

## Remote control with the IEC 60870-5 standard protocol

Remote control requires devices from different manufacturers to communicate with each other and exchange data. Data traffic is defined by the standardized remote control protocol IEC 60870-5-101 for transmission via serial interfaces and modem and by IEC 60870-5-104 for TCP/IP-networks. The FP Web-Server supports both methods of data transmission, making it possible to integrate our programmable logic controllers (PLCs) into remote stations (RTU) or as a gateway between various network structures/protocols and manufacturers.

As an RTU (*Remote Terminal Unit*), the PLC can be easily configured using a Web-based user interface, without requiring programming skills. In addition to the typical station parameters such as link address, AS-DU (Application Service Data Unit), etc., using a drop-down menu you can assign each digital or analog I/O the desired IEC data type, IOA (Information Object Address) as well as the parameters required by each data type. Moreover, the Web-based user interface offers an exhaustive diagnostic page to help commission your project.



The IEC-Communicator combines the advantages of a PLC with safe data transmission with the standardized remote control protocol for connecting main stations and process control systems.

The FP Web-Server has a serial port for data exchange and modem transfer (IEC 60870-5-101), as well as an External port for TTCP/IP connections (IEC 60870-5-104). With the help of the GPRS terminal, the FP Web-Server can also communicate via GPRS.

The multi-functional Ethernet unit supports many typical network services such as e-mail, time synchronization, HTML display, Modbus-TCP, SNMP and FTP together with IEC 60870 communication.

The unit is as compact and small as an FP-Sigma and is designed for DIN-rail mounting. Just like the CPU, the unit needs a 24V DC power supply.

### Use the IEC60870 Communicator for applications

such as:

- **Outstations** for controlling remote tasks performed for example by pumps, feeders, valves, and controllers
- **Gateway function** for connecting to peripheral PLCs and devices, e.g. via SEAB 1-F, PROFIBUS DP, Modbus, M-Bus, whenever they fail to support the standard protocol or when used in combination with the GPRS-LinkManager (see E-036)
- **Data logging** of measurement data and counter values for transmission by modem or via TCP/IP (with FP Web Expansion)
- **Remote control** of devices connected to the station, for example pumps and valves; transmission of set values
- **Remote request** of current status of all inputs and sensors
- **Diagnostics** via freely configurable HTML pages

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Main settings

Expert IEC60870 settings

Module 2 setting - input signals: Analog unit FP0-A80

IEC type: TF\_1 (36)

IOA: 13200

Delay min:[s]: 1

Delay max:[s]: 3600

Input mode: 0 - 20mA (4 - 20mA sensor)

Scaled value 0%: 0

Scaled value 100%: 1000

Limit min.: 0

Limit max.: 1010

Delta event: 10

The limits and the delta event refers to the scaled value.

Duplicate from previous record

Submit

Input no.	IEC type	IOA	Parameter
0	M_ME_TF_1	13200	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
1	M_ME_NC_1	13201	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
2	M_ME_NC_1	13202	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
3	M_ME_NC_1	13203	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
4	M_ME_NC_1	13204	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
5	M_ME_NC_1	13205	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
6	M_ME_NC_1	13206	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0
7	M_ME_NC_1	13207	Delay min:1s, Delay max:3600s, Limit min.:0.0, Limit max.:1010.0 0 - 20mA (4 - 20mA sensor), Scaled value 0%:0.0, Scaled value 100%:1000.0, Delta event:10.0

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Using the Web-based user interface, you can select the following parameters easily and quickly:

- IEC link address, IEC-ASDU address, IEC-IOA
- Cyclic transmission of values to the central station
- Assigning inputs and outputs to the respective IEC data types
- Configuring alarms and messages with a delay
- Assigning the I/Os as measurement, target or counter values to the respective IEC data types
- Measurement values can be transmitted cyclically or when triggered by delta events
- Scaling of analog values
- In addition to the configurable inputs and outputs, a user range can be defined in the same way – ideal for custom solutions

**Order information:**

Article and description	Part no.
<b>FP Web-Server:</b> Unit for communicating via RS232 or Ethernet-TCP/IP	<b>FPWEB2</b>
<b>Connection cable</b> FP0R/FP-X/FP-Sigma/FP2SH TOOL port (L type) <-> FPWEB2/GT-RS232 (loose wire), 2m	<b>AGT8192D</b>
<b>FPWEB Configurator Tool Ver. 2</b> Windows software for FPWEB and FPWEBIEC	<b>FPWEBTOOL2D</b>
<b>FP Web Expansion:</b> Expansion of the Web-Server with USB and RS485 ports and an SD card for data logging	<b>FPWEBEXP</b>
<b>Note on compatibility:</b>	
The PLC types FP0R, FP-X, FP-Sigma, FP2SH and FP7 are suitable for the user library. The PLC is required for pre-processing the IEC 60870 telegrams. The selection of the PLC type determines the storage depth for buffering in offline mode.	
<b>Control FPWIN Pro V7 programming software</b> for all PLCs	<b>FPWINPRO7S</b>