



Flexi Soft

Gateways – Release Notes

The modular safety controller that cleverly incorporates advantages

SICK
Sensor Intelligence.

Overview gateways

Type	Description	Current version	Page
FX0-GPNT	PROFINET IO gateway	V3.05.0	3
FX0-GENT	EtherNet/IP™ gateway	V3.05.0	6
FX0-GMOD	Modbus TCP gateway	V3.03.0	10
FX0-GETC	EtherCAT gateway	V1.04.0	12
FX0-GPRO	PROFIBUS DP gateway	V1.32.0	13
FX0-GCAN	CANopen gateway	V1.31.0	14
FX0-GDEV	DeviceNet gateway	V2.02.0	15
FX3-GEPR	EFI-pro gateway	V1.07.0	16

FX0-GPNT

Firmware version 3.05.0

Production release: 08/2019

General

- Improved security and resolution of issues
- Improved backward compatibility to firmware versions 2.xx and 1.xx

What has changed?

- Changes in PROFINET IO interface for improved backward compatibility
 - The module status bits in the 4-byte module status of input data set 3 are transferred in the Ethernet TCP/IP socket interface and in acyclic PROFINET services in the same way as in firmware version 2.xx, i.e. in reverse order to firmware version 3.04.0
- Changes in Ethernet TCP/IP socket interface for improved backward compatibility
 - Backward compatible TCP/IP response of auto-update setting
 - TCP socket read request and COS/heartbeat update data are now always sent in separate TCP/IP telegrams
- Changes in Ethernet interface to improve security
 - Implementation of MAC address check of UDP telegrams on UDP port 30718

Resolved issues

- Ethernet TCP/IP socket interface
 - Improvement of segmented TCP transmission of RK512 messages
 - Improved simultaneous use of the RS-232 interface and Ethernet TCP/IP socket interface
 - Resolved connection issues when using TCP/IP socket server and socket client simultaneously and after reset flag (TCP-RST) from gateway
 - Improved robustness of Ethernet TCP/IP socket client connections. These can now be configured and used independently
- Configuration tool interface
 - Improved network device scan and corrected representation of serial number
 - Improved stability of UDP port 30718 at high load
 - Resolved buffer overflow upon reception of UDP frames > 1472 bytes at UDP port 30718

Firmware version 3.04.0

Production release: 01/2019

General

- Redesign of PROFINET gateway hardware and firmware.
Firmware version \geq 3.04.0 is backwards compatible to firmware versions 2.xx and 1.xx

What's new?

- As of firmware version 3.04.0 FX0-GPNT also supports
 - PROFINET IO, Conformance Class B
 - Netload class 1
 - MRP Client
- Improved performance
 - Update rate for change of state (COS)
Firmware version $<$ 3.04.0: 10ms (10ms increments)
Firmware version \geq 3.04.0: min. 1ms (1ms increments)
- Support of Identification and Maintenance data set (I&M data):
Previously I&M information has been stored in the PROFINET gateway module. As of firmware version 3.04.0 the I&M information is stored in the system plug (MPL) and can be viewed and edited using the configuration tool.

What has changed?

- Update of gateway module faceplate
- Major version of gateway module has changed in firmware version 3.04.0
Attention: version checks implemented in PLC might have to be updated accordingly
- IP address
 - Firmware version $<$ 3.04.0
Preset IP address: 192.168.250.250
When updated or changed, the IP address is stored in the gateway module
 - Firmware version \geq 3.04.0
No preset IP address. When set or updated, the changed IP address is stored in system plug (MPL) only. Gateways are still found by configuration tool scan.
- Gateway modules with firmware version \geq 3.04.0 do not support DHCP.
Usually PROFINET IO DCP is used to assign an IP address after power-up.
The new configuration tool option 'remanent' allows storage of IP address over power cycle

Firmware version 2.12.0

Production release: 09/2017

The UDP scan has been improved such that it can also be done after IP address change.

Improvement of DHCP such that after deactivation no more two power cycles are required for IP address update.

Improvement of error messages concerning IP address conflict.

In case of CPU lockout due to overvoltage the module status of the main module, gateways and all expansions modules is set to '0'.

Improvement of response to SDO-requests to avoid CPU lockout.

Resolution of internal error in Flexi Soft System after power-up for certain Flexi Soft system expansion module combinations.

Improvement of ACR execution with safety laser scanner S300 when using Ethernet Gateways.

Firmware version 2.08.0

Production release: 12/2015

PROFINET IO re-certification.

Firmware version 2.06.0

Production release: 03/2015

Alignment of Ethernet port numbers.

Firmware version 2.01.0

Production release: 03/2012

Support of up to six connections per TCP/IP socket. The gateway supports up to four TCP/IP sockets. Thus, up to 24 TCP/IP connections can be established to the gateway.

Improved UDP Scan: Gateways will be detected, even if they are in a different subnet.

The red/green flashing of the STATUS LED can be disabled in the Flexi Soft Designer. Otherwise the LED will flash permanently if no PROFINET communication is established (e.g. if the gateway is used for TCP/IP communication only).

FX0-GENT

Firmware version 3.05.0

Production release: 08/2019

General

- Improved security and resolution of issues
- Improved backward compatibility to firmware versions 2.xx and 1.xx

What has changed?

- Changes in EtherNet/IP™ interface interface for improved backward compatibility
 - Support of configuration assembly instance in range 1 to 9 in forward open command, provided that the configuration data length is 0 (configuration data is still not supported in forward open)
 - Improved backwards compatibility by converting error messages into warnings if the counterpart is not reached when using the communication 'gateway write/read from tag/file'
- Changes in Ethernet TCP/IP socket interface for improved backward compatibility
 - Backward compatible TCP/IP response of auto-update setting
 - TCP socket read request and COS/heartbeat update data are now always sent in separate TCP/IP telegrams
- Changes in Ethernet interface to improve security
 - Implementation of MAC address check of UDP telegrams on UDP port 30718

Resolved issues

- Backward compatibility improvement of EtherNet/IP™ interface
 - Resolution of IP address swapping when using the EtherNet/IP™ communication 'Gateway write/read from tag/file'
 - Improved conversion of GENT V2 configurations with DHCP. There are no more faulty configurationsw
- Ethernet TCP/IP socket interface
 - Improvement of segmented TCP transmission of RK512 messages
 - Improved simultaneous use of the RS-232 interface and Ethernet TCP/IP socket interface
 - Resolved connection issues when using TCP/IP socket server and socket client simultaneously and after reset flag (TCP-RST) from gateway
 - Improved robustness of Ethernet TCP/IP socket client connections. These can now be configured and used independently

- Configuration tool interface
 - Improved network device scan and corrected representation of serial number
 - Optimization of error messages and warnings to avoid verification problems due to a too large number of errors, e.g. caused by the absence of counterpart of Ethernet TCP/IP socket connections
 - Improved stability of UDP port 30718 at high load
 - Resolved buffer overflow upon reception of UDP frames > 1472 bytes at UDP port 30718

Firmware version 3.04.0

Production release: 01/2019

General

- Redesign of EtherNet/IP™ gateway hardware and firmware.
Firmware version ≥ 3.04.0 is backwards compatible to firmware versions 2.xx and 1.xx

What's new?

- Improved performance
 - Packet update interval for Class 1 connections
Firmware version < 3.04.0 : 10ms (also refer to operating instructions)
Firmware version ≥ 3.04.0: min. 4ms (1ms increments)
 - Update rate for change of state (COS)
Firmware version < 3.04.0 : 10ms (10ms increments)
Firmware version ≥ 3.04.0 : min. 1ms (1ms increments)

What has changed?

- Update of gateway module faceplate
- Major version of gateway module has changed in firmware version 3.04.0:
When replacing a module with firmware version < 3.04.0 by a module with firmware version ≥ 3.04.0 the compatibility check in command ForwardOpen fails, if a Rockwell PLC with compatibility check 'exact match' or 'compatibility mode' is used
- Preset IP address
 - Firmware version < 3.04.0
Preset IP address: 192.168.250.250
When updated or changed, the IP address is stored in the gateway module
 - Firmware version ≥ 3.04.0
No preset IP address. DHCP is per default active.

When set or updated, the changed IP address is stored in system plug (MPL) only.
Gateways are still found by configuration tool scan.

- Number of possible EtherNet/IP™ connections
 - EtherNet/IP™ Class 1 communication – implicit messaging
Firmware version < 3.04.0: refer to operating instructions Flexi Soft Gateways
in Flexi Soft Designer/Safety Designer
Firmware version ≥ 3.04.0 : 8 connections
 - EtherNet/IP™ Class 3 communication – Explicit messaging
Firmware version < 3.04.0:

Transmission type	Maximum number of connections
Rx (to PLC): Gateway writes to tag/file (master) Tx (from PLC): Gateway reads from tag/file (master)	Rx and Tx: 1
Rx (to PLC): Gateway writes to tag/file (master) Tx (from PLC): PLC writes (slave)	Rx: 1 Tx: 127
Rx (to PLC): PLC requests (slave) Tx (from PLC): Gateway reads from tag/file (master)	Rx: 127 Tx: 1
Rx (to PLC): PLC requests (slave) Tx (from PLC): PLC writes (slave)	Rx and Tx: 128

also refer to operating instructions Flexi Soft Gateways in Flexi Soft / Safety Designer
Firmware version ≥ 3.04.0: 8 connections (independent of Rx/Tx and master/slave mode)

Firmware version 2.11.0

Production release: 05/2017

Improvement of ACR execution with safety laser scanner S300 when using Ethernet Gateways
Improvement of communication to CoDeSys-EtherNet/IP™-master
Improvement of response to SDO-requests to avoid CPU lockout

Firmware version 2.10.0

Production release: 10/2016

Improvement of state change for Input Dataset 1 Bit '0' in the area of Implicit Messaging. This will follow in all cases the corresponding status of the PLC output.
The UDP scan has been improved such that it can also be done after IP address change.
Improvement of DHCP such that after deactivation no more two power cycles are required for IP address update.
In case of CPU lockout due to overvoltage the module status of the main module, gateways and all expansions modules is set to '0'.

Firmware version 2.05.0

Production release: 07/2014

If network cable is disconnected behind the switch the TCP/IP socket communication for the gateway still remains. Thus, after approx. 1 minute the station goes into lock-out. The issue is resolved by this version.

Firmware version 2.04.0

Production release: 04/2013

It is rarely possible that the Flexi Soft System cannot be powered-up without an error. The issue is resolved by this version.

Firmware version 2.02.0

Release date: 03/2012

Support of up to six connections per TCP/IP socket. The gateway supports up to four TCP/IP sockets. Thus, up to 24 TCP/IP connections can be established to the gateway.

Improved UDP Scan: Gateways will be detected, even if they are in a different subnet.

Flexi Soft EtherNet/IP™ gateways with firmware V1.xx.x support only EtherNet/IP™ explicit messaging (Class 3). Implicit messaging (Class 1) is not supported. Please use the EDS file SICK_FX0_GENT_1.00.eds for these gateways.

Flexi Soft EtherNet/IP™ gateways with firmware O V2.00.0 support EtherNet/IP™ implicit messaging and explicit messaging (Class 1 and Class 3). Please use the EDS file SICK_FX0_GENT_2.02.eds for these gateways.

FX0-GMOD

Firmware version 3.03.0

Production release: 07/2024

General

- Improvement of Modbus communication by changing communication type from half-duplex to full-duplex

Firmware version 3.02.0

Production release: 02/2024

General

- Bug fixing of a communication error in which the reading of process data was not supported

Firmware version 3.00.0

Production release: 10/2023

General

- Redesign of Modbus-Gateway hardware und firmware
- Improvement of safety measures and bug fixes
- Backward compatibility to firmware version 2.xx und 1.xx

What's new?

- Increased maximum power consumption of 3 W

What has changed?

- Removing of Telnet server for an increased security
- Front plate adjustment due to unification of all modules with firmware version V3.xx.x (FX0-GENT, FX0-GPNT, FX0-GMOD)
- Adjustment of the maximum connections to the gateway FX0-GMOD to 16 connections

Firmware version 2.11.0

Production release: 05/2017

Improvement of ACR execution with safety laser scanner S300 when using Ethernet Gateways
Improvement of response to SDO-requests to avoid CPU lockout

Firmware version 2.10.0

Production release: 10/2016

The UDP scan has been improved such that it can also be done after IP address change.
Improvement of DHCP such that after deactivation no more two power cycles are required for IP address update.
In case of CPU lockout due to overvoltage the module status of the main module, gateways and all expansions modules is set to '0'.

Firmware version 2.01.0

Production release: 03/2012

Support of up to six connections per TCP/IP socket. The gateway supports up to four TCP/IP sockets. Thus, up to 24 TCP/IP connections can be established to the gateway.

Improved UDP Scan: Gateways will be detected, even if they are in a different subnet.

Data can be read out also wordwise.

FX0-GETC

Firmware version 1.04.0

Production release: 04/2021

Improvement of the UDP tunnel with an updated EtherCAT communication stack.
Improved activation of the Ethernet Physical Layers. These are activated after booting.

Firmware version 1.03.0

Production release: 08/2013

It is rarely possible that data errors occur. The issue is resolved by this version.

FX0-GPRO

Firmware version 1.32.0

Production release: 10/2012

Adaptions to new requirements regarding the PNO conformance test.

FX0-GCAN

Firmware version 1.31.0

Production release: 05/2013

Some CAN objects were write-protected with firmware version 1.30. Due to the fact that these objects had not been write-protected in previous versions, the write-protection is removed again.

FX0-GDEV

Firmware version 2.02.0

Production release: 06/2017

Additional produced assembly instances by split of the input data set 1 into 5 blocks using the corresponding EDS file.

Firmware version 2.01.0

Production release: 03/2015

Additional consume and produce assemblies.

Firmware Version 1.01.0

Production release:

Initial version

FX3-GEPR

Firmware version 1.07.0

Production release: 10/2020

Improvement inside the firmware of the ipc queue. In the past, too much CPU load (e.g. caused by high "CIP Explicit Messaging" traffic) could lead to a fatal error because of an issue in ipc queue.

Improvement of the answering to a SOPAS Scans requests. In the past devices whose MAC-Address had low byte of zero, did not answer to a SOPAS Scan request.

Improvement of the SNCT Request from third party devices. In the past, wrong values could be transmitted.