



DATA SHEET

FLX3-CPUN100

Flexi Net
Safety controllers

SICK

Sensor Intelligence



SAFETY CONTROLLERS

FLX3-CPUN100

ORDERING INFORMATION

Type	part no.
FLX3-CPUN100	1085359

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



DETAILED TECHNICAL DATA

FEATURES

Module	Main module
Description	The main module is the central process unit of the modular safety controller. All incoming signals are monitored and logically processed in the main module. The outputs are switched based on this processing.
Number of connectable A/B incremental encoders (non safety)	2 ¹⁾
Safety inputs	20
Safety outputs	4
Test outputs	8 ²⁾
Fieldbus, industrial network	Ethernet, Modbus® TCP, SLMP
Configuration software	Safety Designer
Configuration interface	Micro USB Ethernet TCP/IP
Items supplied	Main module SmartPlug 2 front connectors Housing end cap Safety instruction Operating instructions for download Safety Designer configuration software for download

¹⁾ Alternative use of 4 safety inputs. Allows 2 encoders to be connected.

²⁾ The test outputs can also be used to switch non-safety elements (e.g. lamps).

SAFETY-RELATED PARAMETERS

Safety integrity level	SIL 3 (IEC 61508, IEC 62061)
Category	Category 4 (ISO 13849)
Performance level	PL e (ISO 13849)

³⁾ Calculated value when using dual-channel safety inputs and safety outputs with test pulse. Maximum 9×10^{-9} with single-channel safety inputs and safety outputs without test pulse. For details, see the operating instructions.

PFH _D (mean probability of a dangerous failure per hour)	4×10^{-9} ¹⁾
T _M (mission time)	20 years (ISO 13849-1)

¹⁾ Calculated value when using dual-channel safety inputs and safety outputs with test pulse. Maximum 9×10^{-9} with single-channel safety inputs and safety outputs without test pulse. For details, see the operating instructions.

FUNCTIONS

Programmable logic	✓
Monitoring of the connected safety devices	✓
Switching of the connected safety devices	✓
Fast shut-off	✓
Testing of the connected safety devices and the wiring (short-circuit detection)	✓
Use of the test outputs as non-safe outputs	✓
Safe series connection with Flexi Loop	✓
Data exchange via Modbus® TCP and SLMP	✓
Configuration of the safety controller via TCP/IP	✓

INTERFACES

Overview	Status LEDs 2 front connectors with 34 spring terminals (20I, 4Q, 8X, A1/A2) USB connection in the SmartPlug (Micro USB) RJ45 socket (Ethernet, Modbus® TCP, SLMP) Backplane bus (proprietary interface on the side of the module)
Front connector	Left front connector with SmartPlug and 16 spring terminals Right front connector with 18 spring terminals
Number of connectable A/B incremental encoders (non safety)	2 ¹⁾
Safety inputs	20
Safety outputs	4
Test outputs	8 ²⁾
Fieldbus, industrial network	Ethernet, Modbus® TCP, SLMP
Connection type	1 x female connector, RJ45
Note	Ethernet interface as a TCP/IP configuration interface and data exchange via Modbus® TCP and SLMP
Network cable requirements	Shielded, twisted Ethernet cable type 100Base-TX (Cat 5 STP or higher). Maximum length 100 m according to EN 50173. Use of wire pairs 1/2 and 3/6.
Display elements	LEDs

¹⁾ Alternative use of 4 safety inputs. Allows 2 encoders to be connected.

²⁾ The test outputs can also be used to switch non-safety elements (e.g. lamps).

ELECTRONICS

Protection class	III (EN 61140)
Interference resistance	EN 61000-6-2
Interference emission	EN 61000-6-4
Voltage supply	The voltage supply of the main module is maintained directly via the terminals on the front connector
Supply voltage V _s	24 V DC (16.8 V ... 30 V) ¹⁾
Type of voltage supply	PELV or SELV ²⁾

¹⁾ Voltage supply of the main module and the extension modules connected via the backplane bus.

²⁾ The supply current must be limited externally to max. 8 A – either by the power supply unit used, or by means of a fuse.

Overvoltage category	II (EN 61131-2)
Power consumption at nominal voltage (without outputs)	3 W (DC)
Power loss	≤ 6.3 W
Current consumption at nominal voltage	125 mA

¹⁾ Voltage supply of the main module and the extension modules connected via the backplane bus.

²⁾ The supply current must be limited externally to max. 8 A – either by the power supply unit used, or by means of a fuse.

MECHANICS

Dimensions (W x H x D)	46.2 mm x 124.7 mm x 85.5 mm
Contamination rating	2 (IEC 61010-1)
Control device type	Open device (IEC 61010-2-201)
Weight	282 g (± 5 %)
Mounting	Mounting on a 35 mm × 7.5 mm mounting rail in accordance with IEC 60715

AMBIENT DATA

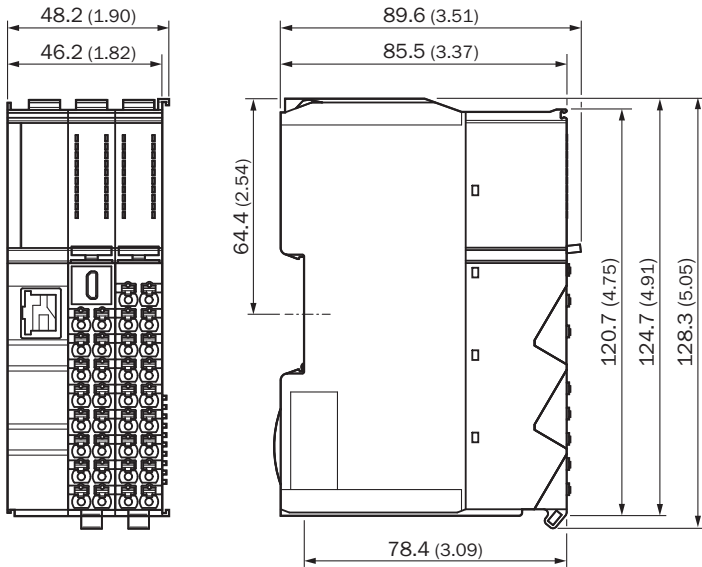
Enclosure rating	IP20 (IEC 60529)
Ambient operating temperature	–25 °C ... +55 °C ¹⁾
Storage temperature	–25 °C ... +70 °C
Air humidity	≤ 95 %, Non-condensing
Vibration resistance	1 g, 5 Hz ... 200 Hz (EN 60068-2-6)
Shock resistance	15 g, 11 ms (EN 60068-2-27)

¹⁾ At altitudes up to 2,000 m above sea level For higher areas of application up to max. 4,000 m above sea level, see the operating instructions.

CERTIFICATES

EU declaration of conformity	✓
ACMA declaration of conformity	✓
China RoHS	✓
cULus certificate	✓
EC-Type-Examination approval	✓
EC-Type-Examination approval (Machinery Directive)	✓
EC-Type-Examination approval (Machinery Regulation)	✓
Third party certificate	✓

DIMENSIONAL DRAWING



Dimensions in mm (inch)

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/1085359



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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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