



# RLY3-EMSS100

ReLy

SAFETY RELAYS

**SICK**  
Sensor Intelligence.



Illustration may differ



## Ordering information

Type	Part no.
RLY3-EMSS100	1085345

Other models and accessories → [www.sick.com/ReLy](http://www.sick.com/ReLy)

## Detailed technical data

### Features

<b>Applications</b>	Evaluation unit
<b>Compatible sensor types</b>	Safety sensors with potential-free outputs

### Safety-related parameters

<b>Safety integrity level</b>	SIL 3 (IEC 61508)
<b>Category</b>	Category 4 (ISO 13849-1)
<b>Performance level</b>	PL e (ISO 13849-1)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	$1.0 \times 10^{-9}$
<b>T<sub>M</sub> (mission time)</b>	20 years (ISO 13849-1)
<b>Stop category</b>	0 (IEC 60204-1)

### Functions

<b>Sensor monitoring</b>	Discrepancy monitoring Cross-circuit detection
<b>Restart interlock</b>	✓
<b>Reset</b>	Automatic Manual
<b>External device monitoring (EDM)</b>	✓

### Interfaces

<b>Connection type</b>	Front connector with spring terminals
<b>Inputs</b>	2 safety inputs 1 input for reset pushbutton or external device monitoring (EDM)
<b>Outputs</b>	2 enabling current paths (safe) 2 application diagnostic outputs (not safe) 3 test pulse outputs (not safe)
<b>Display elements</b>	LEDs
<b>Configuration method</b>	Hard wired

## Electronics

<b>Voltage supply</b>	PELV or SELV
<b>Supply voltage <math>V_s</math></b>	24 V DC (16.8 V ... 30 V)
<b>Residual ripple</b>	$\leq 2.4$ V
<b>Power consumption</b>	$\leq 2.5$ W (DC)
<b>Safety inputs</b>	
Number	2
Input voltage HIGH	24 V DC (11 V ... 30 V)
Input voltage LOW	0 V DC (-3 V ... 5 V)
Input current	4 mA ... 6 mA
Activation time tolerance between the two start buttons	$\leq 3$ s
<b>Reset pushbutton or external device monitoring (EDM) input</b>	
Number	1
Input voltage HIGH	24 V DC (11 V ... 30 V)
Input voltage LOW	0 V DC (-3 V ... 5 V)
Input current	4 mA ... 6 mA
<b>Enabling current paths</b>	
Response time (opening of enabling current paths)	10 ms
Number	2
Type of output	N/O contacts, positively guided
Contact material	Silver alloy, gold flashed
Switching voltage	10 V AC ... 230 V AC 10 V DC ... 230 V DC
Switching current	10 mA ... 6 A
Total current	12 A
Mechanical life	$1 \times 10^7$ switching cycles
Overvoltage category	III (EN 60664-1)
Rated impulse withstand voltage $U_{imp}$	6 kV (EN 60664-1)
<b>Application diagnostic outputs</b>	
Number	2
Type of output	Push-pull semiconductor output, short-circuit protected
Output voltage HIGH	$\geq V_s - 3$ V
Output voltage LOW	$\leq 3$ V
Input current (NPN)	$\leq 15$ mA
Output current (PNP)	$\leq 120$ mA
<b>Test pulse outputs</b>	
Number	3
Type of output	PNP semiconductors, short-circuit protected
Output voltage	$\geq V_s - 3$ V
Test pulse width	2 ms
Test pulse interval	40 ms

## Mechanics

<b>Dimensions (W x H x D)</b>	18 mm x 124.6 mm x 85.5 mm
<b>Weight</b>	130 g

## Ambient data

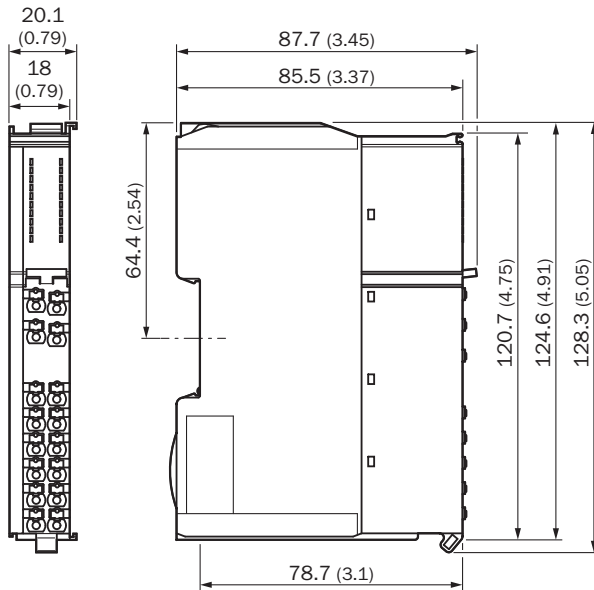
<b>Enclosure rating</b>	IP20 (IEC 60529)
<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-25 °C ... +70 °C
<b>Air humidity</b>	≤ 95 %, Non-condensing
<b>Interference emission</b>	According to IEC 61000-6-4
<b>Interference resistance</b>	According to IEC 61326-3-1 According to IEC 61000-6-2 According to IEC 60947-5-1

## Classifications

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

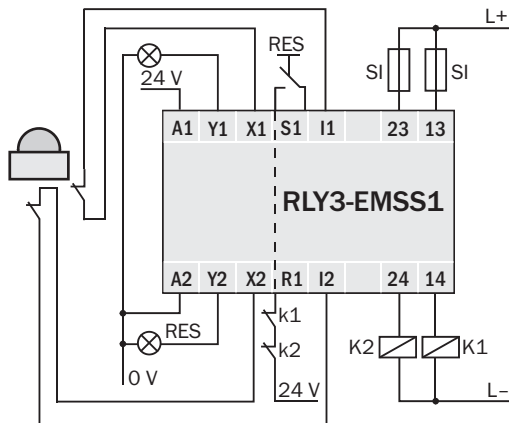
## Dimensional drawing (Dimensions in mm (inch))

EMSS1, HAND1, OSSD1, OSSD2, TIME1

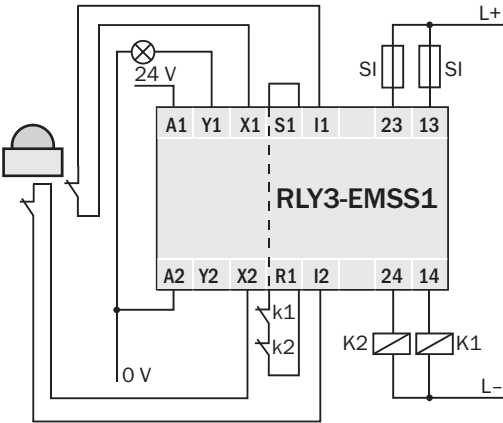


## Connection diagram

RLY3-EMSS1 at dual-channel emergency switching off with manual reset and external device monitoring



RLY3-EMSS1 at dual-channel emergency switching off with automated reset and external device monitoring



## 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)