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DATA SHEET

RLY3-EMSS100

ReLy
Safety relays

SICK Sensor Intelligence

Illustration may differ

SAFETY RELAYS

RLY3-EMSS100

ORDERING INFORMATION

Type	part no.
RLY3-EMSS100	1085345

Further device versions and accessories at www.sick.com/ReLy

DETAILED TECHNICAL DATA

FEATURES

Applications	Evaluation unit
Compatible sensor types	Safety sensors with potential-free outputs

SAFETY-RELATED PARAMETERS

Safety integrity level	SIL 3 (IEC 61508)
Category	Category 4 (ISO 13849-1)
Performance level	PL e (ISO 13849-1)
PFH_D (mean probability of a dangerous failure per hour)	1.0×10^{-9}
T_M (mission time)	20 years (ISO 13849-1)
Stop category	0 (IEC 60204-1)

FUNCTIONS

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

INTERFACES

Connection type	Front connector with spring terminals
Inputs	2 safety inputs 1 input for reset pushbutton or external device monitoring (EDM)
Outputs	2 enabling current paths (safe) 2 application diagnostic outputs (not safe)

	3 test pulse outputs (not safe)
Display elements	LEDs
Configuration method	Hard wired

ELECTRONICS

Voltage supply	PELV or SELV
Supply voltage V_S	24 V DC (16.8 V ... 30 V)
Residual ripple	≤ 2.4 V
Power consumption	≤ 2.5 W (DC)
Safety inputs	
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	≤ 3 s
Reset pushbutton or external device monitoring (EDM) input	
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
Enabling current paths	
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 x 10^7 switching cycles
Overvoltage category	III (EN 60664-1)
Rated impulse withstand voltage U_{imp}	6 kV (EN 60664-1)
Application diagnostic outputs	
Number	2
Type of output	Push-pull semiconductor output, short-circuit protected
Output voltage HIGH	≥ V_s – 3 V
Output voltage LOW	≤ 3 V
Input current (NPN)	≤ 15 mA
Output current (PNP)	≤ 120 mA
Test pulse outputs	
Number	3
Type of output	PNP semiconductors, short-circuit protected
Output voltage	≥ V_s – 3 V
Test pulse width	2 ms
Test pulse interval	40 ms

MECHANICS

Dimensions (W x H x D)	18 mm x 124.6 mm x 85.5 mm
Weight	130 g

AMBIENT DATA

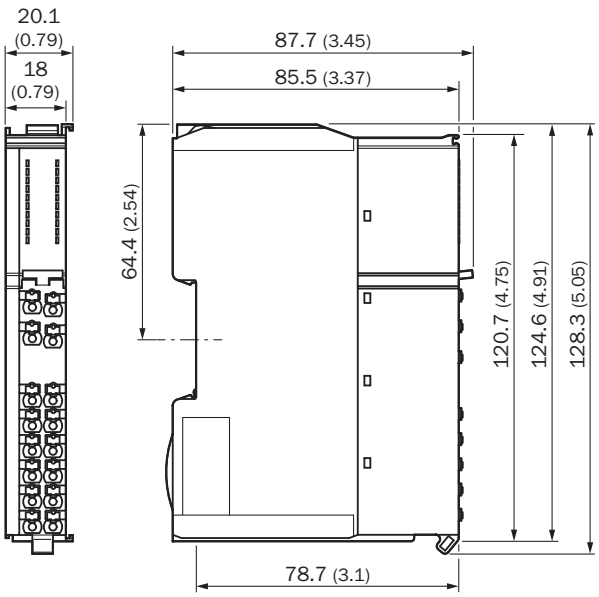
Enclosure rating	IP20 (IEC 60529)
Ambient operating temperature	–25 °C ... +55 °C
Storage temperature	–25 °C ... +70 °C

Air humidity	≤ 95 %, Non-condensing
Interference emission	According to IEC 61000-6-4
Interference resistance	According to IEC 61326-3-1 According to IEC 61000-6-2 According to IEC 60947-5-1

CERTIFICATES

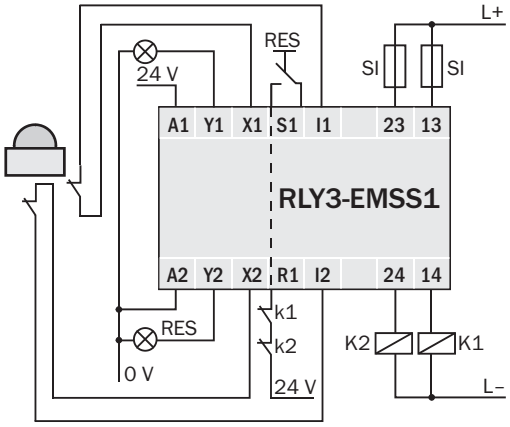
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
CCC certificate	✓
UK-Type-Examination approval	✓
cULus certificate	✓
EAC certificate / DoC	✓
cTUVus certificate	✓
S Mark certificate	✓
EC-Type-Examination approval	✓
EC-Type-Examination approval (Machinery Directive)	✓
EC-Type-Examination approval (Machinery Regulation)	✓
Third party certificate	✓

DIMENSIONAL DRAWING EMSS1, HAND1, OSSD1, OSSD2, TIME1

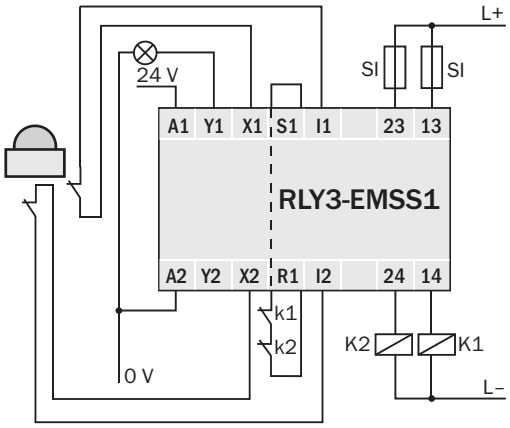


Dimensions in mm (inch)

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



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/1085345

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SICK AT A GLANCE

SICK is a leading global technology company for intelligent sensors and integrated solutions in industrial automation. Our technologies set benchmarks, making your industrial processes more efficient, safer and more sustainable – both in logistics and manufacturing operations.

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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