



Safe EFI-pro System

Safe integration for a productive interaction

SICK
Sensor Intelligence.

Advantages



Efficient interplay

The Safe EFI-pro system combines the tried-and-proven modular Flexi Soft safety controller with the microScan3 – EFI-pro and nanoScan3 – EFI-pro safety laser scanners. Safe device communication via the EFI-pro gateway enables quick and easy networking of the system components. Actuators of other manufacturers, such as robot controls, can be safely connected via EtherNet/IP™ CIP Safety™.



The Flexi Soft safety controller with EFI-pro gateway ensures intelligent networking of the system components.



The microScan3 and nanoScan3 safety laser scanners are reliable and resilient thanks to the innovative safeHDDM® scanning technology.



For example, robot controls can be safely integrated into the safety system via EtherNet/IP™ CIP Safety™.



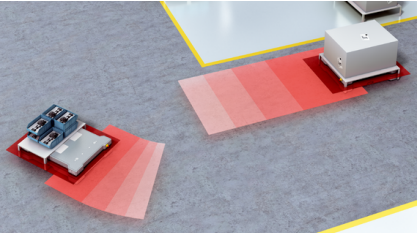
Safe networking via EFI-pro makes it easy to use innovative sensor functions.



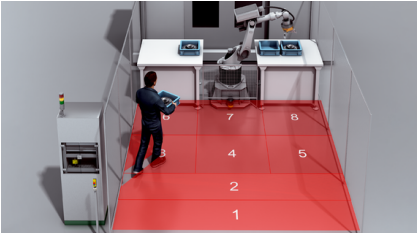
Safe productivity

Up to six microScan3 and/or nanoScan3 safety laser scanners can be networked to ensure safe and adaptive perception of the environment. Every device offers up to eight simultaneously monitorable protective fields and up to 128 monitoring cases. Together with the safe motion control function of the Flexi Soft safety controller, monitoring cases can be adapted dynamically to the respective monitored area. This increases the productivity of collaborative machines.

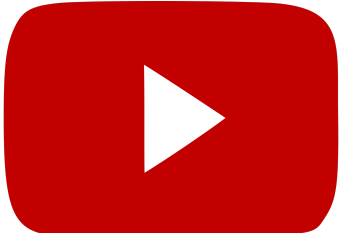
More functions for challenging safety applications



Dynamic monitoring case switching, for example depending on the speed and steering angle of an AGV.



Simultaneously monitorable protective fields for efficient, adaptive robot behavior.



Mobile robots in use with the Safe EFI-pro System.



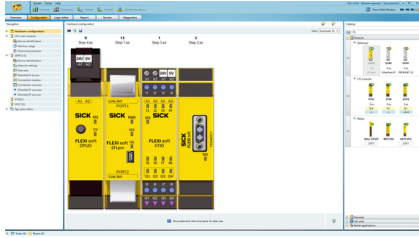
Use the extended functions for higher productivity with extensive safety monitoring.



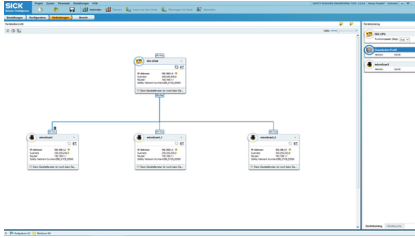
Time- and cost-saving configuration and commissioning

The commissioning of the system components is quick and easy with the Safety Designer engineering tool. Thanks to the drag-and-drop function, networking between the safety controller and the safety sensor is done in seconds. The smart connectivity with a standardized plug connector and the use of Industrial Ethernet (IEEE 802.3) also reduce cabling work.

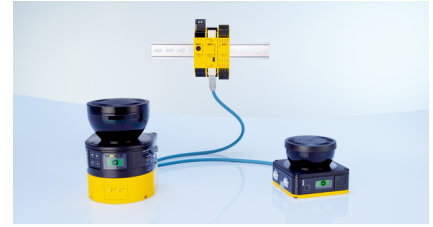
Intuitive engineering tool and reduced cabling work



License-free and intuitive Safety Designer engineering tool for system component configuration and diagnostics.



Safety Designer automatically detects all devices. Networking is then done simply with drag-and-drop.



Fast cabling of system components thanks to standardized Ethernet technology.

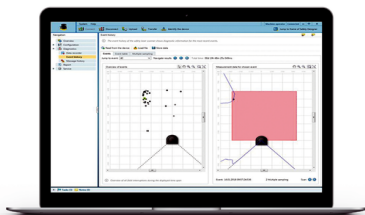


The configuration of system component with the intuitive Safety Designer engineering tool and cabling via Industrial Ethernet (IEEE 802.3) ensure time- and cost-efficient commissioning.



Optimized processes

Comprehensive diagnostic options - data up into the cloud



Quick analysis, for example of machine downtimes, thanks to comprehensive diagnostic options in the Safety Designer.



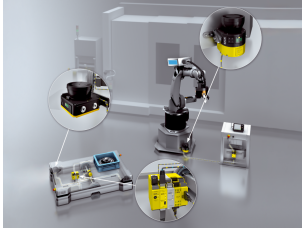
Integration into all common fieldbus systems is done via additional non-safety-related gateways.



Transport of process and diagnostic data up into the cloud enables centralized analysis and optimization of processes.



Optimize your processes thanks to extensive diagnostic options in Safety Designer and constant data availability up into the cloud.



Technical data overview

Application	Indoor
Description	Safe speed monitoring and safe position monitoring
Safety level	PL d, SIL 2, Type 3 PL e, SIL 3

Product description

Safe EFI-pro system is the result of the consistent development of the successful EFI interface and enables intelligent safeguarding of AGVs, robots and other challenging applications. The industrial Ethernet-based EFI-pro network technology enables the quick exchange and transmission of safe and non-safe data throughout all levels of communication. The central component is the EFI-pro gateway. It ensures safe and fast integration of innovative sensor solutions from SICK as well as direct integration of robot controls into the Flexi Soft safety controller via EtherNet/IP™ CIP Safety™. The Safe EFI-pro system is therefore a crucial enabler for implementing Industry 4.0.

At a glance

- Industrial Ethernet-based, safe network technology
- Configuration via Safety Designer
- Safe integration of up to 6 safety laser scanners
- Safe integration of robot controls via EtherNet/IP™ CIP Safety™
- Safe, integrated movement monitoring
- Simultaneous monitoring of up to 48 protective fields

Your benefits

- Efficient interplay in the safety system: Networking of safety sensors, safety controllers and actuators connected via EtherNet/IP™ CIP Safety™
- Fast, intuitive commissioning: Safety Designer for the configuration of SICK system components and clever connection technology
- Safe productivity: Combination of safe motion monitoring, simultaneous protective field monitoring and extended network integration
- Optimized processes: Extensive diagnostic options via Safety Designer and data via Ethernet from the field level into the cloud
- Safe investment thanks to industrial Ethernet technology

Fields of application

- Reliable environment perception for automated guided vehicles (AGVs) – from small and flexible to large and versatile vehicles
- Innovative protection of robots which cooperate and collaborate with humans
- Safety applications in the field of Industry 4.0 and the industrial Internet of Things

Ordering information

Other models and accessories → www.sick.com/Safe_EFI-pro_System

Integration in the control system	Protective field range	Number of fields	Number of monitoring cases	Connection type	Type	Part no.
Local inputs and outputs (I/O), EFI-pro	4 m	128	128	M12	MICS3-CCAZ40AA1P01	1110035
	5.5 m	128	128	M12	MICS3-CCAZ55AA1P01	1110033
	9 m	128	128	M12	MICS3-CCAZ90AA1P01	1110037
EFI-pro	4 m	8	8	M12	MICS3-ABAZ40ZA1P01	1092539
	5.5 m	8	8	M12	MICS3-ABAZ55ZA1P01	1092538
	9 m	8	8	M12	MICS3-ABAZ90ZA1P01	1094455
	4 m	128	128	M12	MICS3-CBAZ40ZA1P01	1091037
	5.5 m	128	128	M12	MICS3-CBAZ55ZA1P01	1091038
	9 m	128	128	M12	MICS3-CBAZ90ZA1P01	1094465

Integration in the control system	Protective field range	Number of fields	Number of monitoring cases	Type	Part no.
Local inputs and outputs (I/O), EFI-pro	3 m	128	128	NANS3-CAAZ30AA1	1126792
EFI-pro	3 m	128	128	NANS3-CAAZ30ZA1	1126793

• Main modules

Number of EFI interfaces	Protective coating	Type	Part no.
0	✓	FX3-CPU000010	1050615
	-	FX3-CPU000000	1043783

• Gateways

Fieldbus, industrial network	Protective coating	Type	Part no.
CANopen	✓	FX0-GCAN00010	1118379
	-	FX0-GCAN00000	1044076
EFI-pro, EtherNet/IP™	✓	FX3-GEPR00010	1112296
	-	FX3-GEPR00000	1069070
EtherCAT®	✓	FX0-GETC00010	1127487
	-	FX0-GETC00000	1051432
EtherNet/IP™	✓	FX0-GENT00010	1121596
	-	FX0-GENT00000	1044072
Modbus	✓	FX0-GMOD00010	1127717
	-	FX0-GMOD00000	1044073
PROFINET	✓	FX0-GPNT00010	1121597
	-	FX0-GPNT00000	1044074

Number of safety inputs	Number of safe analog inputs	Number of non-safe inputs	Number of test outputs	Number of safe outputs	Number of non-safe outputs	Protective coating	Type	Part no.
-	-	6-8	-	-	6-8	✓	FX0-STI068012	1112297
						-	FX0-STI068002	1061778
8	2	-	-	-	-	✓	FX3-ANA020012	1112299
						-	FX3-ANA020002	1051134
						✓	FX3-XTDS84012	1112301
						-	FX3-XTDS84002	1061777
8	-	-	0-2	-	4-6	✓	FX3-XTDS84012	1112301
						-	FX3-XTDS84002	1061777
			2	4	-	✓	FX3-XTI084012	1050618
						-	FX3-XTI084002	1044125
8	-	-	-	-	✓	FX3-XTDI80012	1050617	
					-	FX3-XTDI80002	1044124	

- Motion Control modules

Description	Protective coating	Type	Part no.
Safe speed monitoring and safe position monitoring	✓	FX3-MOC100010	1112300
	-	FX3-MOC100000	1057833

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