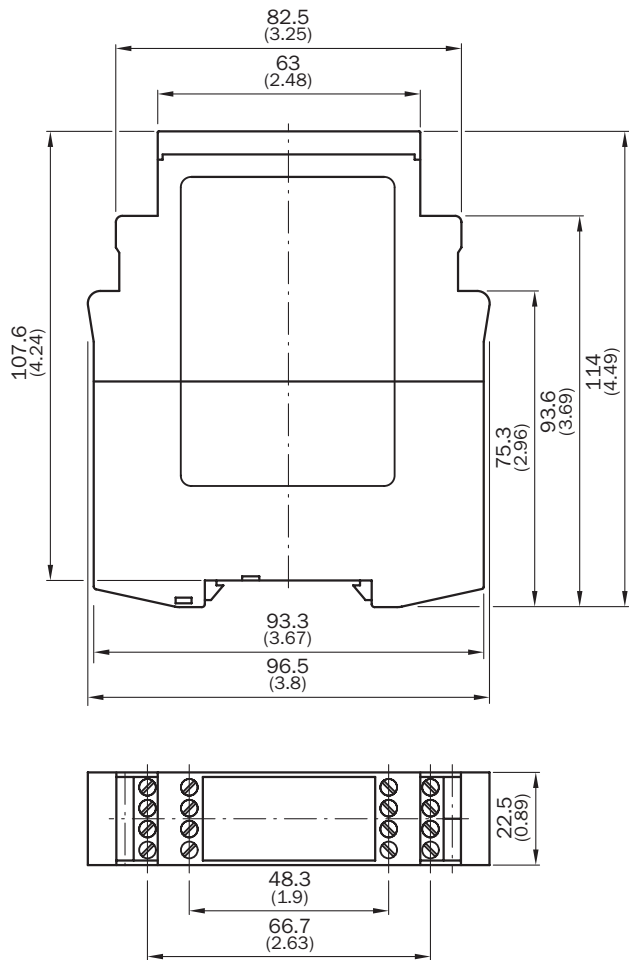
<b>Dimensions (W x H x D)</b>	22.5 mm x 114 mm x 96.5 mm
<b>Weight</b>	0.2 kg

## Classifications

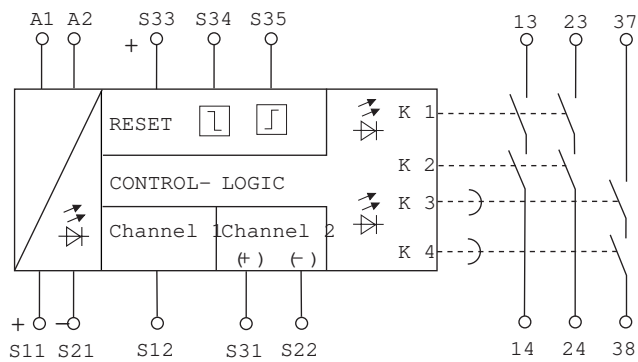
<b>ECl@ss 5.0</b>	27371990
<b>ECl@ss 5.1.4</b>	27371990
<b>ECl@ss 6.0</b>	27371819
<b>ECl@ss 6.2</b>	27371819
<b>ECl@ss 7.0</b>	27371819
<b>ECl@ss 8.0</b>	27371819
<b>ECl@ss 8.1</b>	27371819
<b>ECl@ss 9.0</b>	27371819
<b>ETIM 5.0</b>	EC001449
<b>ETIM 6.0</b>	EC001449
<b>UNSPSC 16.0901</b>	41113704

Dimensional drawing (Dimensions in mm (inch))

Safety relay



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.”

## WORLDWIDE PRESENCE:

Contacts and other locations [www.sick.com](http://www.sick.com)