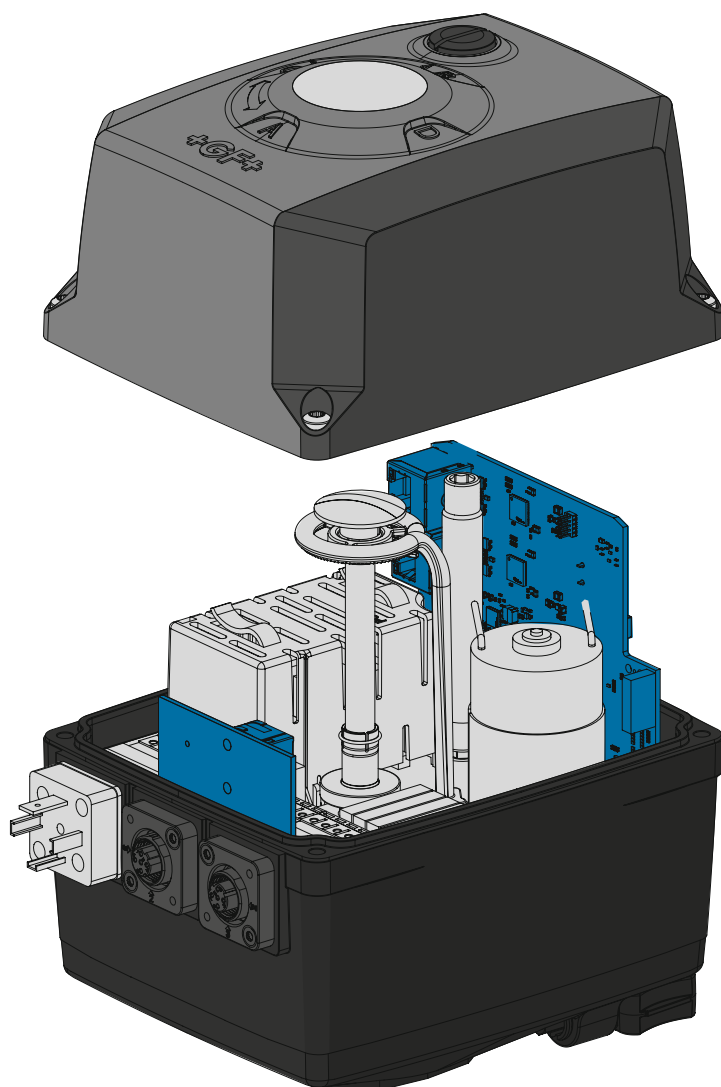


# EtherNet/IP Interface Card for Electric Actuators Type EA25 - EA250

## Interface Description



2033101 EA25-250 EtherNet/IP

MA\_00140 / EN / 01 (11.2024)

© Georg Fischer Piping Systems Ltd

CH-8201 Schaffhausen/Schweiz

+41 52 631 30 26/info.ps@georgfischer.com

[www.gfps.com](http://www.gfps.com)

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## Original operating manual

### Disclaimer

The technical data are not binding. They neither constitutes expressly warranted characteristics nor guaranteed properties nor a guaranteed durability. They are subject to modification. Our General Terms of Sale apply.

### Observe instruction manual

The instruction manual is part of the product and an important element within the safety concept.

- ▶ Read and observe instruction manual.
- ▶ Always have instruction manual available by the product.
- ▶ Give instruction manual to all subsequent users of the product.

# 1 About this document

This document contains all the necessary information to operate the product.

## 1.1 Other applicable documents

Code	Document name
700671687	Planning Fundamentals GF Piping Systems Industry
2008328	Operating Instructions for Electric Actuators EA25-250
700278223	Instruction Manual EA25-250 Ethernet Interface Card

These document can be obtained through the GF Piping Systems representative or at [www.gfps.com](http://www.gfps.com).

# 2 Intended use

Supplementing documentation to EA manual for:

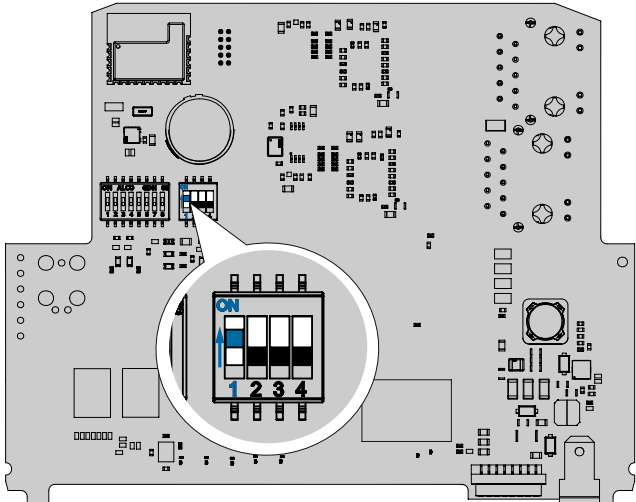
- EtherNet/IP integration into control systems, e.g. Rockwell Automation, Schneider Electric.
- Access to embedded web server.

# 3 IT Security

## 3.1 Hardening Guidelines

Deactivate web server after commissioning.

There are two options for doing this:

Option 1	Option 2
<p>Turning the DIP switch 1 to "ON": On = Webserver OFF Off = Webserver ON</p> 	<p>Writing the Parameter 23 (Class: 117, Instance: 6, AttributeID: 1, Name: WebserverEnabled (ByteOffset: 4; ByteCount: 1). See chapter „ConfigAssembly“) to 0 (false).</p>

**Note:**

The DIP switch is dominant. If DIP is set to ON (Webserver off) the value of Parameter 23 is read-only (0).

## 3.2 Secure operation Guidelines

- It is not allowed to connect the actuator directly to the Internet (see Planning Fundamentals Industry, chapter Defense in depth strategy).
- The actuator must not be used to bridge two different network zones.

### 3.3 Secure disposal guidelines

To ensure that all customer-related data on the device is deleted, it is recommended to carry out a „reset to factory settings“ before disposing of the device.

To reset the actuator to factory:

1. Open housing.
2. Connect the actuator to the power supply.
3. Press the two outer buttons on the EA socket board for at least 3 seconds (see Electric Actuator EA15-250 operating instructions).
4. The actuator acknowledges the factory reset with a „P“ on the 7-segment display.
5. Switch the actuator off.

For a secure destruction of the electronics, it can be sent back to GF Piping Systems. Contact your local GF Piping Systems partner.

### 3.4 Secure operation guidelines

For secure operation it is recommended to:

- Turn the Webserver off, see chapter „Hardening Guidelines“.
- Regular installation of security updates (see <https://www.gfps.com/cyber-security> for updates). See chapter „Security Update via TFTP“ for further details.

Please indicate any deviations or suspicious behavior at: <https://www.gfps.com/cyber-security>

### 3.5 Secure Account management

This is not applicable for this product, as only one group account is available.

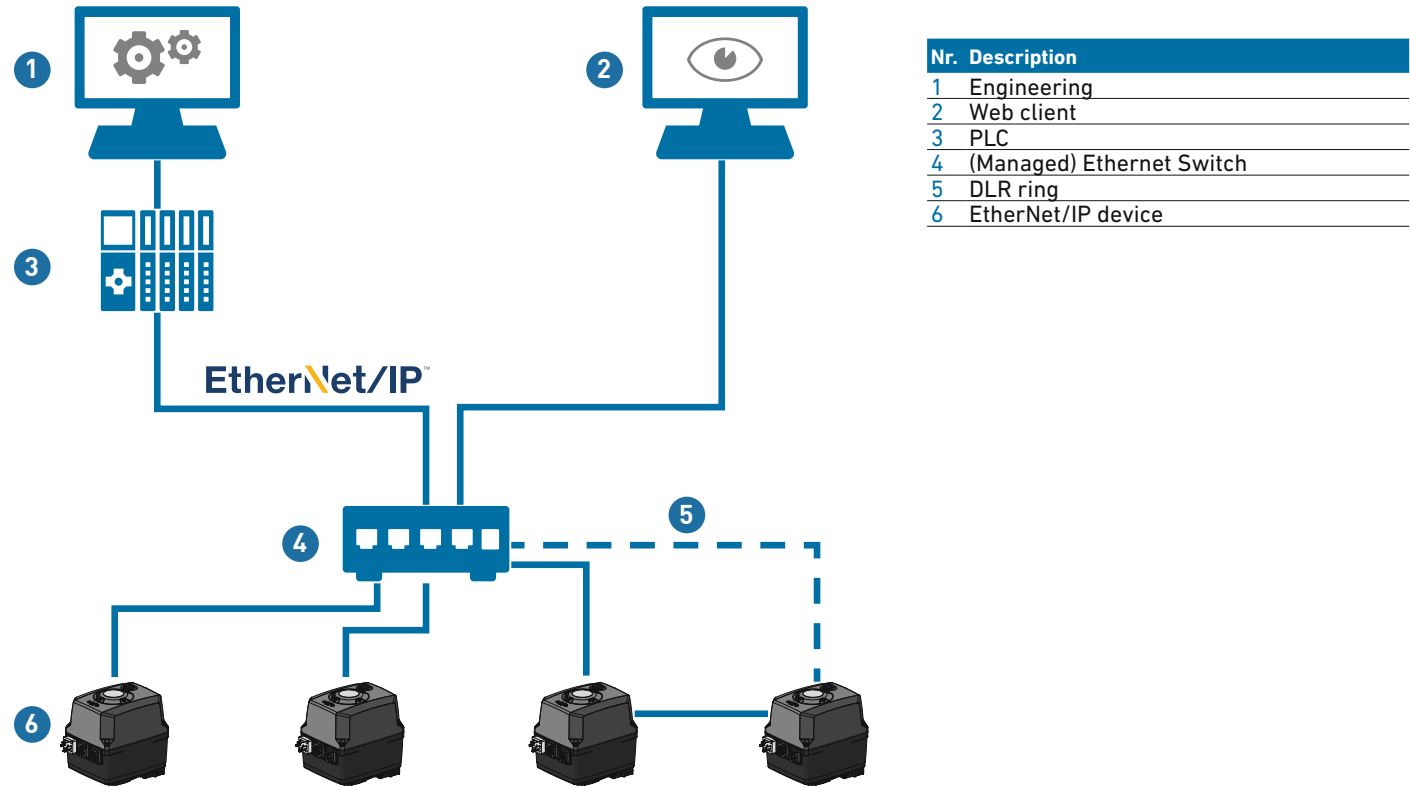
Details on the group accounts can be found in chapter „Technical data“.

# 4 Prerequisites / Hardware

## 4.1 Network topology

In general, an EtherNet/IP network topology consists of the following components:

- Scanner – programmable logic controller (PLC) including its engineering software
- The PLC is connected to the field level via a switched network using Industrial Ethernet switches, preferable managed switches.
- Adapter – the EtherNet/IP field devices such as the Electric Actuator EA25-250 are connected in
  - A star (point-to-point connection to the switch) or
  - In a line (using the second Ethernet port of the device)
- It is possible to set-up a redundancy system using the Device Level Ring (DLR) which supports continuous communication if a device in the line fails or a cable break in the line occurs.
- The embedded web server of the GF Ethernet-enabled devices is accessible via the Ethernet network with a web client and the IP address of the Ethernet device. Alternatively the web server is also accessible via one of the two Ethernet ports directly at the device. For more details see chapter «Embedded Web Server».



### 4.2 Cables and connectors

The cable for EtherNet/IP communication is defined in ANSI/TIA/EIA-568-B.2 where CAT 5e is recommended as minimum cable category.

The industrial Ethernet cable contains two shielded twisted pairs:

- 1 pair for data transmission (TX+ and TX-)
- 1 pair for data reception (RX+ and RX-)

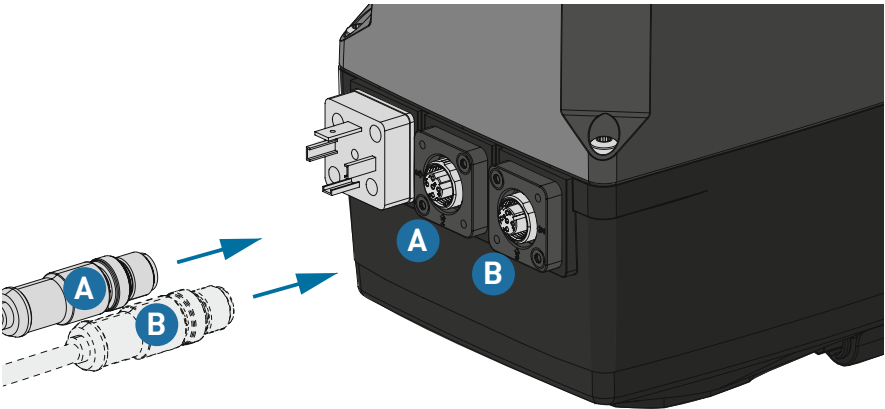
Pair Assignment	Signal Name	2 Pair
Pair 1	TX+	White-orange
	TX-	Orange
Pair 2	RX+	White-green
	RX-	Green

The connection to the Electric Actuator EA25-250 can be realized via:

- Cable glands with internal wiring to the Ethernet accessory board using RJ45 connectors
- M12 D-coded connectors with the optional M12 accessory board

Pin	Assignment	Plug image
1	Transmit +	
2	Receive +	
3	Transmit -	
4	Receive -	

The Electric Actuator EA25-250 provides two Ethernet ports. Port A is the connection to the control unit. The optional Port B can be used as connection to further actuators (line topology with optional DLR redundancy) or as local access to the embedded web server.



## 5 EtherNet/IP device integration to PLC via device driver EDS

The integration of an EtherNet/IP device to a PLC works via the dedicated device driver „Electronic Data Sheet“ (EDS). The EDS consists of a device description defining supported input data, output data, and configuration data with the respective data format.

The EDS file can be accessed via:

- The embedded device web server (Menu “Download” > “EDS File”)
- Official ODVA product page: <https://marketplace.odva.org/products/2672-electrical-actuator-ea25-250-gen-1>
- <https://www.gfps.com/is-software>

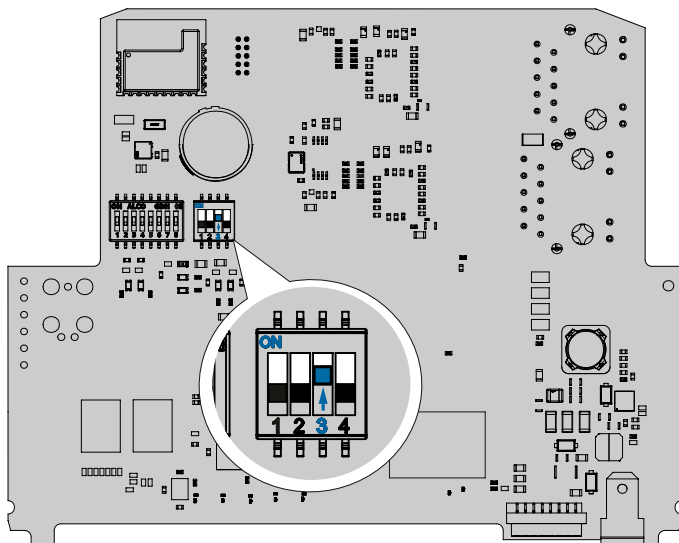
## 6 IP address assignment

Each EtherNet/IP device in the network needs an unique IP address.

The IP address can be changed via following possibilities:

- Automatic assignment via DHCP server in the network (default)
- Static assignment via web server or IP addressing tool

For maintenance or service purposes, it is possible to activate the DIP switch 3 on the Ethernet accessory board to assign the GF default IP address (192.168.1.111) temporarily. In this case, the device is not able to operate.





## 7 Commissioning and Operation

The EtherNet/IP communication between the scanner (typically a PLC) and the adapter (I/O device) is differentiated in:

- Class 1 / implicit messaging: time critical I/O data which is transmitted in a defined Request Packet Interval via UDP.  
RPI (Requested Packet Interval) refers to the time interval at which a device expects to receive / to send cyclic data.  
The default RPI value of the electric actuator is set to 80 ms but can be adjusted to the individual needs of a system.  
Important note: The scan time of a PLC routine shall be faster than the RPI of each component that is part of that routine. Otherwise, unexpected errors might occur due to synchronization issues.  
Proposed rule of thumb:  $\text{max. scan time} * 2 = \text{RPI}$
- Class 3 / explicit messaging: not time critical read/write parameter access with guaranteed delivery via TCP/IP (configuration and diagnostic details)

### 7.1 Implicit messaging

#### 7.1.1 Fixed Input Assembly - Data Block in Bytes: 24

Attribute	Class	Instance	ID	ByteOffset	Bytes
ActualPosition	103	2	1	0	2
NamurStatus	103	2	2	2	1
EaType	102	3	1	3	1
EaVoltage	102	3	2	4	1
LimitSwitchState	102	3	3	5	1
ActuatorMoving	102	3	4	6	1
TeachinActiv	102	3	5	7	1
ReadyToOperateState	102	3	6	8	1
Current	102	3	7	10	2
TemperatureCelsius	102	3	8	12	2
TemperatureFahrenheit	102	3	9	14	2
Cycles	102	3	10	16	4
Errorflags	102	3	11	20	4

Attribute	Description	Type	Min	Max	Default	Unit	List value
ActualPosition	The actual position shows the valve position as a percentage value	USINT	0	100	0	%	-
NamurStatus	The NAMUR NE107 status displays the device status	Enum	0	16	1	-	0: Diagnostic Passive 1: Diagnostic Active 2: Maintenance Required 4: Out of Specification 8: Function Check 16: Failure
EaType	Information about electric actuator type variant. Does not change during normal operation	USINT	0	14	-	-	0: EA25 1: EA45 2: EA120 3: EA250 8: EAMT25 9: EAMT50
EaVoltage	Information about electric actuator voltage variant. Does not change during normal operation	USINT	0	1	-	-	0: 24 VAC / VDC 1: 230 VAC
LimitSwitchState	Information about actuators final positions. Indicates weather an endpoint is reached (+/- 2%)	USINT	0	4	-	-	0: Undefined 1: Close 2: Open 4: Middle
ActuatorMoving	Indicates actuator movement	USINT	0	1	0	-	0: Actuator is not moving 1: Actuator is moving
TeachinActiv	Indicates teaching state. Note: During teaching the actuator is not ready to operate	USINT	0	1	0	-	0: Teaching is not active 1: Teaching is active
ReadyToOperateState	Indicates actuator is ready for operation	USINT	0	1	1	-	0: Actuator not ready to operate 1: Actuator is ready to operate
Current	The current shows the absolute value of motor current in milliamps	UINT	0	32767	0	mA	-
TemperatureCelsius	Temperature in ° Celsius measured on EA-Baseboard	INT	-100	100	-	°C	-
Temperature-Fahrenheit	Temperature in ° Fahrenheit measured on EA-Baseboard	INT	-148	212	-	°F	-
Cycles	The cycles show the absolute cycles of the EA	UDINT	0	2147483646	0	-	-

## Errorflags

0 means no error/warning asserted.

Else:

Bit	Value	Description	EA behavior	Root causes and remedy	Seven segment display
0	1	Undervoltage	none	Check power supply.	U
1	2	Over temperature	stops	Limit of EA electronic temperature exceeded, e.g. by too high torque, too many peaks, changing valve conditions.	O
2	4	Max. positioning time exceeded	stops	Cycle time of last movement exceeded configured cycle time monitoring value. Possible root cause: high torque by changing valve conditions. Check also values for cycle time extension and cycle time monitoring.	S
3	8	Heating defect	normal operation	Be careful about condensation, defect of electronics or device fail due to very cold temperatures. Consider to replace electric actuator soon.	H
4	16	Position learn required	none	No end positions configured. Teach end positions.	E
5	32	Position out of range	normal operation	Actual position out of configured end positions. Might occur during manual actuation via hand wheel.	P
6	64	Manual actuation detected	none	Emergency override via manual actuation detected.	E
7	128	No reply of accessory card	none	No communication between accessory card and baseboard of electric actuator.	S
8	256	Powerfail board active	normal operation	Fail-safe unit is active due to power loss. Check power supply.	
9	512	Powerfail accu warning	normal operation	Battery of fail-safe unit below specified limit. Will be charged if power supply is available.	L
10	1024	Powerfail accu error	normal operation	Fail-safe unit has an major error and won't work in case of power loss. Exchange fail-safe unit.	A
11	2048	Watchdog recovery	none	Ethernet communication between PLC and device is interrupted. Check Ethernet communication (e.g. cables, device in between, etc.).	
12	4096	Motor current overflow	stops	Motor current during last movement exceeded configured limit. Possible root cause: high torque by changing valve conditions. Check also values for motor current monitoring.	I
13	8192	Motor driver overload	stops	Overload of motor driver inside electric actuator. Please contact GF service.	O

Note: In case of multiple parallel diagnostic events, the absolute value of the error flag parameter is summed up and might lead to misleading interpretation. To ensure correct interpretation of the error flags, the single bits have to be analyzed. Alternatively, the diagnostic events in the embedded web server visualizes detailed information.

### 7.1.2 Fixed Output Assembly - Data Block in Bytes: 3

Attribute	Class	Instance	ID	ByteOffset	Bytes
PositionSetpoint	103	2	3	0	1
ControlByte	102	3	12	1	1
AckReset	102	3	13	2	1

Attribute	Description	Type	Min	Max	Default	Unit	List value
PositionSetpoint	The PositionSetpoint is active, if positioner mode is enabled, see ControlByte.	USINT	0	100	-	%	0: closed 100: open
ControlByte	Control of the Electric Actuator	ENUM	0	16	0	-	0: Stop 1: Close 2: Open 4: Middle 16: Positioner Mode
AckReset	Possibility to acknowledge error and reset cycle counter	ENUM	0	2	0	-	0: No Acknowledge 1: Error Acknowledge 2: Reset Cycle Counter

## 7.2 Configuration Assembly

### 7.2.1 Data Block in Bytes: 12

Attribute	Class	Instance	ID	ByteOffset	Bytes
CurrentMonitoring	102	3	14	0	1
CycleTimeExtension	102	3	15	1	1
CycleTimeMonitoring	102	3	16	2	1
ActionOnSignalLoss	102	3	17	3	1
WebserverEnabled	117	6	1	4	1
CommissioningModeActive	117	6	2	5	1
TftpSwUpdateEnabled	117	6	3	6	1
EnableConnectionWatchdog	116	7	15	8	1
ConnectionWatchdogTimeoutMs	116	7	16	10	2

**CurrentMonitoring**

Description: The current monitoring function monitors the motor current. If the motor current is higher than the pre-set value, an error is reported and the actuator will remain in place.

Type: Enum

Min: 0

Max: 9

Default: 9

Note: This setting is dependent on EA-type - same as setting on monitoring board.

All values in mA

Value	EA25	EA45	EA120	EA250
0	25	25	50	50
1	100	300	300	400
2	150	350	400	500
3	200	400	500	600
4	250	450	600	700
5	300	500	700	800
6	400	600	800	1000
7	500	700	900	1200
8	600	900	1000	1500
9	700	1100	1200	1800

**CycleTimeExtension**

Description: The cycle time extension extends the cycle time of the electric actuator. To do this, the actuator is moved continuously into the end positions (OPEN or CLOSE). For the corresponding value please refer to the table below. These values are valid for 90° actuation.

Type: Enum

Min: 0

Max: 9

Default: 0

Note: This setting is dependent on EA-type

All values in [seconds].

Value	EA25	EA45	EA120	EA250
0	7	7	25	27
1	10	10	28	35
2	13	13	32	40
3	15	15	38	45
4	18	18	42	50
5	20	20	48	55
6	23	23	52	60
7	25	25	58	65
8	28	28	62	70
9	30	30	67	75

**CycleTimeMonitoring**

Description: The cycle time monitoring monitors the duration of a preset cycle time of the electric actuator. As soon as the cycle exceeds the preset time, an error is reported. For the corresponding value please refer to the table below. These values are valid for 90° actuation.

Type: Enum

Min: 0

Max: 9

Default: 4

Note: This setting is dependent on EA-type - same as setting on monitoring board.

All values in [seconds]

Value	EA25	EA45	EA120	EA250
0	8	7	20	30
1	11	10	30	40
2	14	13	35	40
3	17	16	40	45
4	20	19	50	55
5	23	22	50	55
6	26	25	55	60
7	29	28	60	65
8	32	31	65	70
9	36	34	75	75

**WebserverEnabled**

Description: Decides whether the Webserver is enabled, same functionality as Hardware DIP switch number 1.

Type: Enum

Min: 0

Max: 1

Default: 1

Note: The Hardware DIP-Switch is dominant. If the Hardware DIP disables this function has no influence.

Value	Webserver State
0	Disabled
1	Enabled

**CommissioningModeActive**

Description: Decides whether the Commissioning Mode is enabled, same functionality as Hardware DIP switch number 2.

Type: Enum

Min: 0

Max: 1

Default: 0

Note: The Hardware DIP-Switch is dominant. If the Hardware DIP enables this function has no influence.

Value	Commissioning Mode State
0	Inactive
1	Active

**TftpSwUpdateEnabled**

Description: Decides whether the TFTP server is enabled, same functionality as Hardware DIP switch number 3.

Type: Enum

Min: 0

Max: 1

Default: 0

Note: The Hardware DIP-Switch is dominant. If the Hardware DIP disables this function the setting has no influence.

Value	TFTP State
0	Disabled
1	Enabled

See chapter "Security Update via TFTP" for further details.

**Watchdog and resulting Action**

Via the following 3 parameters, it can be configured what shall happen if the Ethernet communication between Scanner and Adapter is interrupted for a configured time.

Steps to configure the ActionOnSignalLoss:

1. Set value of EnableConnectionWatchdog to 1.
2. Configure connection timeout by changing the value of ConnectionWatchdogTimeoutMs to individual needs.
3. Define valve behavior in case of communication loss by changing the value of ActionOnSignalLoss to 0 (Stop), 1 (Close) or 2 (Open).
4. Power-cycle of Electric Actuator.
5. Test intended behavior.

**EnableConnectionWatchdog**

Description: If watchdog is enabled, a message from the scanner is expected within milliseconds specified in „ConnectionWatchdogTimeout“, see below. If the device is not addressed with telegrams from the scanner for this time, the watchdog triggers and the signal loss action is executed (see ActionOnSignalLoss).

Type: Enum

Min: 0

Max: 1

Default: 0

Value	Watchdog State
0	Disabled
1	Enabled

**ConnectionWatchdogTimeoutMs**

Description: ConnectionWatchdogTimeout defines the signal loss watchdog time in milliseconds.

Type: UINT

Min: 0

Max: 32767

Default: 2500

Note: Use together with enable/disable (see EnableConnectionWatchdog).

**ActionOnSignalLoss**

Description: Action on loss of signal (setup of interrupted Ethernet communication).

Type: Enum

Min: 0

Max: 3

Default: 0

Note: This command is stored nonvolatile. This means: After changing this attribute, a Power-On-Reset of the actuator is required before these changes take effect.

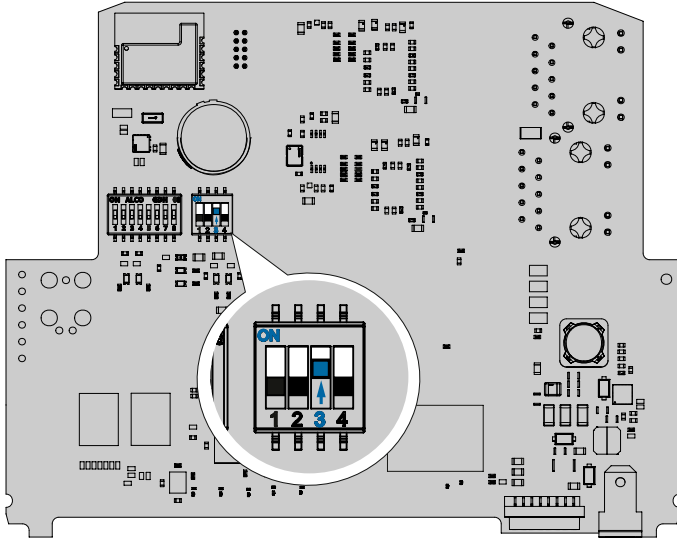
Value	ActionOnSignalLoss
0	Stop
1	Close
2	Open
3	Reserved

## 8 Embedded Web Server

### 8.1 Pre-requisites

To connect to the embedded web server, make sure that the following pre-requisites are fulfilled:

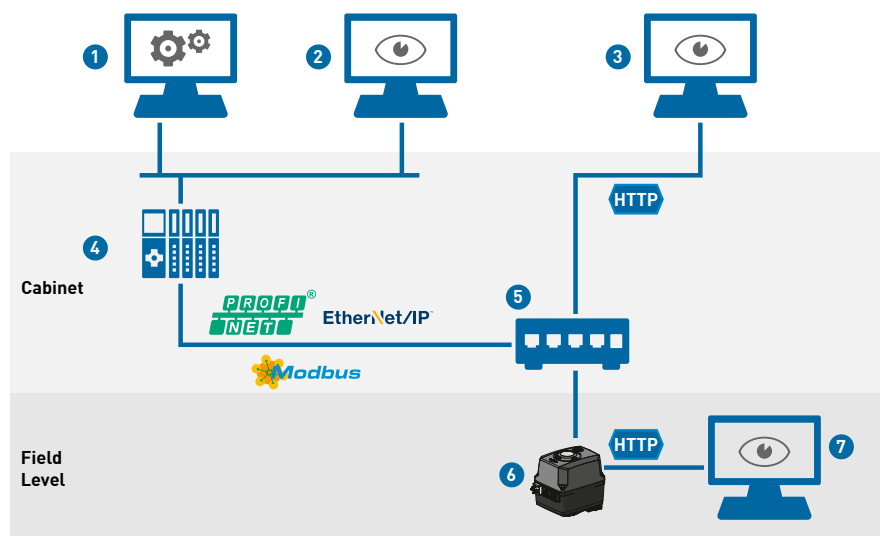
1. DIP switch 1 on Ethernet board is inactive (DIP Switch down)



2. Web server is not deactivated via software (see chapter "Configuration Assembly")
3. Network settings  
The network settings of the device (IP address, subnet mask) need to be known in order to establish a connection to the embedded web server.



## 4. Connection to the device



Nr.	Description
1	Engineering System (PLC software)
2	Operator/Maintenance systems (SCADA, HMI, etc.)
3	Web Server (locally connected to switch)
4	PLC
5	Managed Ethernet Switch
6	EtherNet/IP device
7	Web Server (connected to 2nd port of device)

## 1. Locally

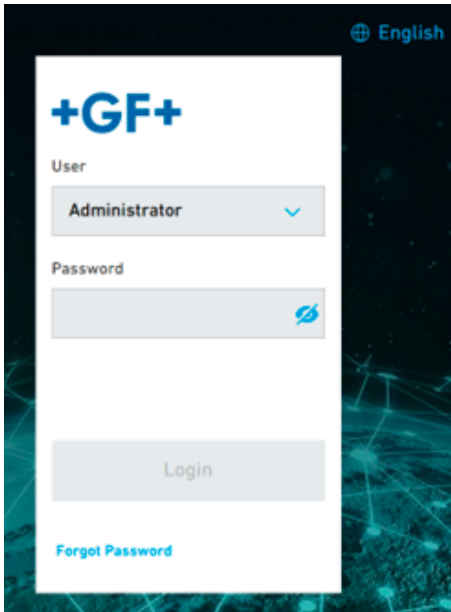
- Only possible if one of the two Ethernet ports of the Electric Actuator is free
- Connect the operating tool (e.g. laptop) to one of the free ports of the device using an Industrial Ethernet cable
- Ensure that the network settings of the operating tool match to the network settings of the device (same IP address range and matching subnet mask)
- Open a web browser and enter the IP address of the device
- Continue with the operation of the web server as described in chapter "Web Server User Interface"

## 2. Via network

- Ensure that the network settings of the operating tool match to the network settings of the device (same IP address range and matching subnet mask)
- Open a web browser and enter the IP address of the device
- Continue with the operation of the web server as described in chapter "Web Server User Interface"

## 8.2 Web Server User Interface

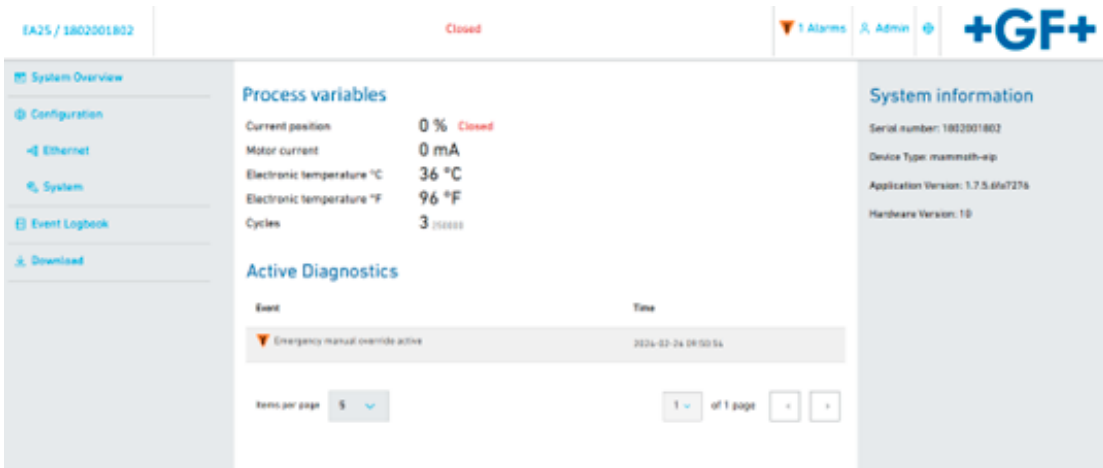
### 8.2.1 Login



- The default password for the first login is the same as the name of the selected user role:  
"Operator" for role "Operator"  
"Administrator" for role "Administrator"
- The system enforces the change of the default password after the first login.
- In case of forgotten passwords, a factory reset is required

### 8.2.2 General structure of UI

The user interface is divided into the following areas



#### 1. Header

Consists of most important device information: Device name, current valve position, global device status (NE107), Logout, Language selection

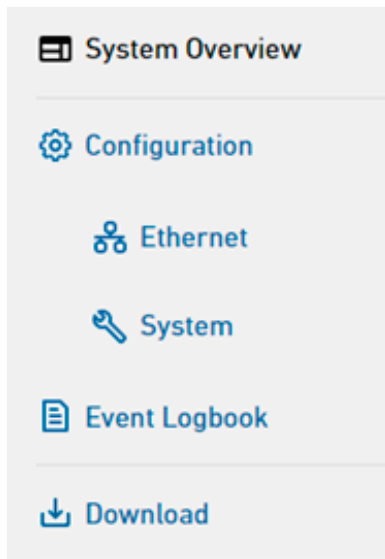
#### 2. Menu navigation

Provides the possibility to browse through the menu to get access to parameters and functionalities

#### 3. Content area

Shows the content of the selected menu, see details in chapter "Menus and Functionalities"

### 8.2.3 Menus and Functionalities



#### System overview

This menu provides a general overview of most important information:

- Process variables (e.g. valve position, motor current)
- Identification information about the device (e.g. serial number)
- Current diagnostics (all currently active diagnostic events)

#### Configuration

These menus provide the configuration of the device:

- General device settings, e.g. Action on signal loss, motor current monitoring
- Ethernet settings, e.g. IP address
- System settings, e.g. session timeout, reset, software update

#### Event logbook

This menu provides an historical overview of events (general system events, diagnostic events, parameter changes). Maximum 5000 events are stored within the logbook. After-wards, the oldest entries are deleted.

Note: In the menu „Download“, it is possible to download the current state of the event log-book to a PDF file.

#### Download

This menu provides the possibility to download the following files from the device:

- Device Report: generates a PDF report with all device information
- Event logbook: generates a PDF report with the latest 5000 historical events
- EDS: provides the device driver for PLC integration
- User manual: provides the user manual of the Electric Actuator

## 9 Security Update via TFTP

To update the device, use the files located in the GF download center:

- <https://www.gfps.com/is-software>

### Precondition for the PC to execute the update:

- TFTP must be activated/available on the PC
- The PowerShell Execution Policy should be set to: "RemoteSigned"

### Steps to perform the software update

1. Disconnect the device from power
2. Activate the TFTP Enable Dip Switch No. 4
3. Power the device, the actuator will blink and signal ||| in the seven segment display
4. Open a Powershell Console and navigate to the Electrical Actuator Update Package
5. If the device is configured with the GF standard IP address (192.168.1.111) you can start the update script directly without further parameters
  - a. To configure the device temporarily with the standard IP, Dip switch 3 can be activated. A reboot of the device is required for the configuration to become effective.
  - b. It is possible to set an IP address, in case the device is configured to different IP address, therefore provide the parameter "-Ip XXX.XXX.XXX.XXX" to the script
6. The script will provide feedback similar to this output:

```
PS C:\Users\GeorgIloTLab\Downloads\TFTP_Update_Package_1.7.6.2bcbd4d> .\ElectricalActuatorStartUpdate.ps1
Transcript started, output file is .\log\update.log
Connecting to Device on IP: 192.168.1.111
Detected Variant is XXX
Starting Update
Update Finished successfully
Transcript stopped, output file is C:\Users\GeorgIloTLab\Downloads\TFTP_Update_Package_1.7.6.2bcbd4d\log\update.log
```

7. If the output of the script is "Update Finished successfully" all steps succeeded.
  - a. In case of any errors please check the files in the log folder for questions to the support
8. Disable Dip Switch 3 and 4 and reboot the device.

## 10 Troubleshooting

### 10.1 Troubleshooting of Ethernet board

In case of any issues with the Ethernet communication, check the LED's on the Ethernet electronic board according to the table below.

Green LED (Activity)	Red LED (Failure)	Blue LED (Signaling)	Description
-	-	-	No IP address assigned
Blinking	-	-	IP address assigned but no connection
Steady on	-	-	Connection established
-	Blinking	-	Connection timeout (Ethernet communication interrupted)
-	Steady on	-	Address conflict detected (duplicated IP)
-	Steady on	Blinking	Contact service

### 10.2 Troubleshooting if no web server access possible

1. Check physical set-up: PC / laptop needs to be connected to same Ethernet network as electric actuator.
2. Check if correct IP address of electric actuator is used.
3. Make sure that web server was not disabled via DIP switch or via EtherNet/IP.
4. Check IP address of PC / laptop network adapter -> needs to be in the same IP address range.
5. Ping electric actuator by Windows command prompt.
6. Clear web browser cache.

## 11 Technical data

Link to ODVA Certificate:

<https://marketplace.odva.org/organizations/2934-georg-fischer-piping-systems-ltd>

### Security

- Security level: SL1
- <https://www.gfps.com/is-software>

### Protocol data

- Number of connections: 2
- EIP version: CT19.1
- Product Code: 234
- Vendor Code: 1685
- Product Profile: Generic Device (keyable)

### DLR Class

- Revision = 3;
- Object\_Name = «Device Level Ring Object»;
- Object\_Class\_Code = 0x47;
- MaxInst = 1;
- Number\_Of\_Static\_Instances = 1;
- Max\_Number\_Of\_Dynamic\_Instances = 0;
- Ring\_Supervisor\_Capable = No;

### Ethernet Link Class

- Revision = 4;
- Object\_Name = «Ethernet Link Object»;
- Object\_Class\_Code = 0xF6;
- MaxInst = 2;
- Number\_Of\_Static\_Instances = 2;
- Max\_Number\_Of\_Dynamic\_Instances = 0;
- InterfaceLabel1 = «port-001»;
- InterfaceLabel2 = «port-002»;

### QoS Class

- Revision = 1;
- Object\_Name = «QoS Object»;
- Object\_Class\_Code = 0x48;
- MaxInst = 1;
- Number\_Of\_Static\_Instances = 1;
- Max\_Number\_Of\_Dynamic\_Instances = 0;

## LLDP Management Class

- Revision = 1;
- Object\_Name = «LLDP Management Object»;
- Object\_Class\_Code = 0x109;
- MaxInst = 1;
- Number\_Of\_Static\_Instances = 1;
- Max\_Number\_Of\_Dynamic\_Instances = 0;

## LLDP Data Table Class

- Revision = 1;
- Object\_Name = «LLDP Data Table Object»;
- Object\_Class\_Code = 0x10A;
- MaxInst = 1;
- Number\_Of\_Static\_Instances = 1;
- Max\_Number\_Of\_Dynamic\_Instances = 0;

## Web server

- Web server port = 80
- HTTP = V1.1
- Number of sessions = 1
- Session Timeout = 2 min.
- Accounts: Group Accounts
- Encryption Support: No
- Supported / recommended web browsers: Firefox, Edge, Opera (latest versions)

## 12 Further references

- ODVA Pub 148: EtherNet/IP Media Planning & Installation Manual
- ODVA Pub 35: EtherNet/IP Network Infrastructure
- ODVA Pub 269: Securing EtherNet/IP Networks

## Local support around the world

Visit our webpage to get in touch with your local specialist:  
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