



# FLN-EMSS1100108

Flexi Loop

SAFE SERIES CONNECTION

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
FLN-EMSS1100108	1061712

Other models and accessories → [www.sick.com/Flexi\\_Loop](http://www.sick.com/Flexi_Loop)



### Detailed technical data

#### Safety-related parameters

<b>Safety integrity level</b>	SIL 3 (IEC 61508)
<b>Category</b>	Category 4 (EN ISO 13849)
<b>Performance level</b>	PL e (EN ISO 13849)
<b>PFH<sub>D</sub> (mean probability of a dangerous failure per hour)</b>	0.76 x 10 <sup>-9</sup> (EN ISO 13849)
<b>T<sub>M</sub> (mission time)</b>	20 years (EN ISO 13849)

#### Functions

Diagnostic and monitoring functions	
Cross-circuit	Monitoring via Flexi Loop node
Short-circuit	Monitoring via Flexi Loop node
Discrepancy errors	Monitoring via Flexi Loop node
Sequence errors	Monitoring via Flexi Loop node

#### Interfaces

<b>Connection usage</b>	
Safety device connection	For dual-channel equivalent electro-mechanical safety switch (EMSS), With standard input, with standard output
Flexi Loop input	To connect to a Flexi Loop predecessor node or to connect the Flexi Loop line to the Flexi Soft safety controller.
Flexi Loop output	To connect to a Flexi Loop successor node or to terminate the Flexi Loop line with the Flexi Loop terminator.
<b>Connection type</b>	
Safety device connection	Female connector M12, 8-pin
Flexi Loop input	Male connector M12, 5-pin
Flexi Loop output	Female connector M12, 5-pin
<b>Number of non-safe inputs</b>	1
<b>Number of non-safe outputs</b>	1
<b>Power supply output for external devices</b>	✓

## Electrical data - Operating data

<b>Protection class</b>	III (EN 61140)
<b>Type of supply voltage</b>	PELV or SELV
<b>Supply voltage <math>V_s</math></b>	24 V DC (16.8 V DC ... 30 V DC)
<b>Power consumption</b>	55 mA

## Electrical data - EMSS interface

<b>Test pulse interval</b>	40 ms
<b>Test pulse width</b>	12 ms
<b>Test pulse current via the switch contacts</b>	3 mA ... 6.2 mA

## Electrical data - Non-safe inputs

<b>Switching voltage</b>	HIGH	13 V DC ... 30 V DC
	LOW	0 V DC ... 5 V DC
<b>Input current</b>	≤ 6.2 mA	

## Electrical data - Non-safe outputs

<b>Type of output</b>	Highside driver, short-circuit protected
<b>Output current</b>	≤ 500 mA

## Electrical data - Power supply output for external devices

<b>Supply voltage</b>	24 V DC (16.8 V DC ... 30 V DC)
<b>Output current</b>	≤ 2 A

## Mechanical data

<b>Dimensions (W x H x D)</b>	68.15 mm x 48 mm x 18 mm
<b>Weight</b>	28 g (± 5 %)

## Ambient data

<b>Enclosure rating</b>	IP65 (EN 60529) IP67 (EN 60529)
<b>Ambient operating temperature</b>	-25 °C ... +55 °C
<b>Storage temperature</b>	-25 °C ... +70 °C

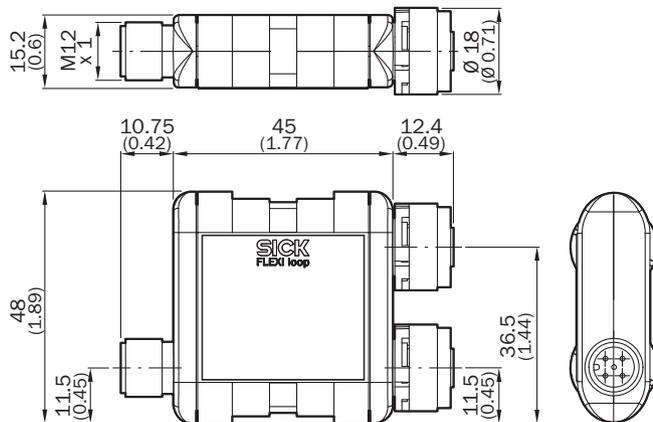
## Certificates

<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>China RoHS</b>	✓
<b>UK-Type-Examination approval</b>	✓
<b>cULus certificate</b>	✓
<b>cTUVus certificate</b>	✓
<b>EC-Type-Examination approval</b>	✓
<b>Information according to Art. 3 of Data Act (Regulation EU 2023/2854)</b>	✓

### 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 OSSD, EMSS



Dimensions in mm (inch)

### PIN assignment



The FL\_IN pin assignment is only relevant for the first loop node in a safe series connection when connected to Flexi Soft. Additional Flexi Loop nodes are connected to FL\_OUT using standardized cables with M12 plug connectors.

Connection	Pin	Signal	Description	Color-coded connecting cable
FL_IN	1	VDC	24 V supply voltage	Brown
	2	DATA_OUT	Output to Flexi Soft input In +1	White
	3	GND	GND supply voltage	Blue
	4	SAFE_OUT	Safe cut-off signal, output to Flexi Soft input In	Black
	5	DATA_IN	Input from Flexi Soft output Xn	Gray
EMSS	1	VDC	24 V supply voltage	White
	2	AUX_IN	Non-safe input	Brown
	3	EMSS1_A	Switching contact 1, connection A	Green
	4	EMSS1_B	Switching contact 1, connection B	Yellow
	5	AUX_OUT	Non-safe output	Gray
	6	GND	GND supply voltage	Pink
	7	EMSS2_A	Switching contact 2, connection A	Blue
	8	EMSS2_B	Switching contact 2, connection B	Red

The colors listed apply when using pre-assembled cables (no guarantee).

### Recommended accessories

Other models and accessories → [www.sick.com/Flexi\\_Loop](http://www.sick.com/Flexi_Loop)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Flexi Loop fixing clip</li> <li><b>Dimensions (W x H x L):</b> 15 mm x 32 mm x 21 mm</li> <li><b>Packing unit:</b> 1 piece</li> <li><b>Suitable for:</b> Flexi Loop</li> </ul>	C-Fix bracket	2068830

## 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)