



# ReLy

RELY ON SAFETY RELAYS FROM SICK

Safety relays

**SICK**  
Sensor Intelligence.

## ReLy PAYS OFF FOR YOU IN MANY WAYS

Rely on safety relays from the ReLy product family and benefit from a user-friendly housing and state-of-the-art technologies during commissioning, operation and maintenance processes.



### INCREASED PRODUCTIVITY

#### Fast response times for efficient operation

Thanks to the fast response times, safety distances can be reduced. PSDI times are becoming shorter and machines more compact.

#### Simple commissioning for a quick start of production

With only one wiring diagram per module, you will immediately find the right terminal. The wiring is easily accessible on the front face of the module.

#### Fast troubleshooting for reduced downtime

Diagnostic LEDs enable fast troubleshooting. Thanks to the user-friendly housing, modules can be exchanged in seconds.



Short response times ensure short PSDI times.



The front connector ensures simple wiring without the need for tools, and can be inserted with a click.



**TIME AND COST SAVINGS**



**GUARANTEED SAFETY**

**Reduced commissioning and maintenance work**

ReLy features a user-friendly housing. Expensive commissioning and maintenance work is drastically reduced.

**Narrow modules for space saving in the control cabinet**

With a module width of 18 mm, you save 20 % of the space required in the control cabinet. Costs are reduced and handling is made easier.

**Performance level e for maximum security**

All ReLy modules can be used for protection of machines up to the highest required safety level.



The one-click mounting rail release guarantees a quick module exchange.

Enormous space saving (20 % compared to UExx) in the control cabinet due to a housing width of only 18 mm.

# RELY ON SAFETY RELAYS FROM SICK



## Product description

The safety relays from the ReLy product family monitor safety functions and safety sensors up to performance level e. The ReLy portfolio is clear and concise. Each ReLy module has everything a modern safety relay needs: Up to 4 contact paths for the safe switch-off of machines, quick response times for

short safety distances, plug-in terminals for short maintenance times, a slim housing for more space in the control cabinet and extensive diagnosis options for quick and easy troubleshooting. The sensor type to be connected alone can determine which product is the right choice.

## At a glance

- Safety relays for monitoring ESPE and safety switches
- Up to PL e (EN ISO 13849), SIL3 (IEC 61508)
- Up to 4 safety outputs and short response times
- Slim, user-friendly housing
- Plug-in terminals
- Diagnostics via status LEDs and application diagnostic outputs

## Your benefits

- Short safety distances owing to fast response times for compact machines and a high level of productivity
- Easy commissioning and quick module exchange thanks to plug-in terminals and one-click mounting rail release
- More space available in the control cabinet thanks to the slim housing
- Intuitive troubleshooting due to a wide range of diagnostics interfaces
- Easy wiring and installation – only one connection diagram required per module



## Additional information

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→ [www.sick.com/ReLy](http://www.sick.com/ReLy)

For more information, simply enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples, and much more.



## Detailed technical data

## Features

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Applications</b>								
Output expansion module for OSSDs	✓		-					
Evaluation unit	-		✓					
Evaluation unit for stop category 1 applications	-				✓	-		
<b>Compact sensor types</b>								
Safety sensors with OSSDs	✓					-		
Safety sensors with volt-free outputs	-				✓			-
Two-hand controls Type III C, in accordance with EN 574	-							✓

## Safety-related parameters

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Safety integrity level</b>	SIL3 (IEC 61508) SILCL3 (IEC 62061)							
<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 x 10 <sup>-9</sup>							
<b>T<sub>M</sub> (mission time)</b>	20 years (ISO 13849-1)							
<b>Stop category (EC 60204-1)</b>	0			0 <sup>1)</sup> 1 <sup>2)</sup>		0		

<sup>1)</sup> For enabling current paths (13, 14, 23, 24).

<sup>2)</sup> For delayed enable current paths (37, 38).

## Functions

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Sensor monitoring</b>								
Discrepancy monitoring	-				✓			-
Sequence monitoring	-		✓			-		
Cross-circuit detection	-				✓			-
<b>Restart interlock</b>	-		✓					-
<b>Reset</b>	-		Automatic Manual					-
<b>External device monitoring (EDM)</b>	-		✓					
<b>Path for external device monitoring (EDM)</b>	✓		-					

## Interfaces

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Connection type</b>	Plug-in spring terminals							
<b>Inputs</b>								
Safety inputs	2							4
Input for external device monitoring (EDM)	-							1
Input for reset pushbutton or external device monitoring (EDM)	-		1					-

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Outputs</b>								
Enabling current paths (safe)	2	4	2	3	2		3	2
Enabling current path, release-delayed, for stop category 1 applications (safe)	-				1	-		
Feedback current path (for use as external device monitoring, not safe)	1		-					
Signaling current path (not safe)	-	1	-					
Application diagnostic outputs (not safe)	-		2					1
Test pulse output (not safe)	-		1		3			-
<b>Display elements</b>	LEDs							
<b>Configuration method</b>								
Hard wired	-		✓					
DIP switches	-				✓	-		

Electrical data

Operating data

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Voltage supply</b>	Passive (no active voltage supply)		PELV or SELV					
<b>Supply voltage <math>V_s</math></b>	-		24 V DC (16.8 V ... 30 V)					
<b>Residual ripple</b>	-		≤ 2.4 V					
<b>Power consumption</b>	-		≤ 2.5 W (DC)					
<b>Power consumption (input circuits)</b>	≤ 1.5 W (DC)	≤ 2.5 W (DC)	-					

Safety inputs

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Number</b>	2							4
<b>Input voltage</b>								
HIGH	24 V DC (15 V ... 30 V)		24 V DC (11 V ... 30 V)					
LOW	0 V DC (-3 V ... 5 V)							
<b>Input current</b>	≤ 50 mA	≤ 60 mA	4 mA ... 6 mA					
<b>Test pulse width</b>	≤ 1 ms					-		
<b>Test pulse rate</b>	≤ 10 Hz					-		
<b>Activation time tolerance between the two start buttons</b>	-				≤ 3 s			-
<b>Synchronization time (between the actuators)</b>	-							≤ 500 ms

Input reset pushbutton or external device monitoring (EDM)

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Number</b>	-		1					-
<b>Input voltage</b>								
HIGH	-		24 V DC (11 V ... 30 V)					
LOW	-		0 V DC (-3 V ... 5 V)					
<b>Input current</b>	-		4 mA ... 6 mA					

## Input external device monitoring (EDM)

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Number	-							1
Input voltage	HIGH	-						24 V DC (11 V ... 30 V)
	LOW	-						0 V DC (-3 V ... 5 V)
Input current	-							4 mA ... 6 mA

## Enable current paths

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Response time	12 ms		10 ms	12 ms		10 ms	12 ms	10 ms
Number	2	4	2	3	2		3	2
Type of output	Potential-free NO 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				12 A <sup>1)</sup>	12 A		
Mechanical life (switching operations)	10 <sup>7</sup>							
Overvoltage category	III (EN 60664-1)							
Rated impulse withstand voltage U <sub>imp</sub>	6 kV (EN 60664-1)							

<sup>1)</sup> Total current of all 3 enabling current paths.

## Enable current paths, delayed

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Response time	-				12 ms	-		
Number	-				1	-		
Type of output	-				Poten- tial-free NO contacts, positively guided	-		
Contact material	-				Silver alloy, gold flashed	-		
Switching voltage	-				10 V DC ... 30 V DC	-		
Switching current	-				2 mA	-		
Total current	-				12 A <sup>1)</sup>	-		
Mechanical life (switching operations)	-				10 <sup>7</sup>	-		

<sup>1)</sup> Total current of all 3 enabling current paths.

Feedback current paths

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Number	1		-					
Type of output	Positively guided N/C contacts		-					
Contact material	Silver alloy, gold flashed		-					
Switching voltage	15 V AC ... 30 V AC 15 V DC ... 30 V DC	10 V AC ... 30 V AC 10 V DC ... 30 V DC	-					
Switching current	3 mA ... 100 mA		-					
Mechanical life (switching operations)	10 <sup>7</sup>		-					

Signaling current paths

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Number	-	1	-					
Type of output	-	Positively guided N/C contacts	-					
Contact material	-	Silver alloy, gold flashed	-					
Switching voltage	-	10 V AC ... 30 V AC 10 V DC ... 30 V DC	-					
Switching current	-	10 mA ... 100 mA	-					
Mechanical life (switching operations)	-	10 <sup>7</sup>	-					

Application diagnostic outputs

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1	
Number	-		2						1
Type of output	-		Push-pull semiconductor output, short-circuit protected						
Output voltage									
	HIGH	-	≥ V <sub>s</sub> - 3 V						
	LOW	-	≤ 3 V						
Input current (NPN)	-		≤ 15 mA						
Output current (PNP)	-		≤ 120 mA						

Test pulse outputs

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
Number	-		1			3		-
Type of output	-		PNP semiconductors, short-circuit protected					
Output voltage	-		≥ V <sub>s</sub> - 3 V					
Test pulse width	-		2 ms					
Test pulse interval	-		40 ms					



## Mechanical data

	OSSD1	OSSD4	OSSD2	OSSD3	TIME1	EMSS1	EMSS3	HAND1
<b>Dimensions (W x H x D)</b>	See dimensional drawings							
Housing width	18 mm	28 mm	18 mm					
<b>Weight</b>	130 g	180 g	130 g	150 g	160 g	130 g	150 g	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>	10 % ... 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

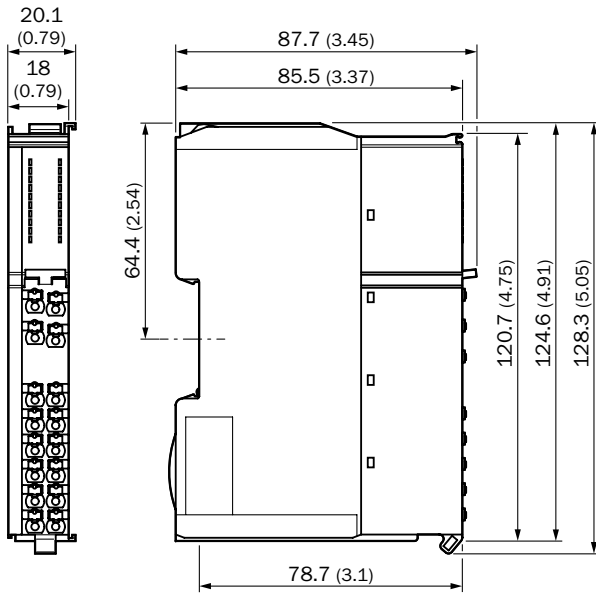
## Ordering information

Applications	Compact sensor types	Enable current paths	Housing width	Type	Part no.
Output expansion module for OSSDs	Safety sensors with OSSDs	2	18 mm	RLY3-OSSD100	1085343
		4	28 mm	RLY3-OSSD400	1099971
Evaluation unit	Safety sensors with OSSDs	2	18 mm	RLY3-OSSD200	1085344
		3	18 mm	RLY3-OSSD300	1099969
Evaluation unit for stop category 1 applications	Safety sensors with OSSDs, safety sensors with volt-free outputs	2 + 1 <sup>1)</sup>	18 mm	RLY3-TIME100	1100688
Evaluation unit	Safety sensors with volt-free outputs	2	18 mm	RLY3-EMSS100	1085345
		3	18 mm	RLY3-EMSS300	1099973
	Two-hand controls Type III C, in accordance with EN 574	2	18 mm	RLY3-HAND100	1085346

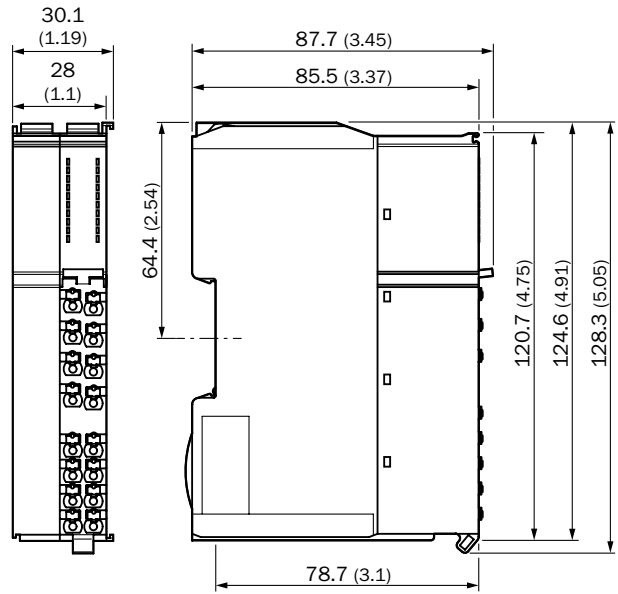
<sup>1)</sup> 2 Enabling current paths and 1 enabling current path, release-delayed, for stop category 1 applications

Dimensional drawings (Dimensions in mm (inch))

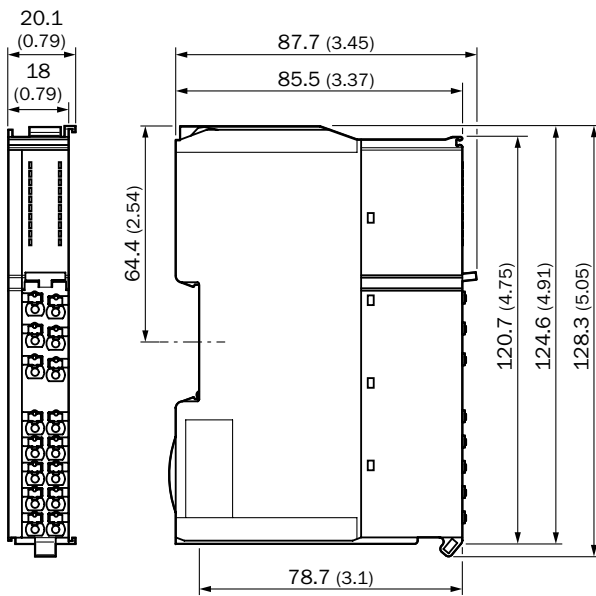
EMSS1, HAND1, OSSD1, OSSD2, TIME1



OSSD4

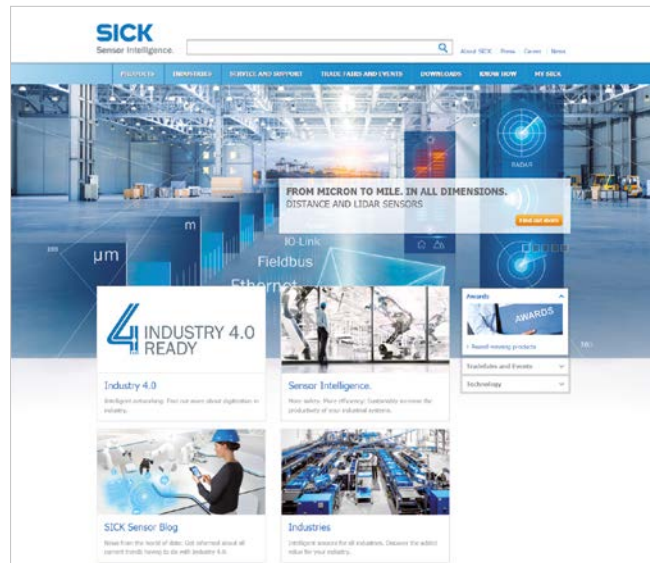


EMSS3, OSSD3



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 Safe and professional
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- 
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- 
**Upgrade and retrofits**  
 Easy, safe, and economical
- 
**Training and education**  
 Practical, focused, and professional

## SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 9,700 employees and over 50 subsidiaries and equity investments as well as numerous agencies worldwide, SICK is always close to its customers. 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.

SICK has extensive experience in various industries and understands their processes and requirements. With intelligent sensors, SICK delivers exactly what the 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 SICK a reliable supplier and development partner.

Comprehensive services round out the offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

**That is “Sensor Intelligence.”**

### **Worldwide presence:**

Australia, Austria, Belgium, Brazil, Canada, Chile, China, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Hong Kong, India, Israel, Italy, Japan, Malaysia, Mexico, Netherlands, New Zealand, Norway, Poland, Romania, Russia, Singapore, Slovakia, Slovenia, South Africa, South Korea, Spain, Sweden, Switzerland, Taiwan, Thailand, Turkey, United Arab Emirates, USA, Vietnam.

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