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PRODUCT INFORMATION



Flexi Compact

SAFETY UNDER CONTROL – COMPACT, EASY AND EFFICIENT

Safety controllers

SICK
Sensor Intelligence.

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FORWARD-LOOKING PRODUCT ARCHITECTURE

Usability optimized

Using the intuitive Safety Designer configuration software, you can plan the entire safety application in just a few minutes. Furthermore, the user-friendly housing with intelligent functions makes handling the device significantly easier.

Efficiency increased

With Flexi Compact, you will benefit from easy configuration and commissioning, efficient machine operation, right through to fast maintenance and diagnostics throughout the entire machine life cycle.

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PUT YOUR TRUST TODAY IN A SAFE FUTURE

In this fast changing world, one thing is crucial – to start thinking today about solutions for the future. The increasing digitalization and advances in technology open up a wide variety of opportunities. At the same time they also present new challenges. Besides the growing demand for flexibility and efficiency, industrial companies need to adapt to the increasing complexity in production. This also changes the requirements on safety solutions.

With SICK at your side, you have a partner who understands your requirements and can offer future-proof solutions. The software programmable Flexi Compact safety controller is characterized by its high degree of user-friendliness, efficient machine operation, and forward-looking technologies. Benefit from safety and productivity in your current safety application and on your path to the industry of tomorrow.



Future-proof guarenteed

With Flexi Compact, you will stay on the safe side even in the future – thanks to forward-looking technologies, a modular platform for highly flexible solutions, and gateways for seamless data availability in your Industry 4.0 application.

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INCREASE THE EFFICIENCY OF YOUR MACHINE LIFE CYCLE

Impressive across the board – Flexi Compact ensures a fast production start, productive processes and increased machine availability, thereby allowing safety and productivity to go hand in hand.

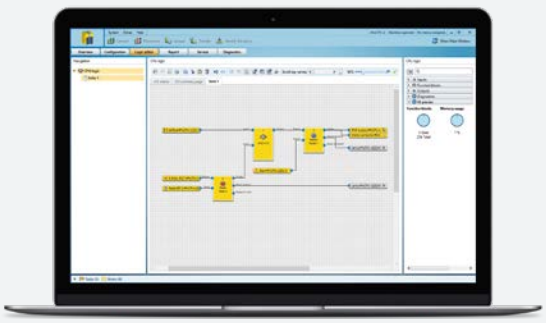
PROJECT PLANNING

Modular hardware and intuitive software for cost-effective engineering

Flexi Compact is modularly expandable and offers you maximum flexibility. You obtain a safety solution that is optimally tailored to your requirements and cost-effective. Project planning is performed using the intuitive Safety Designer configuration software. Thanks to its ease-of-use and integrated verification function and documentation, developing your safety solution is a quick and easy process.



Because every application is different – modularity for high flexibility and adaptability.



Because project planning work is costly – the intuitive Safety Designer software for fast configuration of the application.

COMMISSIONING

Fast production start thanks to easy machine integration

Flexi Compact redefines the usability of safety controllers and guarantees short commissioning times. Intelligent housing functions and smart gateways simplify machine integration thereby ensuring a fast production start. Furthermore, you will save valuable space in the control cabinet thanks to the narrow modules.



Because easy installation saves time – intelligent housing functions for maximum user-friendliness.



Because production cannot wait – smart gateways for fast device setup.

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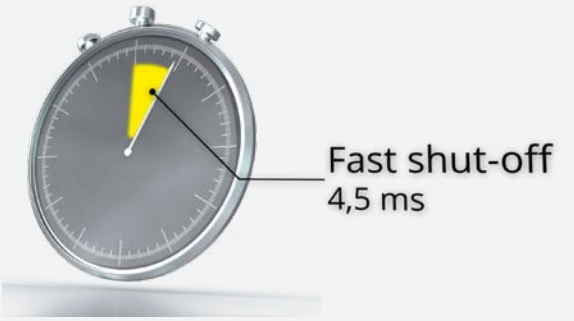
OPERATION

Productivity boost through efficient machine and system operation

The increasing complexity in applications has also led to growing requirements for safe control solutions. Using high-performance technologies such as the Safety-over-EtherCAT® backplane bus, Flexi Compact guarantees the machine and system will operate efficiently at all times. Fast response times also ensure short cycle times and additional productivity gains in highly dynamic processes.



Because the requirements on communication are increasing – Safety-over-EtherCAT® backplane bus for efficient data exchange.



Because productivity is paramount – fast response times for short cycle times.

MAINTENANCE AND DIAGNOSTICS

Comprehensive diagnostic functions for increased machine availability

Flexi Compact gives you the means to implement your Industry 4.0 application. Comprehensive diagnostics data can be read, visualized and evaluated in an application-specific manner via commonly used field-bus protocols. With the right information at the right time in the right place, you can optimize your machine and maintenance processes and thereby increase the availability of your plant.



Because fast troubleshooting reduces downtimes – easy HMI integration for direct on-site analysis.



Because Industry 4.0 offers new possibilities – gateways for communication to the cloud.

Discover the productivity increasing functions of Flexi Compact for yourself:
➜ www.sick.com/Flexi_Compact_videos

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PERFECTLY TAILORED TO YOUR APPLICATION

The path to Industry 4.0 is characterized by continuous change. Thanks to its modular design, the Flexi Compact safety controller will continue to remain perfectly tailored to a wide variety of applications in future. Maximum adaptability for maximum flexibility – in your current safety application and on your path to the industry of tomorrow.



Everything from a single source

Are you looking for a safe and intelligent complete solution for your requirements? SICK is happy to assist you with this. Besides safe control solutions, SICK also offers a comprehensive portfolio of other sensors and services. SICK also has a global network of experts in functional safety who can assist you on-site. For more information and contact details, visit:

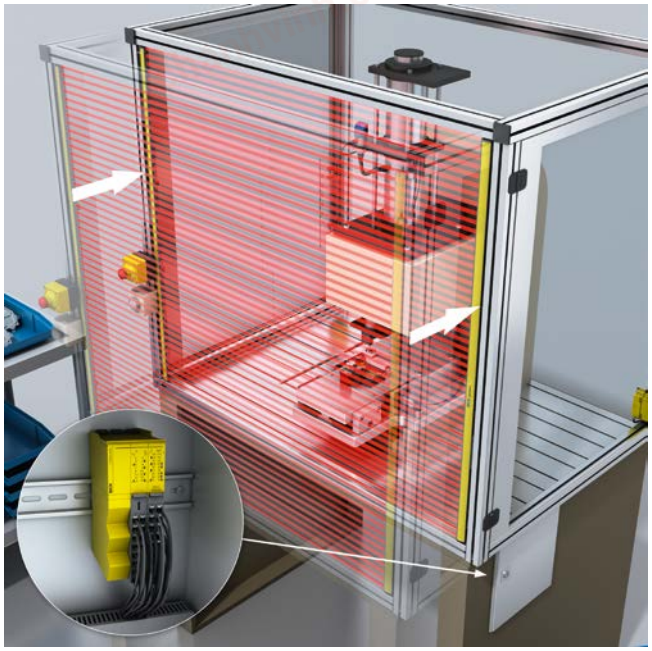
➜ www.sick.com/safe-productivity

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Productivity-boosting solutions for your safety application

Hazardous point protection on compact machines



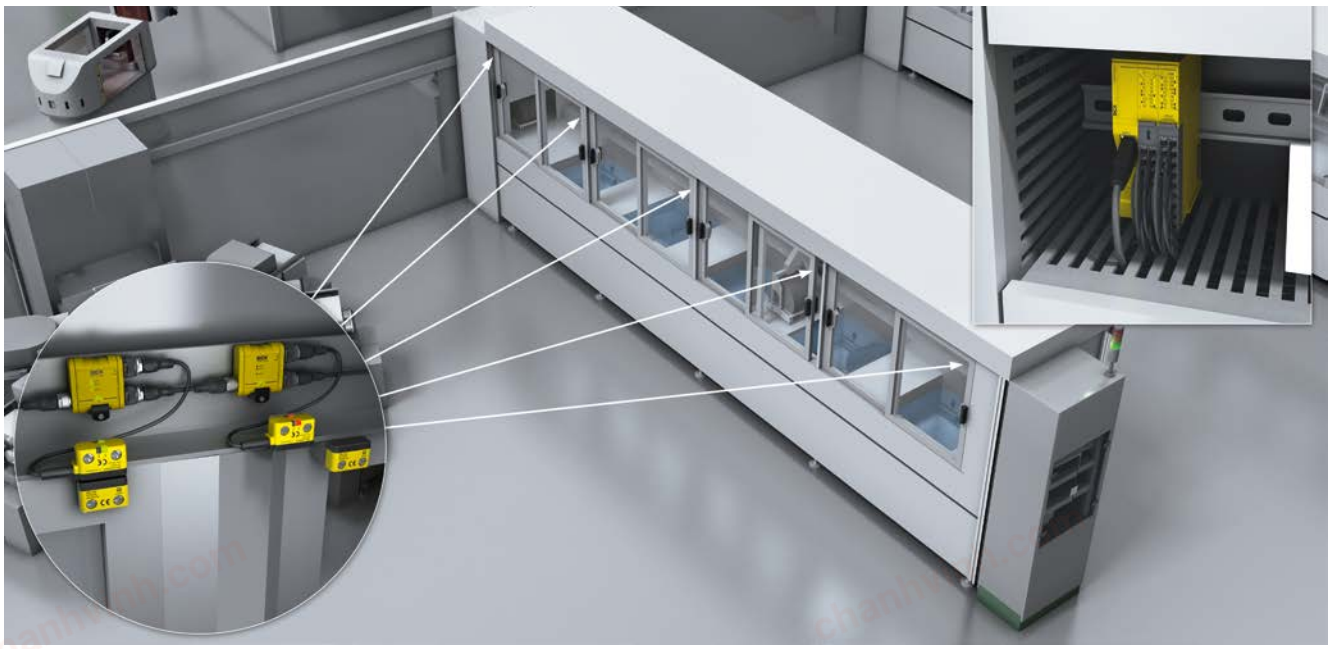
The fast response time enables the safety distance to be reduced thereby shortening the cycle time for increased productivity.

Access protection for robot applications



Flexi Compact in combination with transponder safety switches from SICK guarantee safe door monitoring with a high level of manipulation protection.

Safe series connection with Flexi Loop



When combined with Flexi Loop, the simple and cost-effective series connection of safety sensors offers a successful solution with no reduction in safety level. A detailed diagnostic function also assists with troubleshooting thereby reducing downtimes.

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SAFETY UNDER CONTROL – COMPACT, EASY AND EFFICIENT



Product description

The Flexi Compact safety controller is based on a future-proof technology platform and can be programmed via software. Thanks to its modularity, it can be optimally configured for a wide range of application requirements and its compact construction enables it to be installed in a space-saving manner. Flexi Compact is characterized by its high usability: planning and commissioning is fast and easy using the intuitive Safety Designer configuration software and a user-friendly housing. Diagnostics data is available up to the cloud via common fieldbus systems. Faster production startup, increased machine availability, and extended functions such as safe series connection with Flexi Loop increase productivity and efficiency throughout the machine life cycle.

At a glance

- Software-programmable safety controller with modular hardware platform
- High performance Safety over EtherCAT® backplane bus
- User-friendly housing in a slim design
- Intuitive Safety Designer configuration software
- Data communication in common fieldbus systems
- Safe series connection with Flexi Loop

Your benefits

- Usability optimized: time-saving planning of the safety application and easy commissioning
- Efficiency increased: higher productivity thanks to fast production startup, short response times, and comprehensive diagnostic options for efficient machine and system operation
- Future-proof guaranteed: flexible solutions with modular hardware, forward-looking technologies, and end-to-end data availability for Industry 4.0 applications

Additional information

Detailed technical data 9
Ordering information 11
Dimensional drawings 12
Accessories. 13

→ www.sick.com/Flexi_Compact

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.

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Detailed technical data

More detailed data can be found in the operating instructions. Download ➜ www.sick.com/Flexi_Compact

Features

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
Module	Main module		I/O module		Gateway	
Safety inputs	20		8		–	
Safety outputs	4		–	8	–	
Test outputs	8			–		
Fieldbus	–	Modbus® TCP SLMP	–		EtherCAT®	PROFINET
Configuration method	Via software (Safety Designer)					

Safety-related parameters

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
Safety integrity level	SIL3 (IEC 61508) SILCL3 (IEC 62061)				–	
Category	Category 4 (ISO 13849-1)				–	
Performance level	PL e (ISO 13849-1)				–	
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

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
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	–	✔	–			
Integration into an EtherCAT® network	–				✔	–
Integration into a PROFINET network as a field device	–					✔
Communication of multiple applications with the safety controller via TCP/IP sockets	–					✔
Configuration of the safety controller via TCP/IP	–	✔	–			✔

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Interfaces

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
Connection type	Front connector with spring terminals				–	
Front connector	1 front connector with 16 terminals and opening for SmartPlug, 1 front connector with 18 terminals		1 front connector with 18 terminals		–	
Safety inputs	20		8		–	
Safety outputs	4		–	8	–	
Test outputs	8			–		
Configuration and diagnostics						
USB connection via SmartPlug	✔		–			
TCP/IP configuration interface	–	✔	–			✔
Configuration via TFT display	–				✔	
Fieldbus	–	Modbus® TCP SLMP	–		EtherCAT®	PROFINET
Fieldbus interface	–	1 x female connector, RJ45	–		2 x female connector, RJ45	
Display elements	LEDs				TFT display	

Electrical data

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
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		The voltage supply of the extension modules is maintained via the backplane bus			
Supply voltage V_S	24 V DC (16.8 V ... 30 V) [1]		–	24 V DC (16.8 V ... 30 V) [2]	–	
Type of voltage supply	PELV or SELV [3]		–	PELV or SELV [4]	–	
Overvoltage category	II (EN 61131-2)		–	II (EN 61131-2)	–	
Power consumption at nominal voltage (without outputs)	3 W (DC)		2.4 W (DC)			
Power loss	≤ 6.2 W	≤ 6.3 W	≤ 3.3 W	≤ 4.9 W	≤ 3.3 W	

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

[2] Voltage supply of the safety outputs.

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

[4] The supply current must be limited externally to max. 4 A – either by the power supply unit used, or by means of a fuse.

Mechanical data

	CPUc1	CPUc2	XTDI1	XTDO1	GETC1	GPNT1
Dimensions (W x H x D)	46.2 mm x 124.7 mm x 85.5 mm		14 mm x 124.7 mm x 85.5 mm		18 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	277 g (± 5 %)	282 g (± 5 %)	104 g (± 5 %)	111 g (± 5 %)	108 g (± 5 %)	
Mounting	Mounting on a 35 mm × 7.5 mm mounting rail in accordance with IEC 60715					

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Ambient data

Enclosure rating	IP20 (EN 60529)
Ambient operating temperature	–25 °C ... +55 °C [1]
Storage temperature	–25 °C ... +70 °C
Air humidity	10 % ... 95 %, Non-condensing
Vibration resistance	15 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.

Ordering information

Main modules

Connection type	Inputs/outputs	Fieldbus	Type	Part no.
Front connector with spring terminals [1]	20 safety capable inputs 4 safety outputs 8 test outputs	–	FLX3-CPUC100	1085349
		Modbus® TCP SLMP	FLX3-CPUC200	1085351

[1] Front connector and SmartPlug are included with delivery

I/O modules

Connection type	Inputs/outputs	Type	Part no.
Front connector with spring terminals [1]	8 safety inputs 8 test outputs	FLX3-XTDI100	1085353
	8 safety inputs 8 safety outputs	FLX3-XTDO100	1085354

[1] Front connector is included with delivery

Gateways

Fieldbus	Type	Part no.
EtherCAT®	FLX0-GETC100	1085357
PROFINET	FLX0-GPNT100	1085356

Relay modules

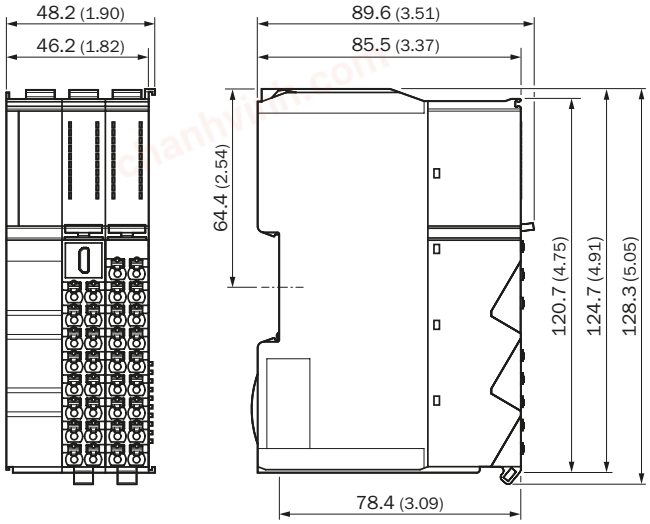
Connection type	Applications	Compact sensor types	Enabling current paths	Type	Part no.
Front connector with spring terminals [1]	Output expansion module for OSSDs	Safety sensors with OSSDs	2	RLY3-OSSD100	1085343
			4	RLY3-OSSD400	1099971

[1] Front connector is included with delivery

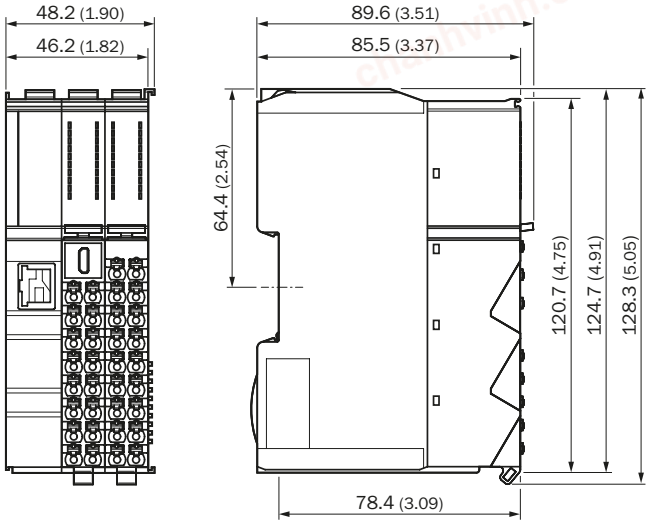
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Dimensional drawings (Dimensions in mm (inch))

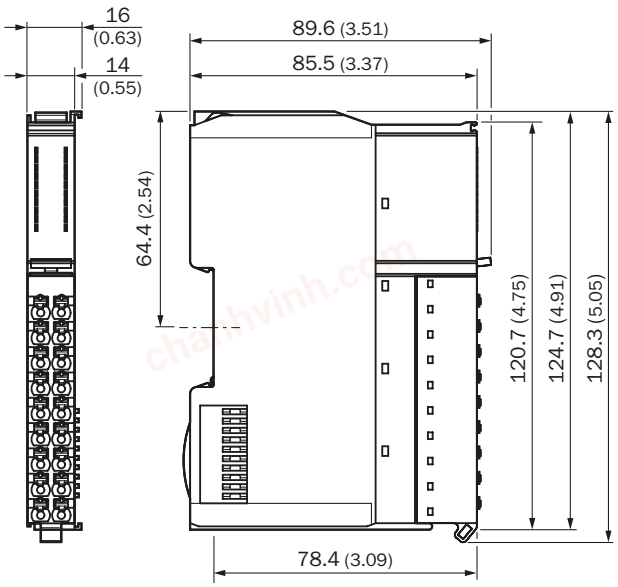
FLX3-CPUC100 main module



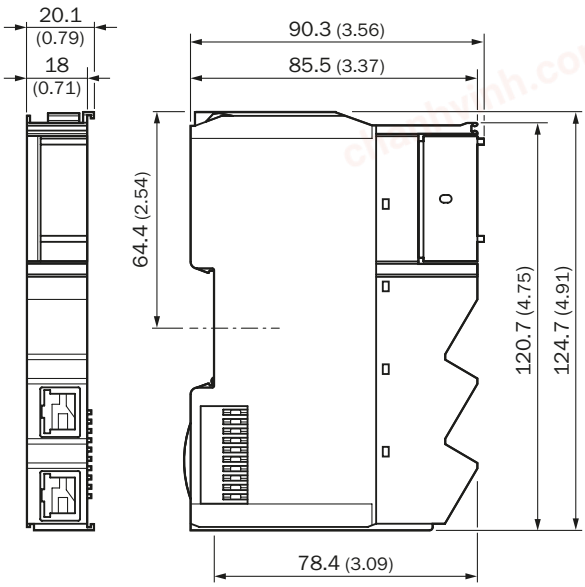
FLX3-CPUC200 main module



I/O modules



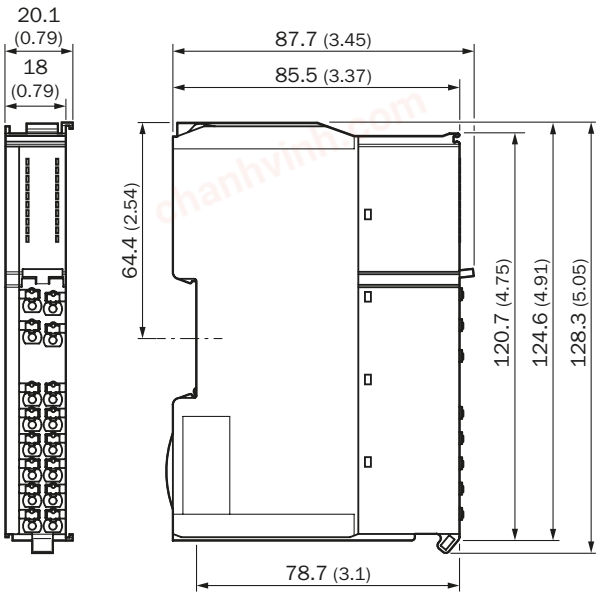
Gateways



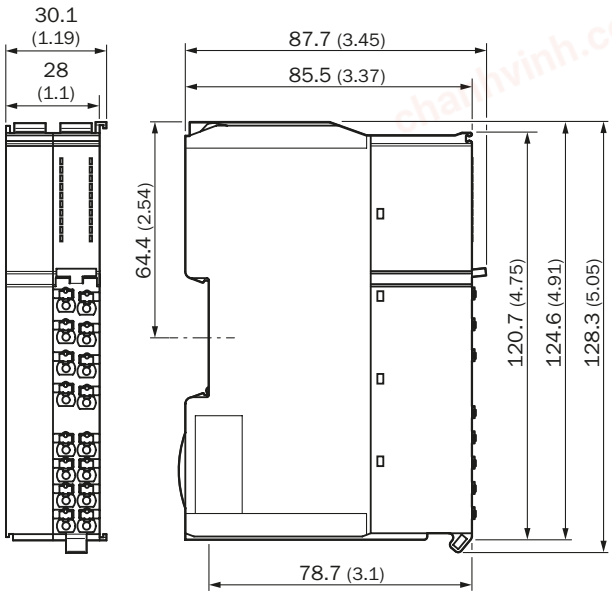
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RLY3-OSSD100 relay module



RLY3-OSSD400 relay module



Accessories

Mounting systems

Device protection (mechanical)

Figure	Description	Type	Part no.
	Housing end cap for mechanical protection on the backplane bus. Attach the housing end cap to the last module.	FLX0-ACC0400	5340579

Connection systems

Plug connectors and cables

Other connectors and cables

Figure	Description	Type	Part no.
	The SmartPlug is the system memory plug of the safety controller. The SmartPlug has a USB connection for connecting the safety controller to a computer. The SmartPlug will be mounted in the FLX0-ACC0300 front connector of the main module.	FLX3-SMPL100	2106852
	Front connector with 16 terminals and opening for SmartPlug	FLX0-ACC0300	6069666
	Front connector with 18 terminals	FLX0-ACC0200	6066285

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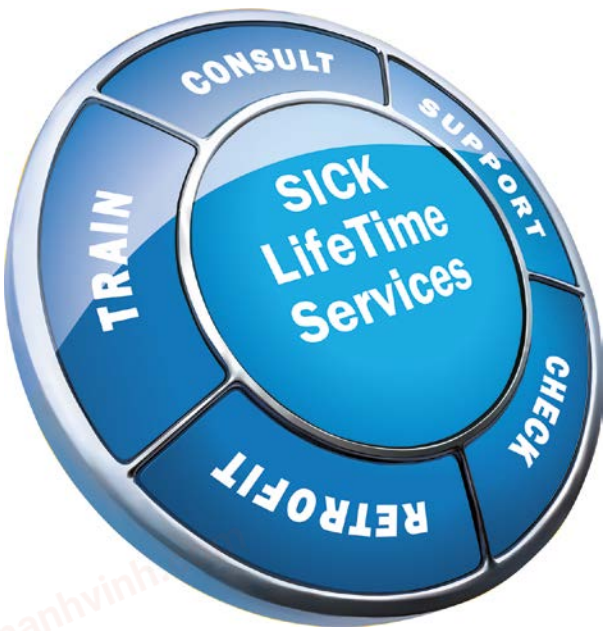
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SERVICES FOR MACHINES AND PLANTS: SICK LifeTime Services

Our comprehensive and versatile LifeTime Services are the perfect addition to the comprehensive range of products from SICK. The services range from product-independent consulting to traditional product services.



Consulting and design
Safe and professional

Product and system support
Reliable, fast, and on-site

Verification and optimization
Safe and regularly inspected

Upgrade and retrofits
Easy, safe, and economical

Training and education
Practical, focused, and professional

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SICK AT A GLANCE

SICK is a leading manufacturer of intelligent sensors and sensor solutions for industrial applications. With more than 10,000 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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Sensor Intelligence.