Panasonic

PROGRAMMABLE CONTROLLER

FP Web-Server

Hardware / Configurator

BEFORE BEGINNING

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Please direct support matters and technical questions to your local Panasonic representative.

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- When physical defects are due to different usage/treatment of the product other than described in the manual.
- When physical defects are due to defective equipment other than the distributed product.
- When physical defects are due to modifications/repairs by someone other than PEWEU.
- When physical defects are due to natural disasters.

Important symbols

One or more of the following symbols may be used in this documentation:

DANGER!

The warning triangle indicates especially important safety instructions. If they are not adhered to, the results could be fatal or critical injury.

CAUTION

Indicates that you should proceed with caution. Failure to do so may result in injury or significant damage to instruments or their contents, e.g. data.

NOTE

Contains important additional information.

EXAMPLE

Contains an illustrative example of the previous text section.

PROCEDURE

Indicates that a step-by-step procedure follows.

REFERENCE

Indicates where you can find additional information on the subject at hand.

Table of Contents

Chapter 1

Getting started

1.1 BEFORE YOU START

Please read the following notes on HTML. It will make working with the FP Web-Server easier for you:

Make sure that you have worked through the First Steps (see p. 37) before you try out the HTML functions of the FP Web-Server.

In order to use HTML you do not have to be able to tag or program HTML. Various software is at your disposal:

- Word, Frontpage (delivered with MS Office) et.al. can serve as editors for creating HTML files.
- The created HTML file will be saved on the FP Web-Server with the help of the Configurator.
- A browser (e.g. Internet Explorer) is used to display the .htm file.

These software tools provide the logical markup (i.e. text parts are automatically adjusted to any screen format without using a lot of memory) and easy linking that define HTML.

Please refer to the respective software company for questions on software not provided by Panasonic mentioned in this manual (or on the software you chose to work with HTML).

There are two ways to create HTML files:

- **Simple:** You use editors that translate data into HTML automatically. When using these editors, you need no special knowledge about HTML.
- **Advanced:** You create HTML files directly. You need to have knowledge about HTML.

For the FP Web-Server you need to have basic knowledge on how to use HTML.

In case you lack knowledge about HTML, Panasonic provides you with a brief introduction in the section First HTML Page Including PLC Data. In addition, we have inserted examples on HTML (see "Description of the HTML examples" on p. 183) on the CD (supplied with the FP Web-Server). You can install and modify them easily without knowledge of HTML.

1.2 Product numbers and versions

Item	Product name	Part number
FP Web-Server (Hardware)	FP WEB-SERVER UNIT	FP-WEB (Japan: AFP0610)
	FP WEB-SERVER2 UNIT	FP-WEB2 (Japan: AFP0611)
FP Web Expansion (Hardware)	FP Web Expansion Unit	FPWEBEXP
Configurator Software	FP Web Configurator Tool Ver.2.C0	FPWEBTOOL2 (Japan: AFPS30520-D)
	FP Web Configurator Tool Ver.2.C0 Upgrade	FPWEBTOOLR2 (Japan: AFPS35520-D)
Software for creating HTML visualization for FP-WEB2	FP Web Designer	AFPS36510

You can retrieve information on the following components by clicking on the system icon (see p. 54) in the upper, left-hand corner and selecting "About Configurator...":

- Control FP Web Configurator Tool
- Serial number
- Name of owner and organization

The hardware version (see p. 21) is printed on the type plate of the FP Web-Server.

1.3 System requirements

The FP Web Configurator Tool has the following system requirements:

- MS Windows 7/Vista/NT/XP/2000 (or 95/98/ME)
- Hard disk with at least 27MB free disk space
- Color or monochrome monitor
- Standard Internet browser (e.g. Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Apple Safari, Opera) to display HTML pages
- The user needs administrator rights on his computer to perform the following actions:
  - Install or update the FP Web Configurator Tool
  - Define a default editor.

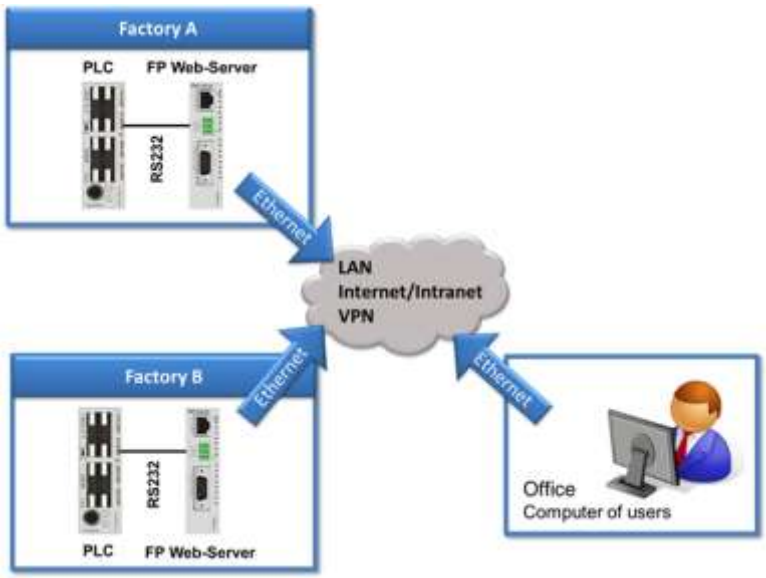
1.4 Advantages and functions of the FP Web-Server

The multifunctional FP Web-Server unit allows you to access FP Series PLCs via Ethernet networks (Intranet and Internet) for data exchange.

Access can be carried out by a computer and a standard browser, such as MS Internet Explorer Mozilla Firefox, Google Chrome, Apple Safari or Opera, by specifying the target unit's IP address, which can be changed. The HTML page can be generated with standard tools, such as Frontpage, Dreamviewer or MS Word (not supplied with the Configurator). Panasonic offers the FP Web Designer (Product Number: AFPS36510) for easily designing HTML pages without any knowledge of programming languages for HTML, PHP, Java or Javascript.

FP Web-Server advantages:

- Use standard browser, save Scada software
- Use existing Intranet, save wiring
- Representation of PLC data in HTML pages
- Value input and change of values in the PLC (set value, outputs, internal relays) via HTML pages.
- Password protection for access
- Email send function (alternatively via Internet dialup), e.g. for the alarm function (optionally with PLC data attachments)
- Remote programming: remote access via modem (via Dial-up Networking)
- Data transfer: process control system, PLC programming, telemetry, remote maintenance, monitored state function
- Interfacing RS232C serial data via Ethernet, i.e. two FP Web-Servers are used to send RS232C data via Ethernet
- Modem gateway functions to other PLCs equipped with an FP Web-Server



FP Web-Server functions:
The FP Web-Server works as an interface between a LAN or a WAN network (Internet/ Intranet) and all PLCs of the FP series. The following main features are supported:

RS232C/ Ethernet interface: (see p. 118)

- RS232C to Ethernet redirection/ conversion
- Programming and visualization tools access via Ethernet
- Optional: password protection and IP lock security
- Optional: second, full transparent port

Web-Server: (see p. 84)

- PLC data presented as HTML pages
- Access via standard Internet browser
- HTML entry field for PLC data exchange
- Optional: password protection
- Optional: PLC data display using Java applets
- PLC data delivery as XML files

Email: (see p. 60)

- PLC can send out an email
- PLC defined or pre-stored email text
- Email sending via LAN or Internet dialup
- Optionally with PLC data attachments

Modem/ Ethernet gateway: (see "Dial-in networking setup for computer/FP Web-Server" on p. 126)

- FP Web-Server can be dialed-up via modem for local or network access
- One remote gateway for multiple FP Web-Servers provided in a local Ethernet network
- Remote password handling

IEC60870 protocol (optional): (see p. 170)

- IEC60870-5-101 standard telecontrol communication protocol via serial interfaces
- IEC60870-5-104 standard telecontrol communication protocol via Ethernet
- Optionally with modem support

Network Time Server: (see p. 158)

- PLC real-time clock can be synchronized via NTP server

Modbus RTU/TCP functions: (see p. 162)

- Modbus RTU master/slave functionality
- Modbus-TCP client/server functionality
- Modbus RTU/TCP gateway
- MEWTOCOL/Modbus gateway

SNMPv1 agent: (see p. 178)

- The SNMP agent (see p. 178) feature allows any SNMP management system to exchange data with FP Web-Server devices via the Ethernet using SNMP version 1 protocol.

FTP client: (see p. 66)

- The FP Web-Server unit can be configured as an FTP client (see p. 66) for sending user-defined, current PLC data or logged data to a remote FTP server.

Data logger: (see p. 76)

- The FP Web-Server unit can log PLC data (see p. 76) and store it on the optional SD memory card or send it via FTP (see p. 66).

Secure data transmission and authentication: (see p. 72)

- The FP Web-Server unit can communicate via OpenVPN (see p. 72) to get an encrypted and secure data transmission and authentication.

The FP Web-Server comes in an FP0 housing and has the following interfaces: (see "Hardware description" on p. 19)

- RS232C interface which can be connected to the PLC (MEWTOCOL protocol)
- Ethernet 10/100BaseT interface for network connections using the TCP/ IP protocol
- 2nd RS232C interface for an optional modem or for full transparent Ethernet/ RS232C communication

The optional FP Web Expansion unit has the following functions:

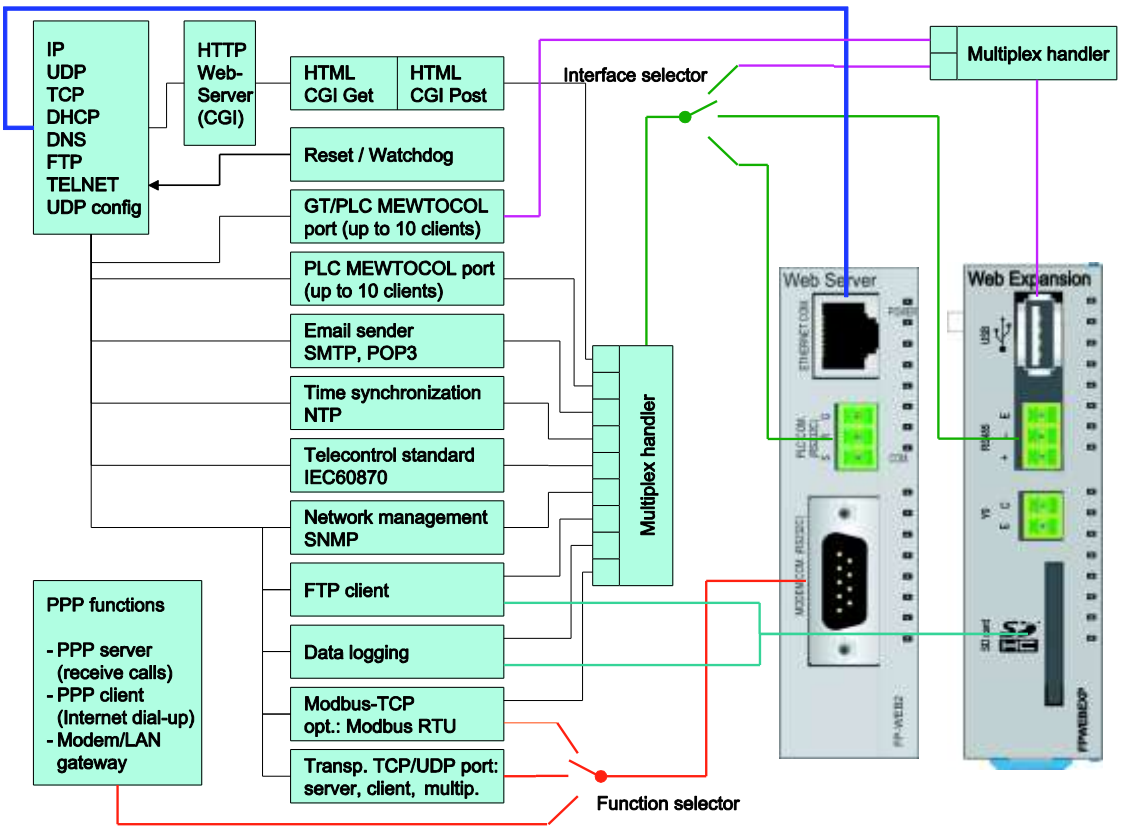
- USB 1.1 host port
- RS485 port
- Digital output
- SD memory card slot

Configurator software (see p. 49)

A Windows program is supplied to make the configuration and the setup of the FP Web-Server easy. This configuration program is called "Control FP Web Configurator Tool". It helps the user to quickly set up and change the following items, e.g.:

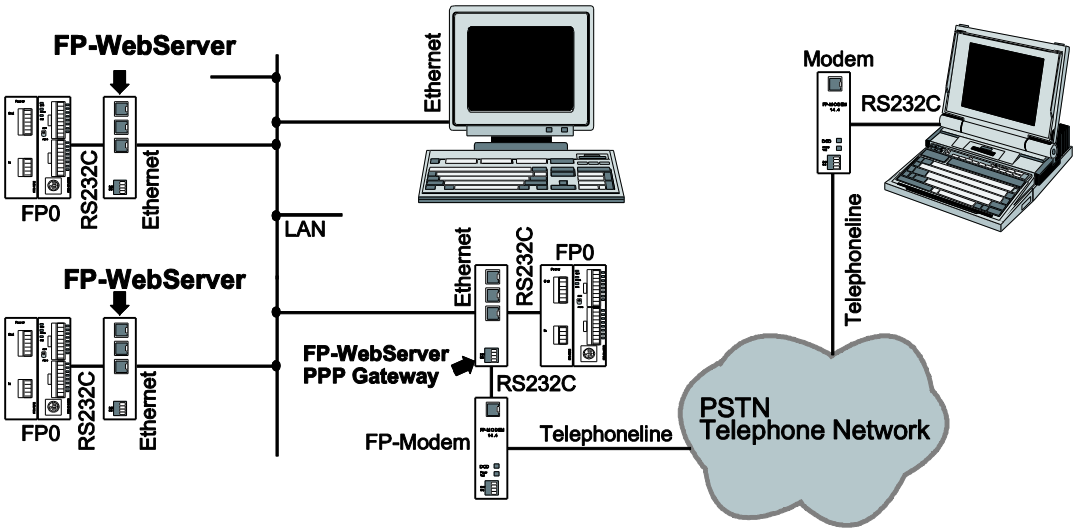
- Automatic integration of PLC data into HTML pages
- Preparation of pre-stored mail addresses and texts
- TCP/ IP address and parameter configuration (DHCP is also possible)
- Password and security setup

1.5 FP Web-Server block diagram



1.6 System sample network

Any combinations of the LAN and the dial-up functions are possible, e.g. an Ethernet network connecting several FP Web-Servers with one FP Web-Server set up as a gateway for the dial-up connections.



Chapter 2

Hardware description

2.1 The FP Web-Server unit

2.1.1 Introduction

ATTENTION !

Please read the safety instructions in important notes (see p. **25**) and also the section on mechanical installation (see p. **27**) carefully.

The FP Web-Server allows you to connect the Panasonic FP Series PLCs to an Ethernet Network (LAN).

The FP Web-Server works as an Interface between a LAN or a WAN network (Internet/ Intranet) and all PLCs of the FP Series.

The following main features are supported:

- RS232C/ Ethernet Interface (remote programming monitoring and visualization)
- Web-Server (http/https server supplies HTML pages with PLC data (see comments))
- Email (SMTP protocol)
- Modem/Ethernet gateway (PPP Server function)
- Modbus-TCP/RTU functions
- NTP time synchronization
- Optional: IEC60870
- SNMPv1 agent
- FTP client, FTP server
- Data logger (requires FP Web expansion unit)

A Windows program is supplied to make the configuration of the FP Web-Server easy (see comments).

See above for a more detailed overview (see p. 9) of the FP Web-Server functions. There you can also find a block diagram, a list of features and a brief description.

A data sheet can be found below which also lists the supported standards and protocols.

Comments:

- A standard HTML editor (not supplied with the FP Web-Server Configurator Tool) is needed to design HTML Web pages. HTML pages can easily be created with the FP Web Designer (product number: AFPS36510) without knowledge of HTML or any other programming language.
- A standard Internet browser, e.g. Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Apple Safari, Opera, is recommended for displaying the HTML pages.

2.1.2 Hardware version

The unit hardware model and version is printed on the type plate. Two different hardware models are available:

Model 1: "FP Web-Server" unit (FP-WEB)

The hardware version 1.2 (available since 2003) is identical to hardware version 1.1 except that the pin assignment of the 9-pin RS232C connector was optimized and the UL approval sign is printed on the unit label.

Hardware version 1.3 (available since the beginning of 2006) is identical to hardware version 1.2 but with the Panasonic logo and RoHS conformity.

Model 2: "FP Web-Server2" unit (FP-WEB2)

Version 1.0 of this new hardware model has been available since December 2006.

The following table presents a brief comparison of the two models.

	FP-WEB2	FP-WEB
Ethernet interface	100Mbps	10Mbps
Application memory	8MB Flash	0.5MB Flash
CPU speed	24 bits at 25MHz	16 bits at 20MHz

Hardware version 1.01 has improved PLL circuitry on the CPU for a better start-up behavior.

Hardware version 1.1 contains an additional right-side expansion connector to support the FP Web expansion unit .

Comment:

The FP Web Configurator Tool (Ver.2.3 and higher) can configure all available hardware types and versions.

2.1.3 FP Web-Server unit package

The FP Web-Server unit package of Panasonic contains:

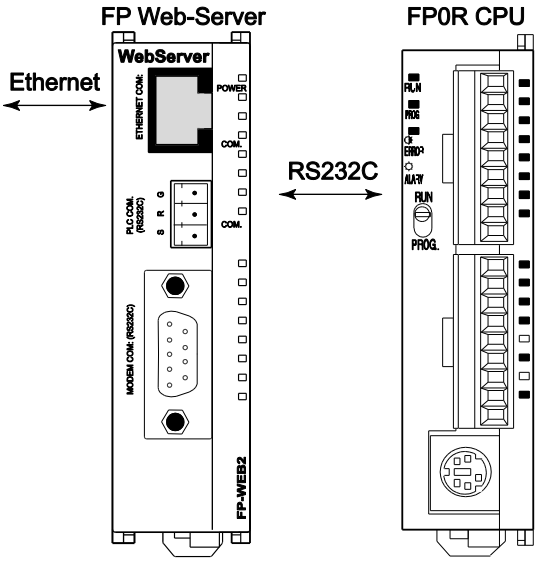
- one FP Web-Server unit
- a 24V DC power cable
- a leaflet providing installation instructions
- Phoenix 3-pin screw terminal

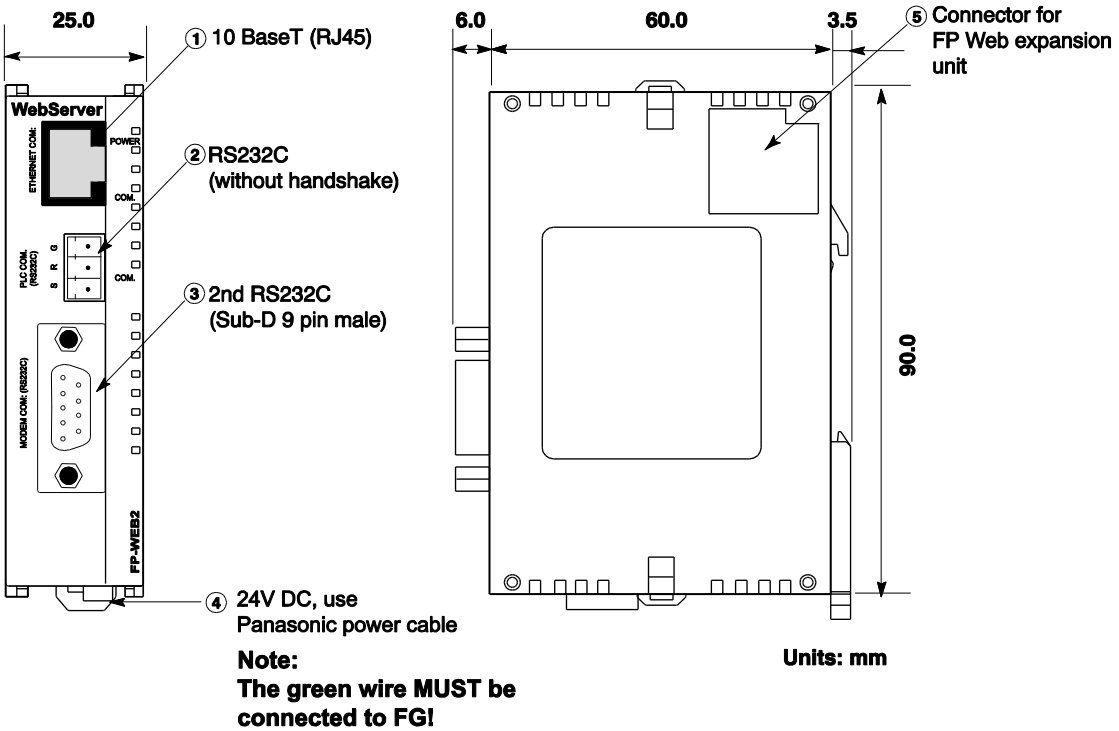
Comments:

- The FP Web-Server network will be configured via the Control FP Web Configurator Tool.
- The Control FP Web Configurator Tool can be purchased separately.
- For creating HTML pages a standard HTML editor (not supplied with the Configurator) is required.

2.1.4 Parts and functions

Below are two illustrations of the FP Web-Server's parts and their functions:





① **Ethernet (RJ45)**
(Ethernet 10-Base-T / 100-Base-Tx) use Standard Ethernet CAT.5

② **RS232C (without handshake)**
Screw terminal. Connects to the PLC.

③ **2nd RS232C (SUB-D 9 male)**
- Compatible to IBM PC serial port.
- Use standard serial computer cables.

Connects to modem (PPP), or
Transparent communication with 2nd PLC, computer, panel, etc.

④ **24V DC, use Panasonic power cable**
- brown = +24V DC
- blue = GND
- green = framing ground

⑤ **Connector for FP Web expansion unit**
16-pin expansion connector

◆NOTE

- **LEDs (see p. 187).**
- **The expansion connector is for the FP Web expansion unit only.**
- **FP0 expansion units are not supported and may damage the FP-WEB2 unit.**
- **Only FP-WEB2 units with hardware version greater than 1.1 are equipped with the connector for the FP Web expansion unit.**

2.1.5 Technical data

Feature	Description: Type 1	Type 2
Product number FP Web-Server	PN Hardware: FP-WEB	PN Hardware: FP-WEB2
	PN Configurator: FPWEBTOOL2	
PLC connection	PLC COM: RS232C via 3-pin screw terminal port Plug: Phoenix product: MC1,5/3-ST-3,5 Order Number: 18 40 37 9	
Modem / 2nd RS232C	Modem COM: RS232C via 9-pin SUB-D port, with RTS, CTS Plug: 9-pin SUB-D female	
Power supply	24V DC Molex 35 plug on the bottom side of the unit	
Ethernet connection	Ethernet-COM: 10BASE-T via RJ45 female connector	10BASE-T / 100BASE-TX autoneg via RJ45 female connector
LEDs (see p. 187)	Power, Ethernet, PLC data exchange	Power, Ethernet, Ethernet data, PLC data
Protocols and standards	TCP/IP, UDP/IP, DHCP, FTP, TELNET, http, https, SMTP, ESMTP-Auth, POP3, PPP, IEC60870, NTP, Modbus, DynDNS, SNMPv1	
Flash memory	512KBytes	8MBytes
	For further information, refer to Available Memory Calculation in the online help.	
RAM	512KBytes	8MBytes
Operating voltage	24V DC (10.8 – 26.4V DC supplied by class 2 circuit only)	
Current consumption	Approx. 75mA at 24V DC	Approx. 65mA at 24V DC
Degree of protection	IP20	
Ambient temperature	0°C to +55°C	
Storage temperature	-20°C to +70°C	

Feature	Description: Type 1	Type 2
Humidity	Max. 30% to 85% (non-condensing)	
Vibration resistance	10Hz to 55Hz, 1 cycle per minute with a double amplitude of 0.75mm; 10 minutes every X-, Y-, and Z-axis	
Shock resistance	Min. 10g; 4 times every X-, Y-, and Z-axis	
Dimensions	Height 90mm, Width 25mm, Depth 64mm	
Weight	Approx. 110g	
Operating conditions	Free of corroding gases and excessive influence of dust	
CE conformity	EMC Standard 89/336/EEC 1989EN 55022/Class B EN 55022/Class B; EN 61000-4-2/A1; EN 61000-4-3 EN 61000-4-4 +A1:2010; EN 61000-4-6	
UL approval	UL number "2LD7" (file E232530)	
Hardware version	Refer to hardware version (see p. 21)	

2.1.6 Installation

ATTENTION!

Be sure to install the FP Web-Server unit in locations designed for electrical equipment, e.g. in a closed metal cabinet such as a switch cabinet.

Make sure you are not electrostatically charged before you touch the FP Web-Server or one of its units: the discharge of static electricity can damage parts and equipment.

Please install the FP Web-Server in the following order:

◆ PROCEDURE

1. Mount the unit on the DIN rail on which the FP0R PLC is mounted

   For detailed information, refer to mechanical installation (see p. 27).
2. Before connecting the power supply, please read the information on power supply (see p. 32)
3. Connect the Ethernet (10/100BaseT) with a standard cable

4. Connect the PLC via RS232C/USB/RS485

   Please read the information on wiring under PLC connection, cable drawings, modem (see p. 184) or the "FP Web-Server Installation Instructions Leaflet".

5. Configuration: For the first configuration and how to get started with the Configurator, please refer to first steps (see p. 37).

   This is a brief description on how to put an FP Web-Server into operation.

◆NOTE

The USB port and the RS485 interface are only available with the FP Web Expansion Unit.

2.1.7 Important notes

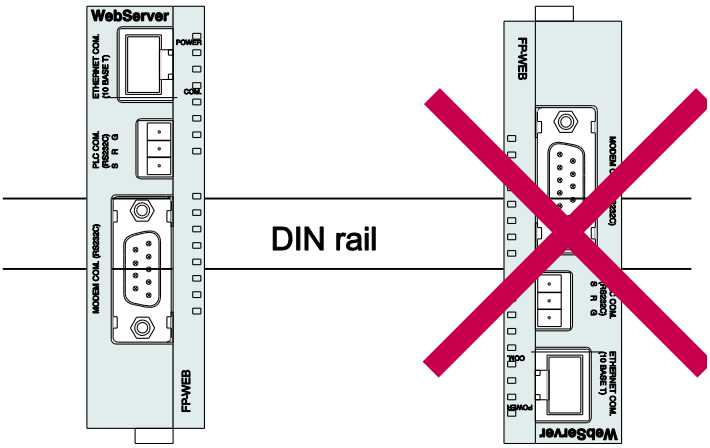
Please also see the Installation Instruction leaflet "FP Web-Server2 Unit" supplied with your FP Web-Server for important notes, cables and installation.

Please read the following notes carefully before installing your FP Web-Server.

◆NOTE

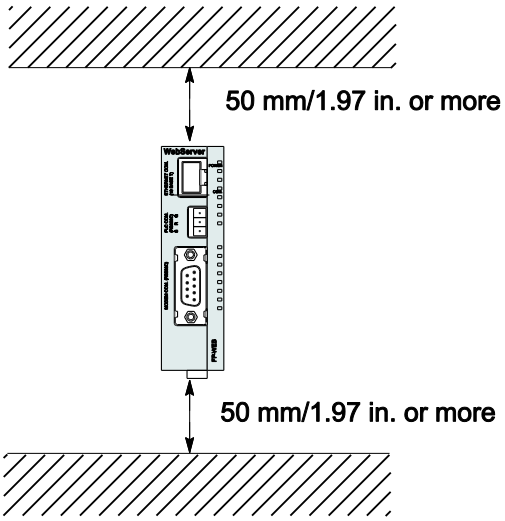
1. **Avoid installing the unit in the following locations:**
   - Ambient temperatures outside the range of 0°C to 55°C/32°F to 131°F
   - Ambient humidity outside the range of 30% to 85% RH
   - Sudden temperature changes causing condensation
   - Inflammable or corrosive gases
   - Excessive airborne dust or metal particles
   - Fuel, paint thinner, alcohol or other organic solvents or strong alkaline solutions such as ammonia or caustic soda
   - Excessive vibration or shock
   - Direct sunlight
   - Water in any form including spray or mist
2. **Avoid noise interference from the following items:**
   - Influence from power transmission lines, high voltage equipment, power cables, power equipment, radio transmitters, or any other equipment that would generate high switching surges.
   - If noise occurs in the power supply line even after the above countermeasures are taken, it is recommended to supply power through an insolated transformer, noise filter, or the like.
3. **Measures regarding heat discharge:**
   - Always install the unit orientated with the Ethernet port facing outward on the top in order to prevent the generation of heat.
   - Do not install the unit above devices which generate heat, such as heaters,

transformers or large scale resistors.

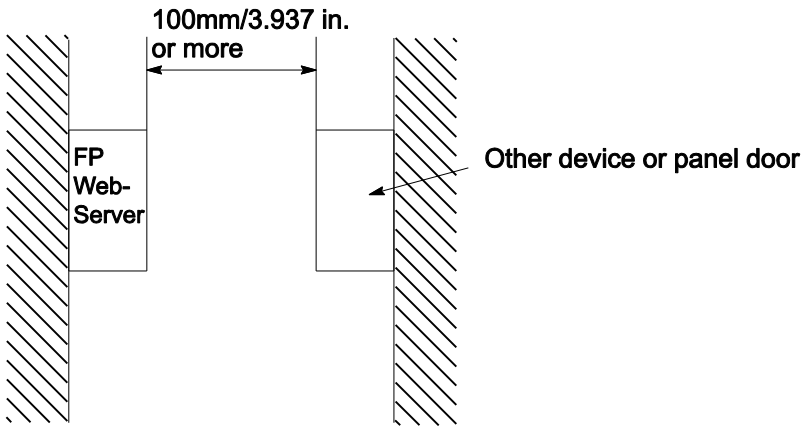


4. Installation space:

- Leave at least 50mm/1.97in. of space between the wiring ducts of the unit and other devices to allow heat radiation and unit replacement.



- Maintain a minimum of 100mm/3.937in. between devices to avoid adverse affects from noise and heat when installing a device or panel door to the front of the FP Web-Server unit.



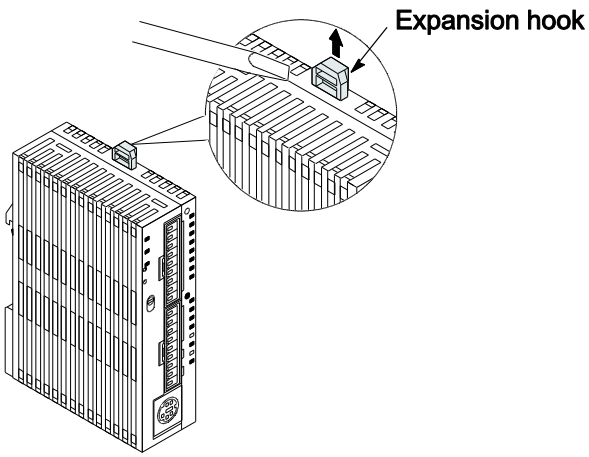
- Keep the first 100mm/3.937in. from the front surface of the FP Web-Server unit open in order to allow room for programming tool connections and wiring.

2.1.8 Mechanical installation

a) Adding to FP0:

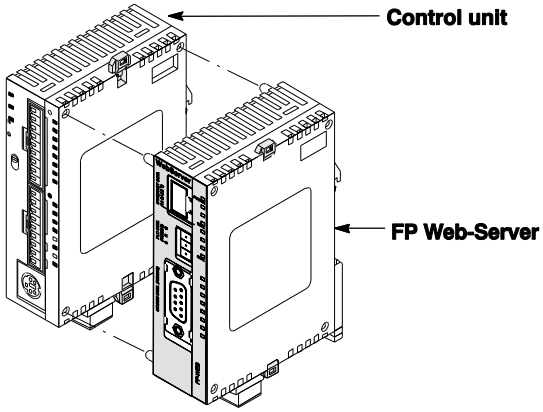
◆PROCEDURE

1. Raise the expansion hooks on the top and bottom sides of the unit with a screwdriver



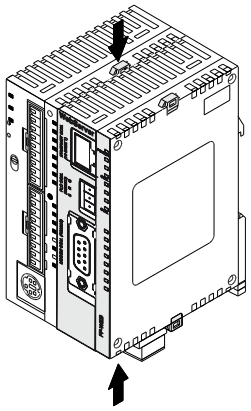
2. You can align the pins and holes in the four corners of the control unit and expansion unit, and insert the pins into the holes so that there is no gap between the units

However you need not necessarily connect the FP Web-Server in this way.



Note:
Make sure that the FP Web-Server is the last unit attached. Otherwise the CPU cannot communicate with the expansion units.

3. Press down the expansion hooks raised in step 2 to secure the unit



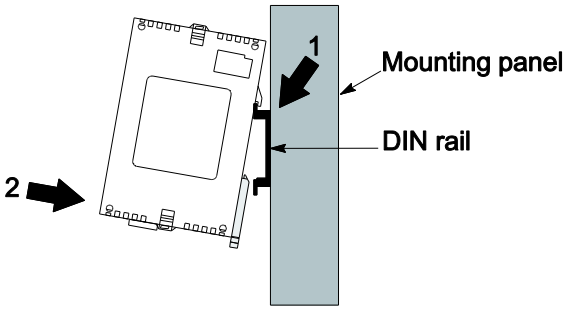
b) Attachment to DIN Rails:

- The FP Web-Server unit enables a one-touch attachment to DIN rails.

◆PROCEDURE

1. Fit the upper hook of the FP Web-Server onto the DIN rail

2. Without moving the upper hook, press on the lower hook to fit the FP Web-Server into position

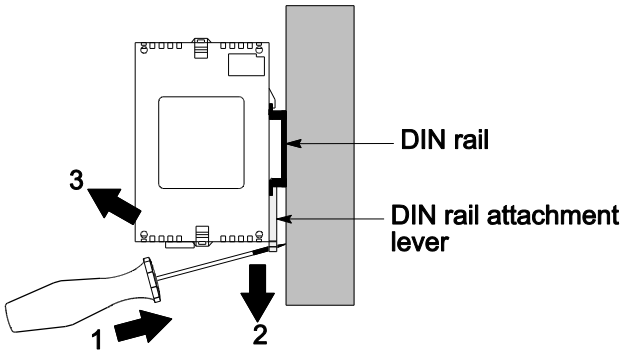


c) Removal from DIN Rail:

- You can easily remove the FP Web-Server as described below.

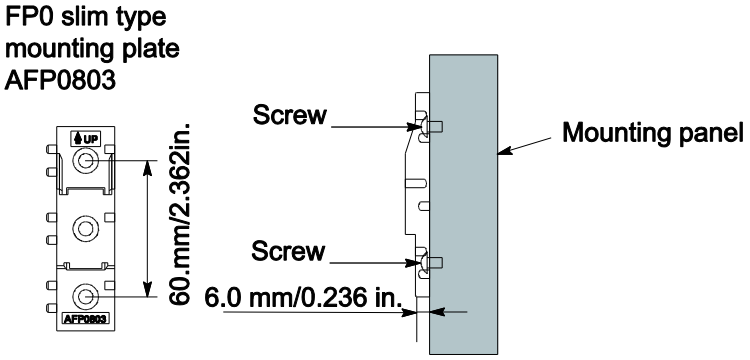
PROCEDURE

1. Insert a slotted screwdriver into the DIN rail attachment lever
2. Pull the attachment lever downwards
3. Lift up the FP Web-Server unit and remove it from the rail



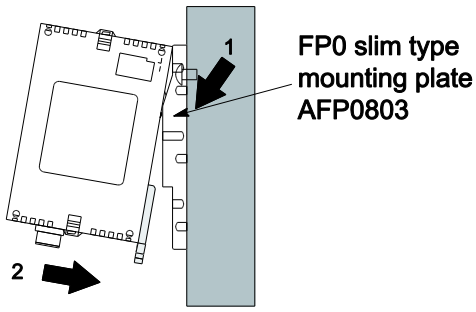
d) Installation Using FP0 Slim Type Mounting Plate

- Use M4 size pan-head screws for attachment of FP0 slim type mounting plate (AFP0803) to mounting panel.



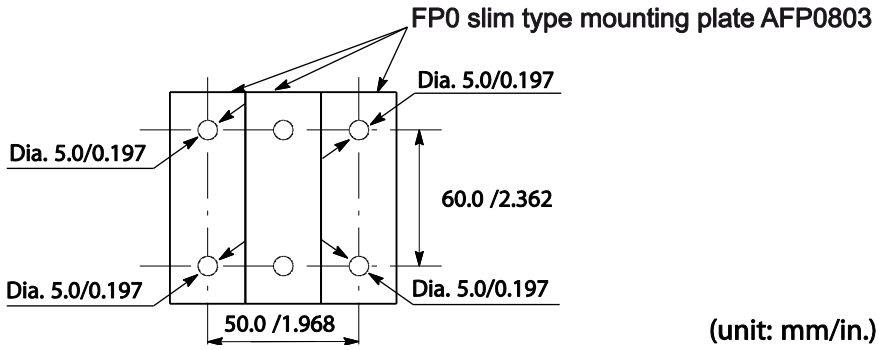
◆PROCEDURE

1. Fit the upper hook of the FP Web-Server onto the FP0 slim type mounting plate
2. Without moving the upper hook, press on the lower hook to fit the FP Web-Server into position



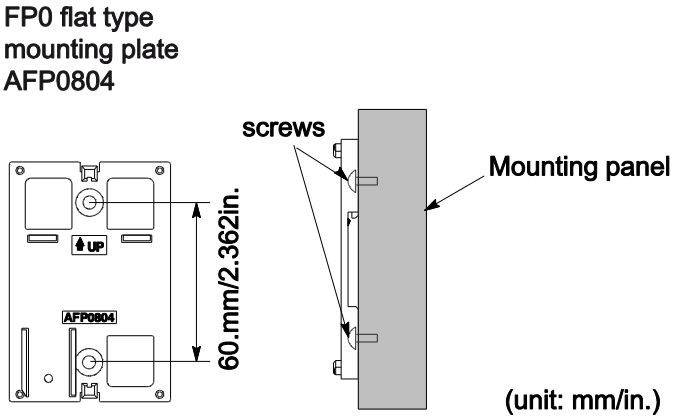
- When using an expansion unit, tighten the screws after joining all of the FP0 slim type mounting plates to be connected. Tighten the screws at each of the four corners.

Example: Two Expansion Units



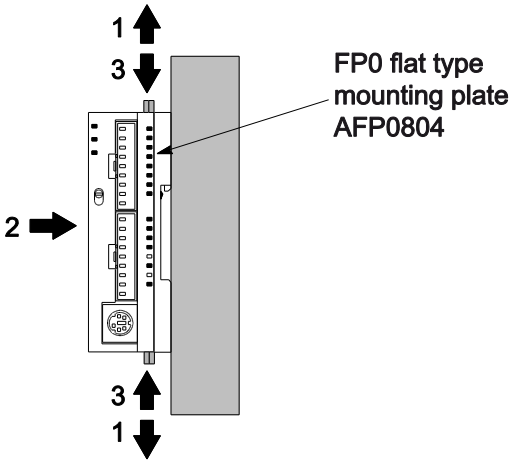
e) Installation Using FP0 Flat Type Mounting Plate

- Use M4 size pan-head screws to attach FP0 flat type mounting plate (AFP0804) and install according to the dimensions shown below.



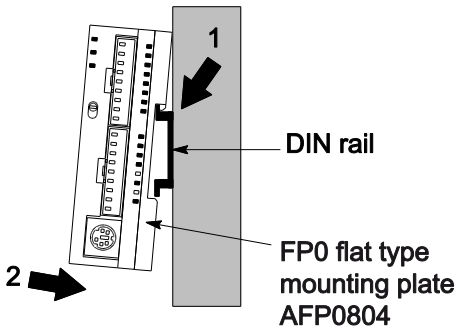
◆PROCEDURE

1. Raise the expansion hooks on the top and bottom of the unit
2. Install the FP Web-Server on the FP0 flat type mounting plate
3. Align the expansion hooks with the plate and press the hooks back down



◆NOTE

An FP Web-Server with an attached FP0 flat type mounting plate can also be installed sideways on a DIN rail.

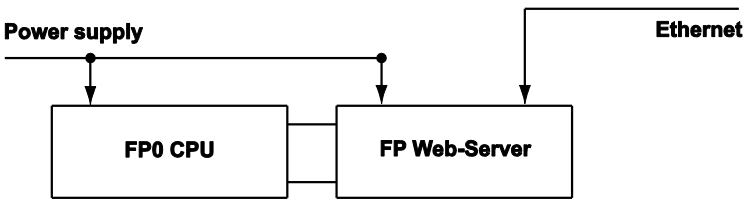


2.1.9 Connecting the power supply

The FP Web-Server unit will turn ON as soon as the power supply has been connected.

◆NOTE

1. **When connecting the power supply (class 2 circuit) make sure the polarity (+/-) is correct.**
2. **The FP Web-Server unit and the PLC have to be supplied by THE SAME power supply unit.**
3. **If power is supplied, the green POWER LED will be ON.**



4. **Framing Ground (FG) must be connected.**
5. **Please read the Important Notes (see p. 25).**
6. **Please also read the "FP Web-Server Leaflet" supplied with your FP Web-Server.**

2.2 FP Web expansion unit

2.2.1 Introduction

ATTENTION!
Please read the safety instructions in important notes (see p. **25**) and also the section on mechanical installation (see p. **27**) carefully.

The FP Web expansion unit allows you to extend the interfacing possibilities of the Panasonic FP Web-Server unit.

The following main features are supported:

- USB/ Ethernet interface (remote programming monitoring and visualization)
- RS485/ Ethernet interface (remote programming monitoring and visualization)
- High-speed digital output
- SD card slot

See the technical data sheet (see p. 34) for supported standards and protocols.

2.2.2 FP Web expansion unit package

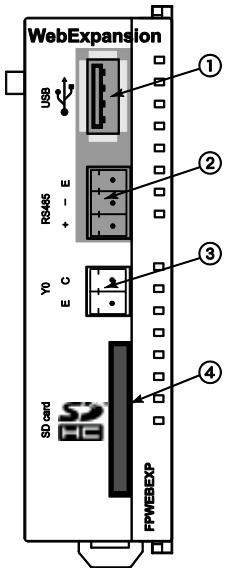
The package for the FP Web expansion unit contains:

- FP Web Expansion unit
- Leaflet providing installation instructions
- Phoenix 3-pin screw terminal
- Phoenix 2-pin screw terminal

Comments:

- The FP Web expansion unit only works when connected to an FP-WEB2 unit.
- The FP-WEB2 unit is configured via the Control FP Web Configurator Tool.
- The Control FP Web Configurator Tool can be purchased separately.

2.2.3 Parts and functions



① **USB host port**
USB 1.1 host port for Panasonic products that are supported by the FP-WEB2.

② **RS485**
Screw terminal.

③ **High-speed digital output**
Optocoupler, phototransistor output.

④ **SD card slot**
SD/SDHC memory card support

2.2.4 Technical data

Feature	FP Web Expansion Unit
Product number:	PN Hardware: FPWEBEXP
	PN Configurator: FPWEBTOOL2
PLC connection	USB Port: USB 1.1 (refer to targeted peripheral list (see p. 35)) RS485 via 3-pin screw terminal port plug: Phoenix product: MC1.5/3-ST-3.5. Order number: 18 40 37 9
Digital output	High-speed digital optocoupler, phototransistor output (5 to 24V DC, 50mA max., rise time:6µs or less, fall time: 20µs or less)
SD/SDHC card slot	SD memory card supported (32M to 1GB) SDHC memory card supported (4GB to 32 GB)
Operating voltage	3.3V DC (internal power supply via 16-pin expansion connector from FP-WEB2)
Current consumption	Max. additional 20mA at 24V DC (depending on the SD card used)
Degree of protection	IP20

Feature	FP Web Expansion Unit
Ambient temperature	0°C to +55°C
Storage temperature	-20°C to +70°C
Humidity:	Max. 30% to 85% (non-condensing)
Vibration resistance:	10Hz to 55Hz, 1 cycle per minute with a double amplitude of 0.75mm; 10 minutes every X-, Y-, and Z-axis
Shock resistance:	Min. 10g; 4 times every X-, Y-, and Z-axis
Dimensions:	Height 90mm, Width 25mm, Depth 64mm
Weight:	Approx. 66g
Operating conditions:	Free of corroding gases and excessive influence of dust
CE conformity:	EN 55022:2006 + A1:2007; Class B EN 55024:1998 + A1:2001 + A2:2003; Class A
Hardware version	Refer to hardware version (see p. 21)

2.2.5 Targeted peripheral list of the USB host port

The USB host port of the FP Web expansion unit supports FP-X PLCs and GT series HMIs. More details can be found in the following targeted peripheral list.

Manufacturer	Model	Vendor ID	Product ID	Description	Speed
Panasonic Electric Works, Ltd.	GT series	0x0986	0x0310	Panasonic GT USB driver ver. 1.0	Full speed
Silicon Laboratories, Inc.	CP2101 USB to UART Bridge Controller	0x10C4	0xEA60	Panasonic FP-X series USB driver	Full speed

2.2.6 Important notes

Please also see the installation instruction leaflet supplied with your FP Web expansion unit for important notes, cables and installation.

To prevent malfunction or failure, please refer to the important notes (see p. 25) for the FP Web-Server concerning the installation environment and space.

2.2.7 Mechanical installation

◆REFERENCE

Refer to the installation instructions leaflet provided with the product for instructions on:

- Connecting the FP Web expansion unit to the FP Web-Server2 unit
- Installing the units on a DIN rail.

For a detailed procedure about one-touch attachment to DIN rails, removal from DIN rails, installation using FP0 Slim Type Mounting Plate or FP0 flat type mounting plate, refer to the mechanical installation (see p. 27) instructions of the FP Web-Server unit.

Chapter 3

First steps

3.1 Getting started

This section describes putting the FP Web-Server into operation for the first time. The subsequent step-by-step example depicts the general configuration and use of the FP Web-Server for displaying HTML pages.

◆ **REFERENCE**

- To expand upon this example with email functions, refer to email functions of the FP Web-Server (see p. 60).
- For details on programming email support on the PLC, refer to the PEW_FPWEB library and its online help.
- For further information, refer to Ethernet/serial (RS232C, RS485, USB) ports (see p. 118).

3.2 The Ethernet network

The FP Web-Server is supplied with a 10/100BaseT Ethernet connection. This type of Ethernet network uses a peer-to-peer connection with twisted pair cables. To establish a network, hubs and switches are used to connect the participants in a star-shaped manner.

To be able to configure the FP Web-Server, a Windows computer with an Ethernet network interface card has to be connected to the same network as the FP Web-Server. The FP Web-Server can be connected to an existing Ethernet network.

It is also possible to set up a separate network for the FP Web-Server. The computer can also be directly connected to the FP Web-Server by using a special "cross-over" Ethernet cable (see p. 192).

3.3 Connection of the FP Web-Server

For an initial function test (without the PLC data), the FP Web-Server has to be connected to the Ethernet and be supplied with operating voltage (24V DC and FG).

In the second step, the FP Web-Server has to be connected to the PLC (via RS232C). The RS232C setting of the PLC must correspond to that of the FP Web-Server. This setting can be defined in the PLC program (FPWIN Pro) under the system parameter settings.

◆**NOTE**

Please remember the ID number found on the FP Web-Server's type label. You will need it when you configure the Web-Server.

3.4 Installation of the configurator program

To be able to configure the FP Web-Server, a Windows computer with an Ethernet network interface card has to be connected to the same network as the FP Web-Server. The computer must be configured in such a way that it supports the TCP/ IP network protocol.

To install the Configurator (administrator rights are needed), start the setup program on the CD and follow the instructions of the installation program "Control FP Web Configurator Tool". Various examples (see "Description of the HTML examples" on p. 183) and HTML pages are installed along with the Configurator. In addition, the tool **DnsDisp.exe**, which locates DNS addresses of an Internet Service Provider (ISP), is copied to the installation folder.

Further information:

- Install the FP Web Configurator Tool
- Contents of the CD and Auxiliary Programs (see p. 182)

For detailed information, refer to the file "JavaRuntimeStart.pdf" on your installation CD-ROM in the sub-folder "JavaApplets".

The Configurator can be started in the Windows start menu under "Program Files/ Panasonic-ID SUNX Control/ FP Web Configurator 2/ FP Web Configurator 2".

3.5 Determination of the IP configuration

Every Ethernet participant must have an individual IP address. This address may not be used a second time in the same network. The IP address (see p. 190) consists of 4 numbers (0 to 255). The first numbers define the network address, the other numbers define the participant's address. The IP address of the FP Web-Server can be fixed or it can be allocated dynamically by a DHCP-Server.

◆ PROCEDURE

1. In a "self set-up" network (e.g. with only one hub) the IP addresses can be assigned by yourself

   In this case, do not use DHCP. For further information refer to Setup of an Individual Ethernet LAN (see p. 192).

2. If the FP Web-Server is to be connected to an existing network, the following data must be obtained from the network administrator:

   - Is there a DHCP-Server in the network? If NOT:
   - IP address: Which fixed IP address can be assigned to the FP Web-Server?
   - Netmask: How is the network address set up (length of the network address and/or the participant's address)?
   - Gateway: What is the gateway's IP address? (0.0.0.0 if there is no gateway to be used).

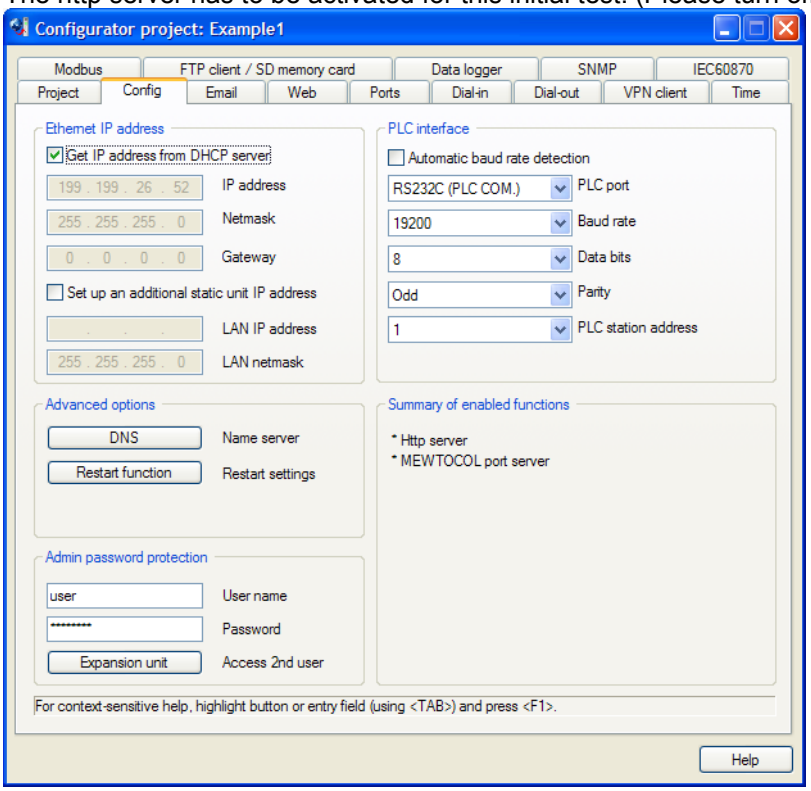
3.6 Generate a new configurator project

After having started the Configurator, a Configurator project can be opened from the local hard drive with [OPEN]. A Configurator project consists of:

- the configuration
- the email texts
- the HTML pages.

Upon the initial start, the "default_project" is automatically offered with [OPEN]. With [OPEN] you can also load one of the examples (see "Description of the HTML examples" on p. 183) (example1 to 9). You can save it under a new name with [SAVE AS]. On the "Config" page you can adjust the following, most important settings. You must configure at least the following:

- The IP configuration (see "Determination of the IP configuration" on p. 42) has to be entered accordingly.
- The serial interface parameter to the PLC may have to be adjusted (RS232C, 19200 8O1 is pre-adjusted).
- It is also recommended to enter an individual user name and a password of your own.
- The http server has to be activated for this initial test. (Please turn off email and PPP!):



For the initial test, no other parameters have to be altered. Save the changed project with [SAVE].

Comments:

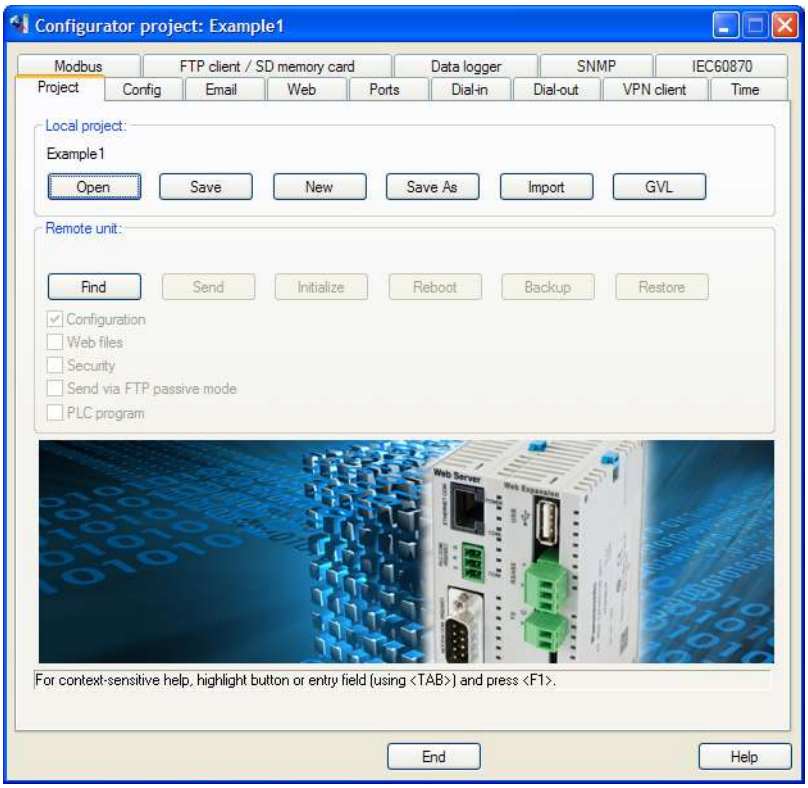
- To receive additional help and information on the various Configurator entries, please move the cursor to the respective input field and press <F1>.
- The "default_project" works without PLC data, i.e. it does not need to be connected to the FP Web-Server. Nevertheless, in case "Example1" is used, a PLC should be connected.

3.7 Transfer a configurator project to the FP Web-Server

With [FIND] the network is searched for all FP Web-Servers. A list of all FP Web-Servers found will be displayed. Please select the ID number of the respective FP Web-Server (double-click or press <ENTER>).

If the FP Web-Server is put into operation for the first time (or a new version of the Configurator was installed), please initialize the FP Web-Server ONCE before transferring the project, i.e. click [INITIALIZE] and answer the safety request with [YES].

As there are HTML pages required for this initial test, the checkbox "Web files" should be activated. With [SEND] the project (configuration plus HTML pages) can be transferred to the respective FP Web-Server.



Please click [REBOOT] after transmission. Wait a little bit and the click [FIND] again to make sure that the FP Web-Server is online again and to find out which IP address it is using.

Comments:

- Please memorize the IP address for the following tests with the browser below.
- If the FP Web-Server was configured with the wrong fixed IP address, a query with [FIND] will result in an error message.
- In this case click [YES]. By doing that the FP Web-Server is set to the IP address entered in the current Configurator project. After a short waiting period, click [FIND] again.
- If the current password of the FP Web-Server is not the same as the password of the project, the user name and the password are asked before transmission and/or restart.

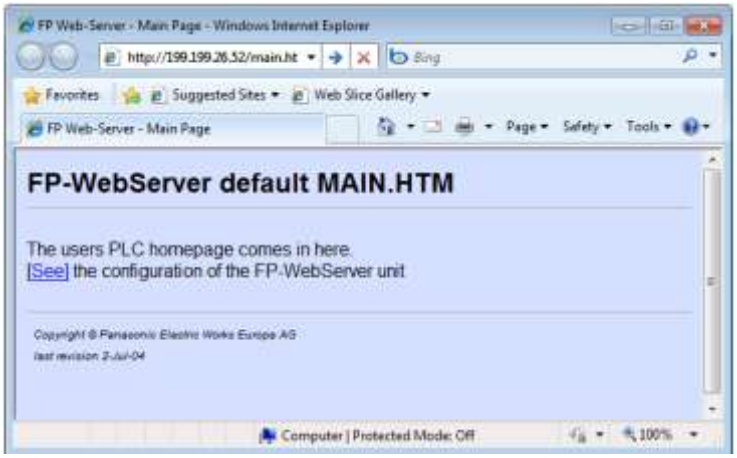
([SEND], [INITIALIZE], [REBOOT]).

- Please refer to "Trouble Shooting (see p. 197)" if any problems occur with the functions FIND, SELECT, INITIALIZE or SEND.

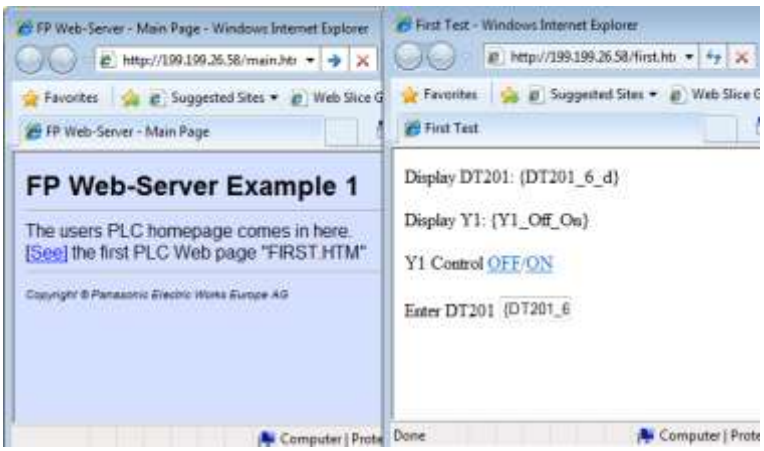
3.8 Internet browser to test the FP Web-Server

The HTML pages of the FP Web-Server can be displayed with a standard Internet browser. Start the Internet browser and enter the IP address of the FP Web-Server into the address field.

The HTML page **"main.htm"** of the FP Web-Server will be displayed. For the "Default_Project" (without PLC data, FP Web-Server may not be connected to a PLC) for example:



Or for "Example1" (with PLC data):



Comments:

- In main.htm you cannot use PLC data items. Furthermore, it is impossible in main.htm to use password protection.
- If the FP Web-Server is operated in an office network with a Proxy gateway to the Internet, accessing the FP Web-Server HTML pages might take a long time. In this case, shut off the Proxy function of the browser for this specific IP address of the FP Web-Server. For the browser setup refer also to TCP/IP Setup: Configurator/Browser Operations Via LAN.

3.9 Further information

- Details on FP Web-Server's web page functions (see p. 84)
- The PLC sends emails (alarm emails with FPWIN Pro library (see p. 60))
- Details on Ethernet/serial (RS232C, RS485, USB) ports (see p. 118)
- Dial-up networking setup for computer and FP Web-Server (see "Dial-in networking setup for computer/FP Web-Server" on p. 126)
- IEC 60870 functions of the FP Web-Server (see p. 169)

Chapter 4

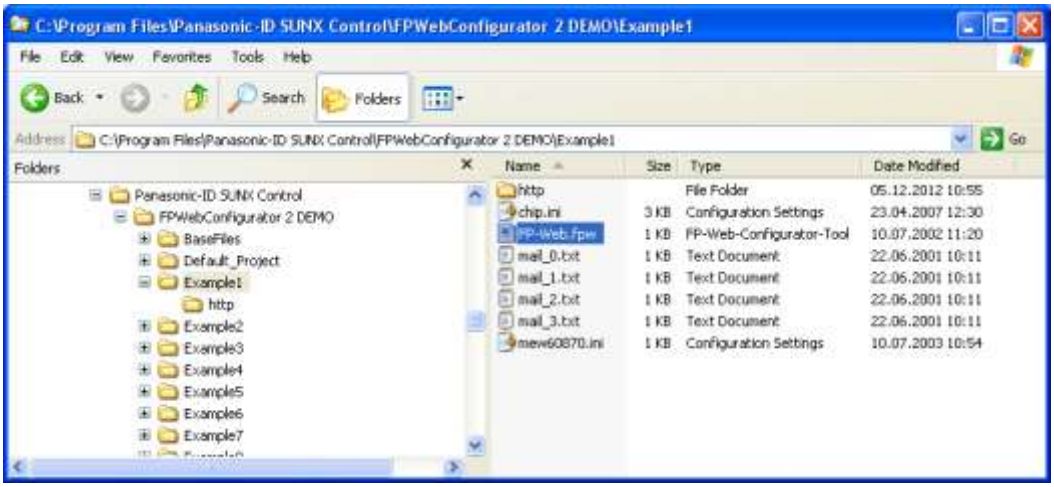
Configurator Software

4.1 General information on the FP Web-Server Configurator

The FP Web Configurator administers "Configurator projects". These consist of:

- FP Web-Server project file (FP-Web.fpw)
- FP Web-Server configuration (CHIP.INI file)
- IEC 60870 configuration (mew60870.ini)
- Email texts (MAIL_x.TXT files)
- Data logger setting files (pewlog1.bin, pewlog2.bin)
- Web files (MAIN.HTM; *.HTM; *.GIF; *.JPG; *.XML ...)
- Certificate files for https

Every configurator project is stored in a separate folder. Email text files, .INI text files and a subfolder "http" in which all the Web pages for the FP Web-Server are stored belong to a project.



There are 3 ways to start the FP Web Configurator:

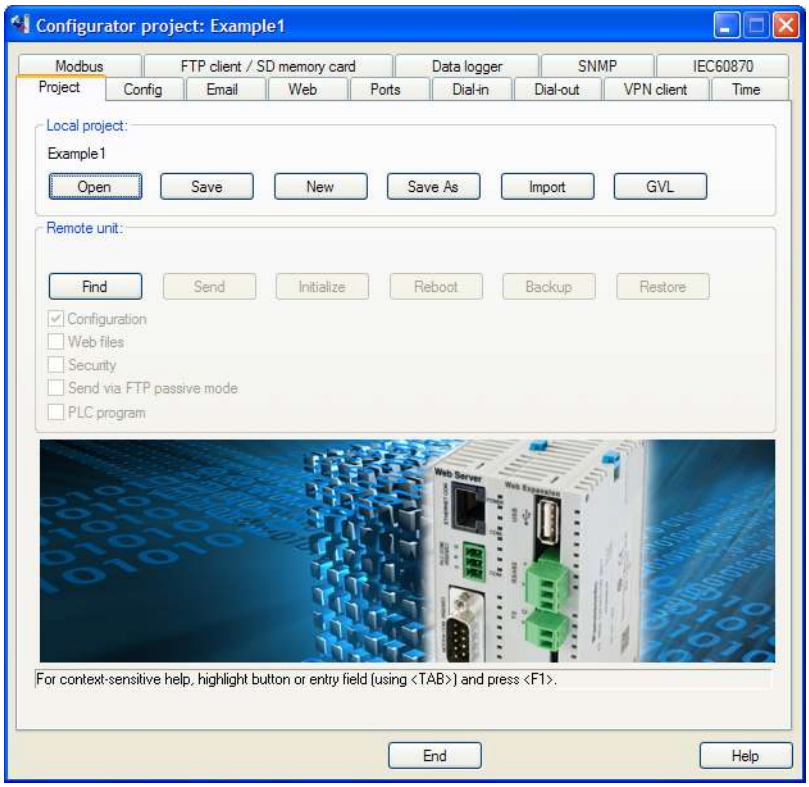
1. Start -> Program Files ->Panasonic-ID SUNX Control ->FP Web Configurator 2 ->FP Web Configurator 2
2. Double-click the project file *.fpw of the project within the file explorer
3. Via a DOS command line that includes the configuration to be opened, e.g. C:\Program Files\Panasonic-ID SUNX Control\FP Web Configurator 2\FP_Web.exe example1/FP-Web.fpw

To administer ([OPEN], [SAVE]...) "Configurator projects", edit the configuration (including email texts and Web files) and to control the FP Web-Server (transmission of files, initialization, reboot...), the FP Web Configurator provides the following main components:

- Control buttons (see p. 49)
- Base configuration (see p. 55)
- Email configuration and texts (see p. 59)

- Web files and editor call (see p. 83)
- Ethernet/Serial (RS232C, RS485, USB) ports configuration (see p. 117)
- PPP server configuration (see p. 125)
- IEC 60870 functions of the FP Web-Server (see p. 169)
- PPP-Client Dial-Out (see p. 156) and
- NTP-Time (see p. 158)
- Modbus functions (see p. 162)
- SNMP functions (see p. 178)
- FTP client functions (see p. 66)
- Data logger functions (see p. 76)

In the following sections the individual control buttons of the first page ("project" page) of the Configurator are described in detail:



4.2 Control buttons for administering the "Configurator Project"

For a detailed description of the control buttons, refer to the online help under the respective keyword of the button.

4.3 Control buttons for the remote FP Web-Server unit

For a detailed description of the control buttons, refer to the online help under the respective keyword of the button.

4.4 System icon menu

Click the system icon  on the title bar to open a menu, e.g. to:

- change the user interface language of the FP Web Configurator
- open a comment dialog
- find out the software version

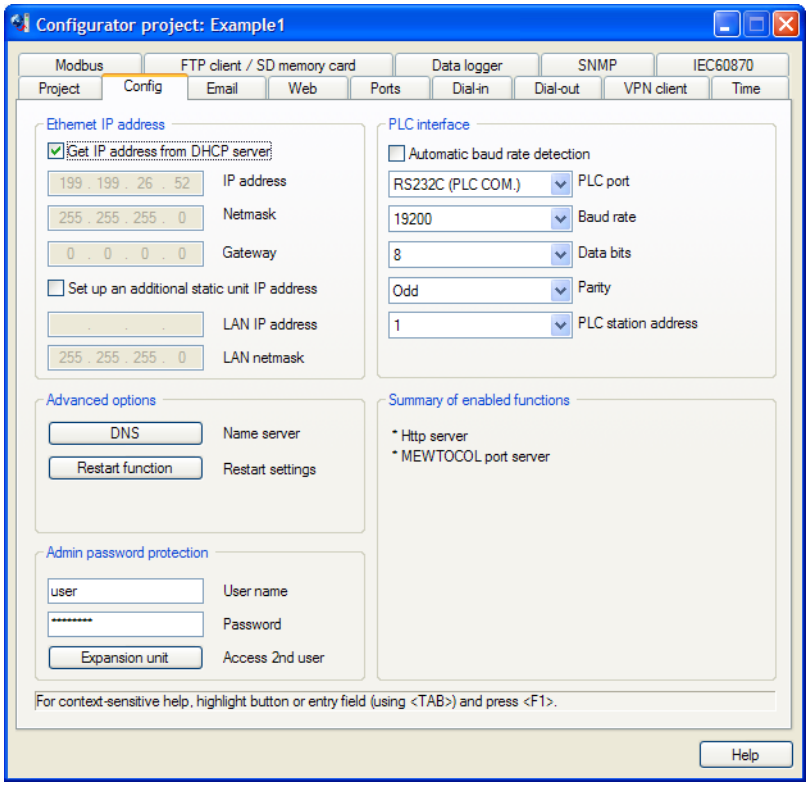
Chapter 5

Base configuration

5.1 Main settings ("Config")

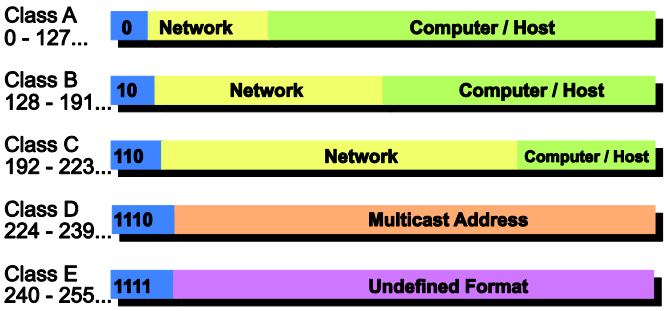
The main settings for the FP Web-Server are adjusted on the "Config" tab.

- An Ethernet IP address (see p. 57) must be entered.
- The parameters for the PLC interface may have to be adjusted (the following figure shows the default settings).
- We recommend that you specify a user name and password.
- An additional static 2nd LAN IP address for the FP Web-Server unit can be set, DNS can be enabled, the system restart function of the FP-WEB2 can be activated and FTP access to the SD memory card of the FP Web expansion unit can be restricted.



5.1.1 Ethernet IP address

Every Ethernet participant must have an individual IP address. This address may not be used a second time in the same network. The IP address consists of 4 numbers (any 0 to 255, see also IP and TCP/ IP (see p. 190)). The first numbers define the network address, the other numbers define the participant's address.



The IP address of the FP Web-Server can be fixed or it can be allocated dynamically by using a DHCP-Server.

◆ PROCEDURE

1. In a "self set-up" network (see p. 192) (e.g. with only one switch) the fixed IP addresses can be assigned by yourself

   In many cases a class C network is used. The network is identified by 3 numbers. The participants (Computers, Units, FP Web-Server...) are distinguished by the last number (1 to 254), e.g. 192.168.206.1 to 192.168.206.254.

   In case this network is connected to a second network via a gateway (e.g. the computer for configuration might be in this network), the gateway address also needs to be specified, e.g.:

   Computer in x.y.206.z Network with Netmask 255.255.255.0, using the x.y.206.1 Gateway.

   FP Web-Server in x.y.60.z Network with the following settings:

   - IP Add=x.y.60.31
   - Netmask=255.255.255.0
   - Gateway=x.y.60.1

2. In case the FP Web-Server should be connected to an existing network, the following data must be requested from the network administrator:

   - Is there a DHCP-Server in the network? If NOT:
   - IP address: Which fixed IP address can be assigned to the FP Web-Server?
   - Netmask: How is the network address set up (length of the network address and/ or the participant's address)?
   - Gateway: What is the gateway's IP address? (0.0.0.0 if there is no gateway to be used).

◆REFERENCE

For further information please refer to the online help under the keywords "Username and password", "DNS parameter settings", PLC link interface" or "Selection of the main functions".

Chapter 6

Email setup

6.1 Email functions of the FP Web-Server

The FP Web-Server can send emails, e.g. in case of an alert. An existing email server (see p. 61) is used to distribute the emails triggered by the PLC. The PLC can use predefined text messages (stored in the FP Web-Server) as well as variably created email texts (stored as ASCII strings in the PLC). The FP Web-Server informs the PLC if the email has been sent correctly.

After a predefined interval, e.g. every 7 seconds, the FP Web-Server checks an internal relay of the PLC (via MEWTOCOL) to find out if the PLC wants to send an email. The polling interval between PLC requests (and the address of the PLC internal relay that starts the sending of the email) can be defined in the configurator project.

Optionally a file attachment holding PLC data can be generated.

If the http/https server and/or the Ethernet<-> RS232C/RS485/USB ports are carrying out MEWTOCOL communication with the PLC at the same time, the polling time takes longer than specified in the configuration. Especially when carrying out the multi-frame MEWTOCOL commands (PLC program download) via the Ethernet<-> RS232C/RS485/USB ports, the email polling of the PLC internal relay can be delayed.

For examples on sending emails from the PLC, refer to the PEW_FPWEB ..\..\..\FPWIN Pro Libraries\FPWIN Pro FPWEB Library\PEW_FPWEB.chm::/88091.htm library or try those following.

A) Using an email server via Ethernet LAN:

Please ask your network administrator to clarify the following **requirements**:

- An email SMTP server in the LAN is required. Also refer to setup of an individual Ethernet LAN (see p. 192).
- The address of the email server must be correct in the configurator project.
- A defined email address, which is known to the email-server, should be assigned to the PLC (or the FP Web-Server).

◆**EXAMPLE**

See the configurator project "Example2" for Ethernet LAN usage.

B) Dialing up an email server in the Internet:

- A modem is needed to dial up an ISP.
- An email account of an Internet email ISP is needed.
- To set up an ISP, refer to Internet email settings (see p. 148).

◆**EXAMPLE**

See the configurator project "Example7" for Internet email.

6.1.1 Email function used for communication tests

Communication tests can be used with empty emails for a DNS request.

For continuous Internet connections (router, VPN, GPRS ...), it is sometimes necessary to test the communication, i.e. to test the availability of radio connections or to distribute the end unit's IP address after a restart in case bridges or routers are used. In such cases, the **DNS request** function for email sending can be used. The PLC should periodically try to send an email ... but the email recipient address should not be set (empty string). Then a DNS request is sent by FP Web-Server (after an optional Internet dialup), which tests the communication. Do not forget to set up the FP Web-Server with a valid email server name and existing DNS server IP address.

REFERENCE

- For further information, refer to the online help under the keyword "Periodic communication tests".
- For details on programming email support on the PLC, refer to the PEW_FPWEB library and its online help.

6.1.2 Email server for LAN or Internet

A) Email server in the LAN

The FP Web-Server was developed to cooperate with an email server in your local network. Contact your network administrator for detailed information. Often, email servers also allow the transmission of SMS and FAX via email. To send an email to someone via the Internet, the email server needs to have access to the Internet. This poses no problem if you are using an email server in your LAN that uses the Proxy to the Internet.

You only need to set the following email server parameters (also refer to the online help under the keyword "Example2" of the HTML examples)

- Server IP address (SMTP server) and port number
- Email sender address

These parameters are available from your network administrator. Optionally, you can use the server name (DNS is required) and you can log in with a POP3. More detailed information can be found in the online help under email server settings.

B) Internet email

The FP Web-Server can also use a modem connected to the 9-pin port to dial up the Internet and send emails via an Internet Service Provider.

When using this function you need a modem (or GSM module) and the following parameters (also refer to "Example7" of the description of HTML examples).

- Dialup ISP account and DNS server address, for detailed information refer to Internet email settings (see p. 148)
- Two email server names (SMTP and POP3) and ports, for detailed information refer to the online help under email server settings
- Email account with user name and password, also see email server settings

- Email sender address

These parameters are available at your ISP (for detailed information also refer to the online help under email server settings).

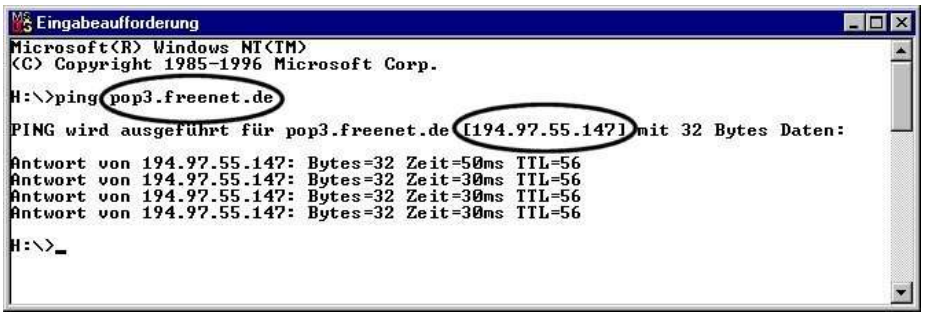
6.1.3 How to find out the address of the email server

Normally the name of the email servers can be found on the Internet pages of the email ISP. See sections on the Internet page called "Technical details", "Experts" or "How to set up email client program". Please also make sure that no ASMTP (special encrypted login method) is needed. The FP Web-Server only supports plain "SMTP after POP3" and ESMTP authentication.

If possible, find out the names' IP addresses. You can request them from the email ISP or by using a Windows computer:

PROCEDURE

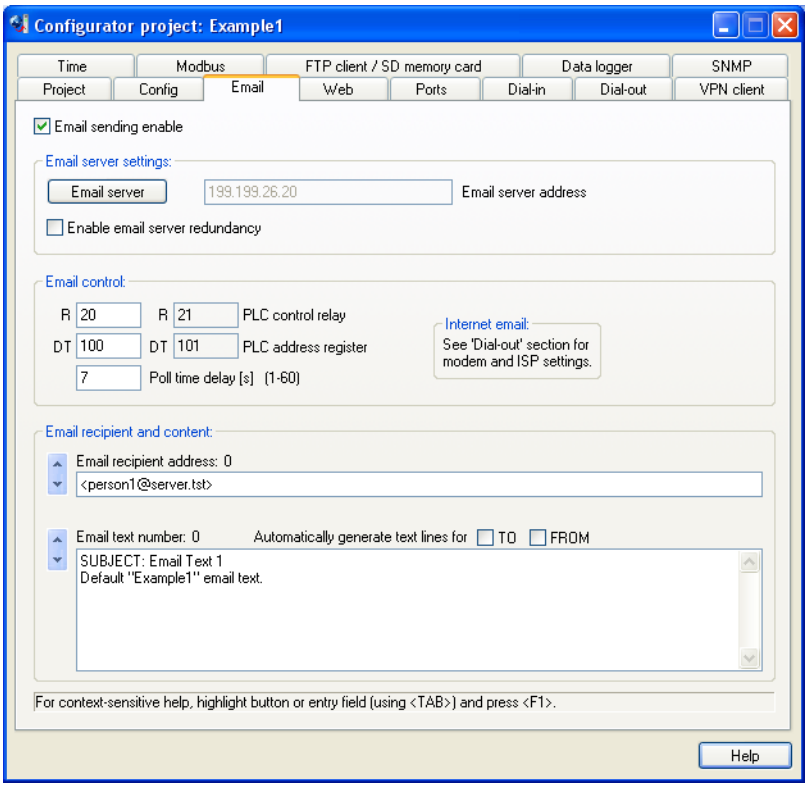
1. Configure and establish a remote network connection to the Internet (via modem)
2. At the DOS command prompt, enter the command „PING xyz" which displays the IP address



'xyz' indicates where the SMTP (POP3) email server name is.

6.2 Email tab input fields

In this section, the input fields on the "Email" tab are described.



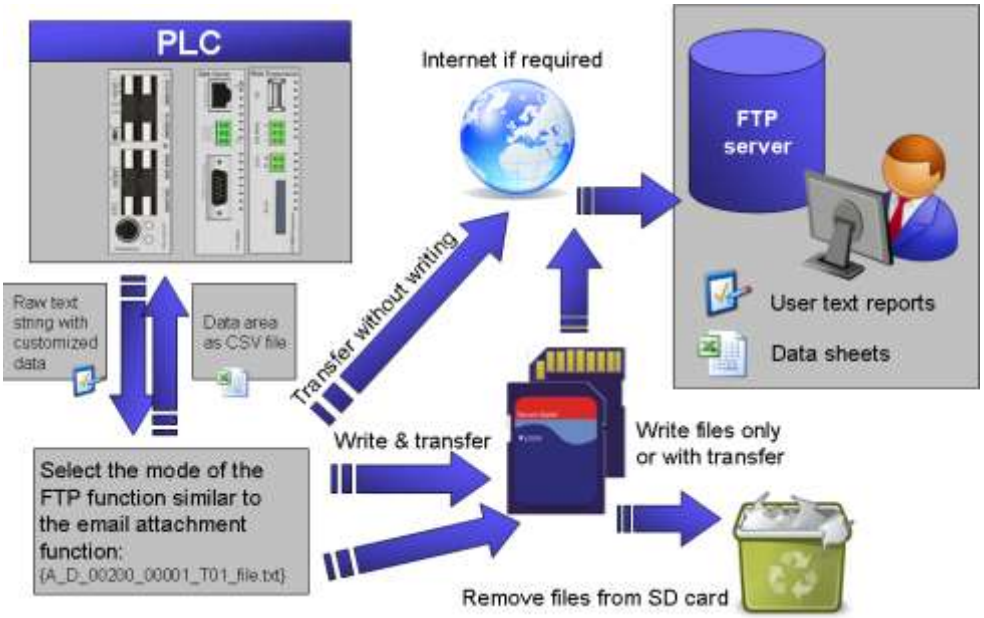
For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

Chapter 7

FTP client and SD memory card control setup

7.1 FTP client function of the FP Web-Server

The FP Web-Server can send files via FTP, e.g. as daily report or a data logger file (see p. 76). An existing FTP server can be connected to send the reports and data sheets of the FP Web-Server. The FTP client is used to distribute the files triggered by the PLC. The PLC must support the command with the operation mode. The command line is compatible to the email attachment operation syntax. In this case, the FTP client function can also be used in existing projects with small changes. Some additional commands for SD memory card operation (see p. 68) are implemented.



After a predefined interval, e.g. every 7 seconds, the FP Web-Server checks an internal data register of the PLC (via MEWTOCOL) to find out if the PLC wants to send a file. The polling interval between PLC requests (and the address of the PLC internal data register that starts the sending of the file) can be defined in the configurator project.

If the http/https server and/or the Ethernet<->RS232C/RS485/USB ports are carrying out MEWTOCOL communication with the PLC at the same time, the polling time can take longer than specified in the setup. Especially when carrying out multi-frame MEWTOCOL commands (PLC program download) via the Ethernet<->RS232C/RS485/USB ports, the email polling of the PLC internal relay is delayed.

A) Using an FTP server via Ethernet LAN:

Please ask your network administrator to clarify the following **requirements**:

- An FTP server in the LAN is required. Also refer to setup of an individual Ethernet LAN (see p. 192).
- The address of the FTP server has to be stated correctly in the FP Web Configurator project.
- An account of the FTP server must be known for the connection.

B) Dialing up an FTP server in the Internet:

- A modem is needed to dial up an ISP.
- An account of the FTP server must be known for the connection.
- To set up the dial up function, the email function is needed. Please refer to Internet email settings (see p. 148).

7.2 Operation modes for FTP client and SD card storage

It is possible to generate a file with PLC data similar to the email attachment syntax to send via FTP or store on the SD card of the FP Web expansion unit (see p. 34). The PLC can send data as a user-defined text (TXT) or MS Excel (CSV) compatible file format. The PLC data register range and the file name can be defined in a special tag. This tag is placed as a string in the PLC and is read after recognizing the operation start.

The format of the special tag for a CSV attachment is:

```
{A_D_00200_00066_S04_filename.csv}
```

For a text attachment, it is:

```
{A_D_00200_00001_T01_filename.txt}
```

To test if a file exists, the following syntax can be used:

```
{A_D_00200_00000_P01_filename.txt}
```

No data will be written to the PLC if the number of PLC registers is set to 0.

The parameters in this tag have the following meanings:

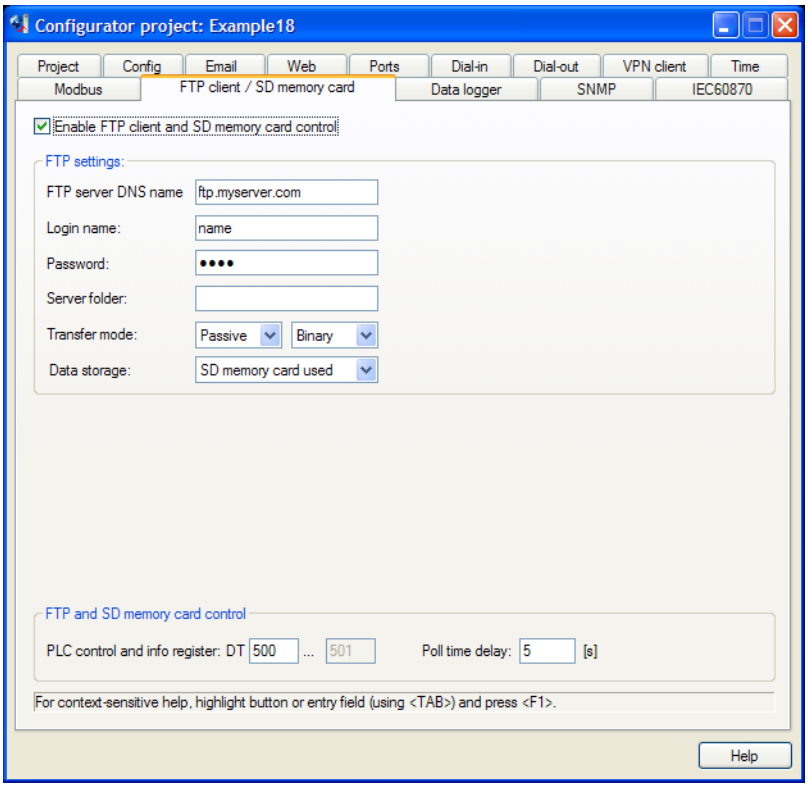
Char. offset	Description	Example
+0	Tag must start on line with '{A_'	{A_
+3	PLC register type: D=DT, F=FL, L=LD	D_
+5	CSV: First PLC register address to read TXT: Start of FPWIN Pro string header	00200_
+11	CSV: Number of PLC registers to read TXT: Always the indicator "00001_"	00066_ 00001_
+17	CSV: K,k*: Cell terminator ',' (comma) S,s*: Cell terminator ';' (semicolon) P: Restore a file/recipe from SD card to the PLC TXT: T,t*: Write and forward a*: Append to existing file. If the file does not exist, it will be created automatically. All: F: Forward file from the SD card via FTP D: Delete file from SD card ***Note**: The lower case characters will store the data without sending via FTP.	S
+18	CSV: Number of CSV columns TXT: Always the indicator "01_"	04_
+21	Attachment file name up to the '}' Any file name with typical characters which are allowed in file systems including the blank can be used. The extension is neither fixed to .txt nor to .csv. The delete operation allows using wildcard (*, ? but not the combination *.*) to remove a set of files.	filename.csv

◆**NOTE**

Example 18 in the online help shows the FTP client operation with a complete PLC program and Web interface.

7.3 FTP client / SD memory card settings

The input fields for the tab "FTP client / SD control tab" are described in this section.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

7.3.1 Enable FTP client and SD memory card control

If this function is enabled, an FTP server must be available. The PLC program should also be prepared for FTP client administration. As soon as the FTP client function (see p. 66) is enabled, certain internal data registers in the PLC will be polled by the FP Web-Server at regular intervals to detect when an FTP client operation has to be started.

◆**NOTE**

Disable this function if not used to save the FP Web-Server's memory.

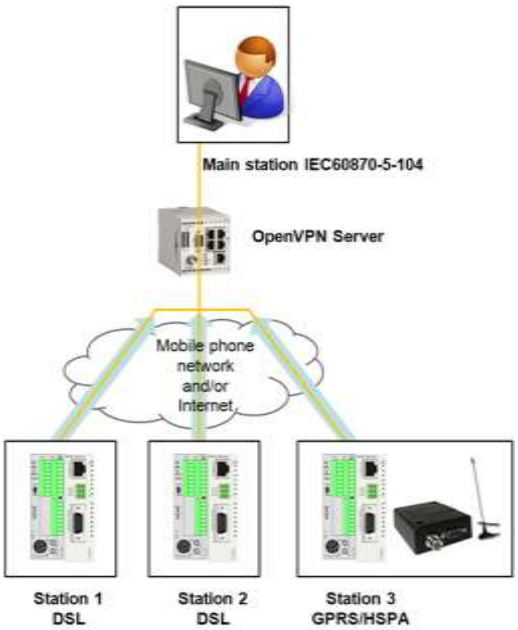
For further information please refer to the online help under the keyword "FTP client / SD memory card settings".

Chapter 8

OpenVPN client

8.1 OpenVPN client function of the FP Web-Server

The FP Web-Server can connect to an OpenVPN server, e.g. to use a virtual private network with a set of IP addresses or for security issues.



The FP Web-Server can use the OpenVPN tunnel for all communication routes and functions of the unit. Please refer to Example 19 for an open VPN connection example.

A) Using OpenVPN technology with Ethernet LAN:

Please ask your network administrator to clarify the following **requirements**:

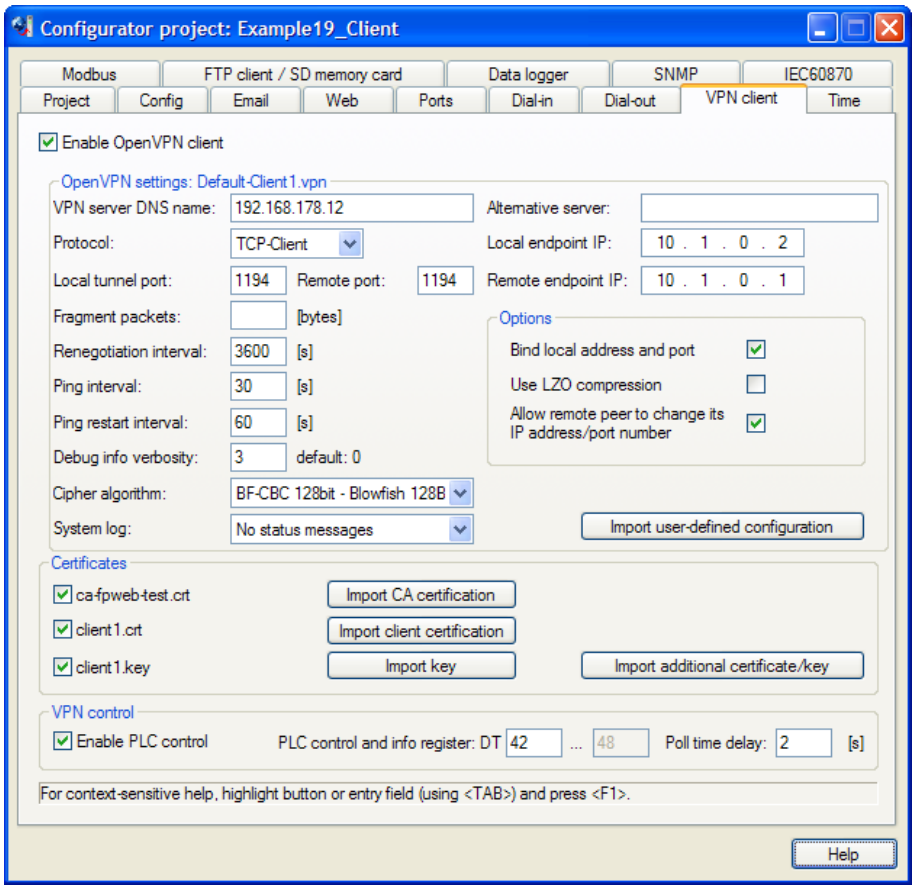
- An OpenVPN server is required as communication partner. Also refer to setup of an individual Ethernet LAN (see p. 192).
- The address of the OpenVPN server has to be stated correctly in the FP Web Configurator project.
- To establish a connection, the OpenVPN configuration file, certificates and security keys must be known. Please ask the administrator of the VPN server to obtain the authentication and configuration files.

B) Dialing up an OpenVPN server via a mobile network or the Internet:

- An additional wireless unit (e.g. GPRS, HSPA, LTE) or a modem is needed to dial up an ISP.
- To set up the dial-up function, the email function or a dial-up PLC signal is needed. Please refer to Internet email settings (see p. 148).

8.2 OpenVPN client settings

The input fields for the tab "VPN client" tab are described in this section.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

8.2.1 Enable OpenVPN client

If this function is enabled, the FP Web-Server can communicate with an OpenVPN server, e.g. to specify security, and participate in a virtual private network. The PLC program should also be prepared for the OpenVPN client control. As soon as the OpenVPN client function (see p. 72) is enabled, certain internal data registers in the PLC will be polled by the FP Web-Server at regular intervals to detect when an OpenVPN connection has to be started.

◆NOTE

Disable this function if not used to save the FP Web-Server's memory.

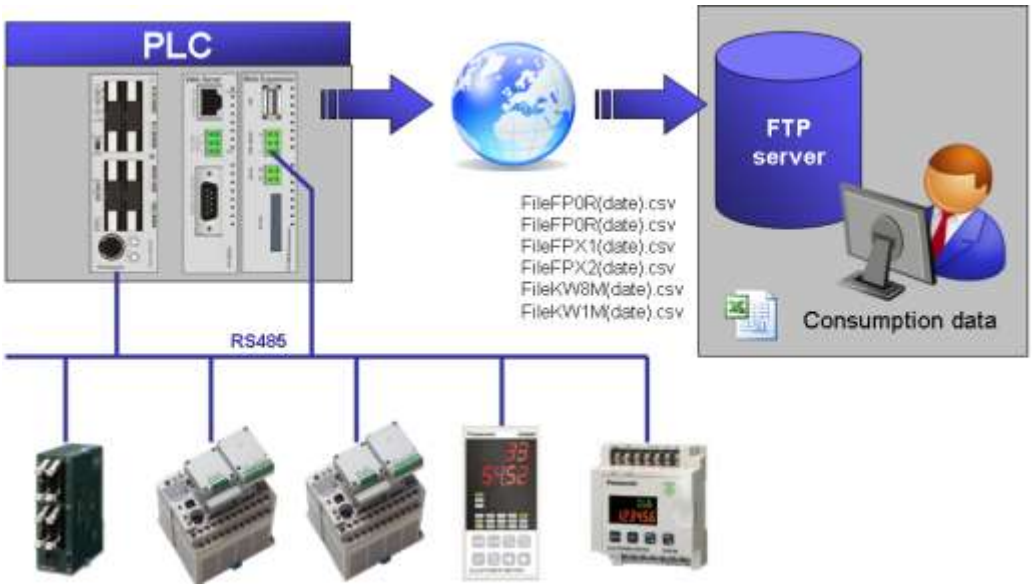
For more detailed information, refer to the online help under the keyword "OpenVPN client settings".

Chapter 9

Data logger setup

9.1 Data logger function

Data from specified devices is collected and stored in the FP Web-Server unit's RAM and written as log files to an SD memory card of the FP Web expansion unit in CSV format when specified.



You must activate the NTP function (see p. 158) of the FP Web-Server and/or the PLC real-time clock with backup battery because the clock information is necessary in order to trigger logging activities.

CAUTION

To prevent data from being inadvertently lost or deleted from the SD memory card, take appropriate precautionary measures.

- **If you do not want data to be overwritten in the RAM logging area when the SD memory card is full, set up a device to send notification when the SD memory card has little space left.**
- **Eject the SD memory card only when no data is being written to it, e.g. by using Stop Writing Control.**
- **In case of a power failure, stop logging data and creating logging files in time by using an appropriate device.**

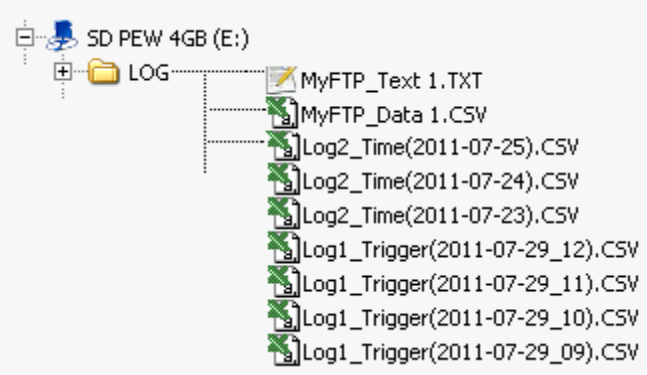
Specifications on the logging area and log files.

Item	Description
Number of log files	1 to 16
Number of data points (devices) per file	50
Total number of devices that can be stored in all 16 log files	Max. 160 data points
Number of records per device that can be stored in the RAM (cache)	100

9.2 Log file and CSV file structure

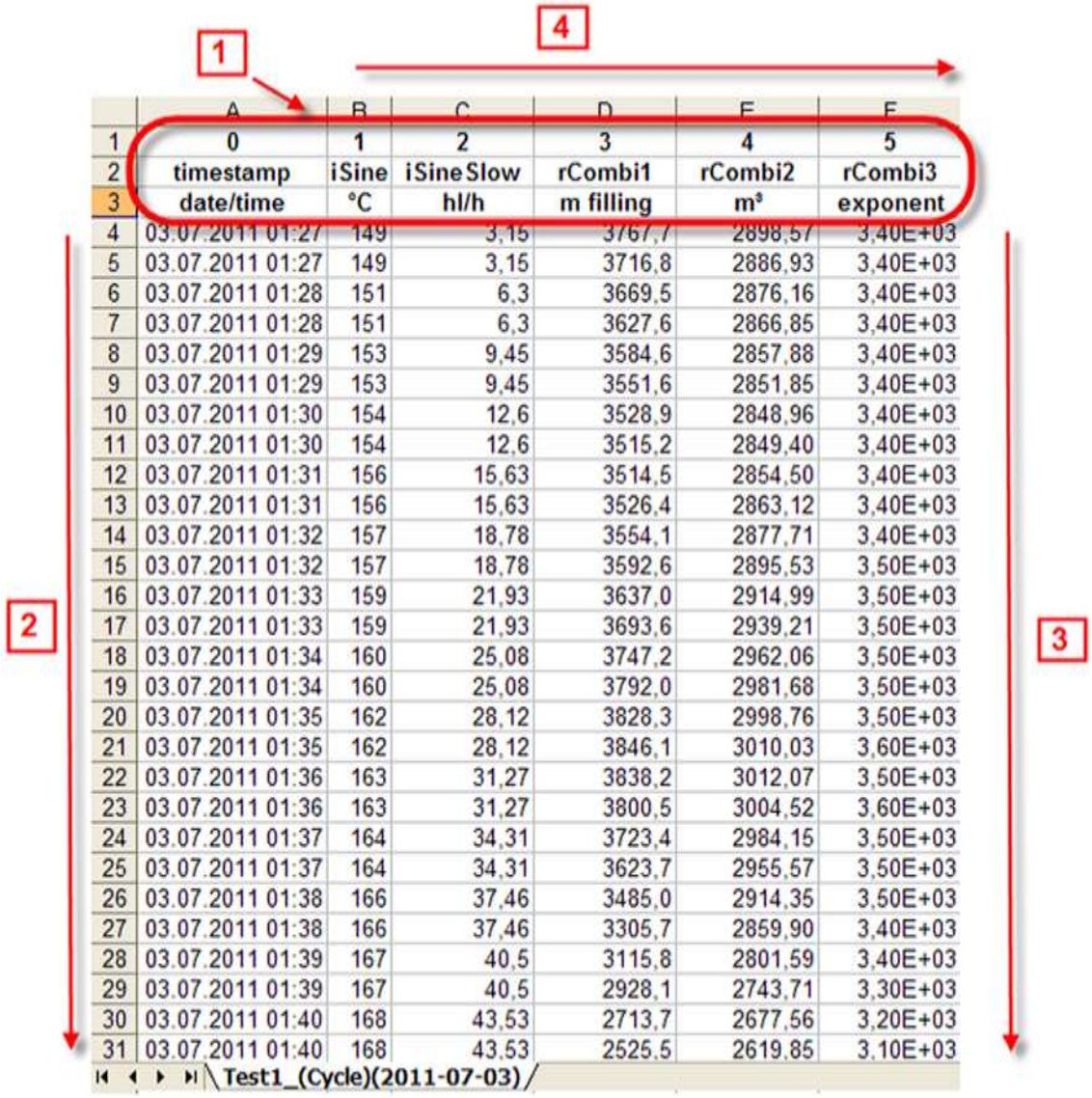
Log file structure

The file name, date and time of the logging data is recorded in CSV format on the SD memory card.



CSV file structure

CSV files created are structured as illustrated.



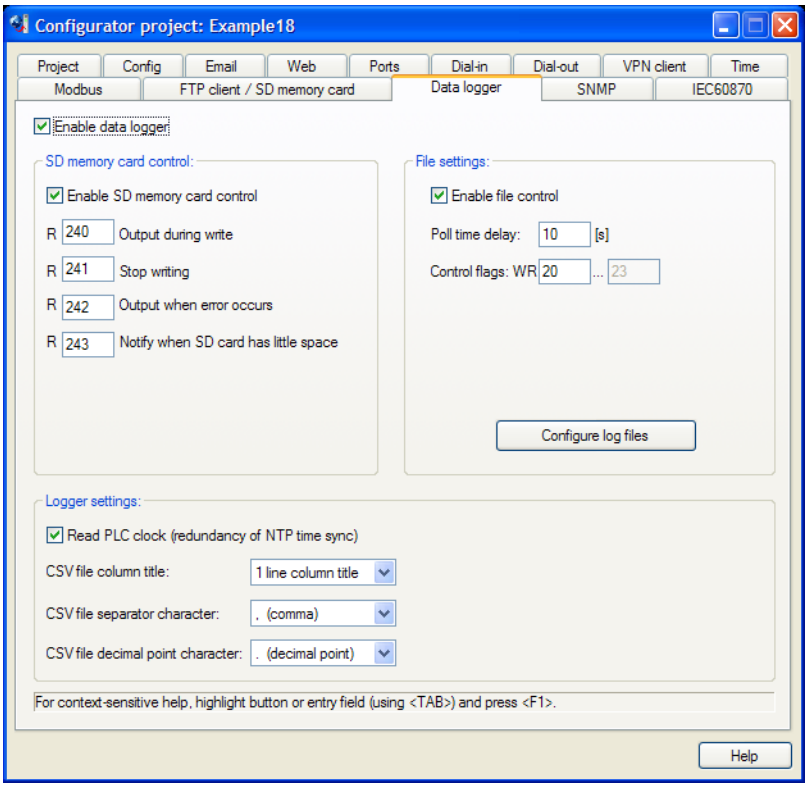
	A	B	C	D	E	F
1	0	1	2	3	4	5
2	timestamp	iSine	iSine Slow	rCombi1	rCombi2	rCombi3
3	date/time	°C	hl/h	m filling	m³	exponent
4	03.07.2011 01:27	149	3,15	3767,7	2898,57	3,40E+03
5	03.07.2011 01:27	149	3,15	3716,8	2886,93	3,40E+03
6	03.07.2011 01:28	151	6,3	3669,5	2876,16	3,40E+03
7	03.07.2011 01:28	151	6,3	3627,6	2866,85	3,40E+03
8	03.07.2011 01:29	153	9,45	3584,6	2857,88	3,40E+03
9	03.07.2011 01:29	153	9,45	3551,6	2851,85	3,40E+03
10	03.07.2011 01:30	154	12,6	3528,9	2848,96	3,40E+03
11	03.07.2011 01:30	154	12,6	3515,2	2849,40	3,40E+03
12	03.07.2011 01:31	156	15,63	3514,5	2854,50	3,40E+03
13	03.07.2011 01:31	156	15,63	3526,4	2863,12	3,40E+03
14	03.07.2011 01:32	157	18,78	3554,1	2877,71	3,40E+03
15	03.07.2011 01:32	157	18,78	3592,6	2895,53	3,50E+03
16	03.07.2011 01:33	159	21,93	3637,0	2914,99	3,50E+03
17	03.07.2011 01:33	159	21,93	3693,6	2939,21	3,50E+03
18	03.07.2011 01:34	160	25,08	3747,2	2962,06	3,50E+03
19	03.07.2011 01:34	160	25,08	3792,0	2981,68	3,50E+03
20	03.07.2011 01:35	162	28,12	3828,3	2998,76	3,50E+03
21	03.07.2011 01:35	162	28,12	3846,1	3010,03	3,60E+03
22	03.07.2011 01:36	163	31,27	3838,2	3012,07	3,50E+03
23	03.07.2011 01:36	163	31,27	3800,5	3004,52	3,60E+03
24	03.07.2011 01:37	164	34,31	3723,4	2984,15	3,50E+03
25	03.07.2011 01:37	164	34,31	3623,7	2955,57	3,50E+03
26	03.07.2011 01:38	166	37,46	3485,0	2914,35	3,50E+03
27	03.07.2011 01:38	166	37,46	3305,7	2859,90	3,40E+03
28	03.07.2011 01:39	167	40,5	3115,8	2801,59	3,40E+03
29	03.07.2011 01:39	167	40,5	2928,1	2743,71	3,30E+03
30	03.07.2011 01:40	168	43,53	2713,7	2677,56	3,20E+03
31	03.07.2011 01:40	168	43,53	2525,5	2619,85	3,10E+03

Test1_(Cycle)(2011-07-03)

No.	Item	Description
①	Logging device information	Line 1: registration no. Line 2: name (specified by user) Line 3: kWh: unit (specified by user)
②	Trigger setting	Specified time with e.g. 30s interval.
③	No. of records	Number of records stored in a file.
④	No. of data points	Number of data points that can be executed simultaneously.

9.3 Data logger tab input fields

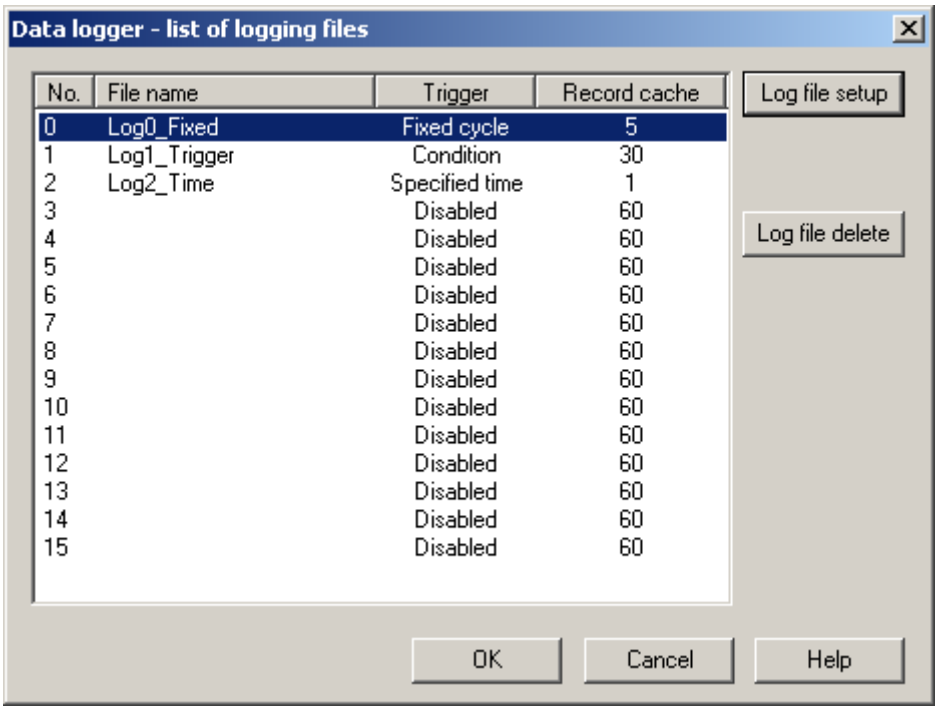
In this section, the input fields on the "Data logger" tab are described.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

9.4 Configure log files

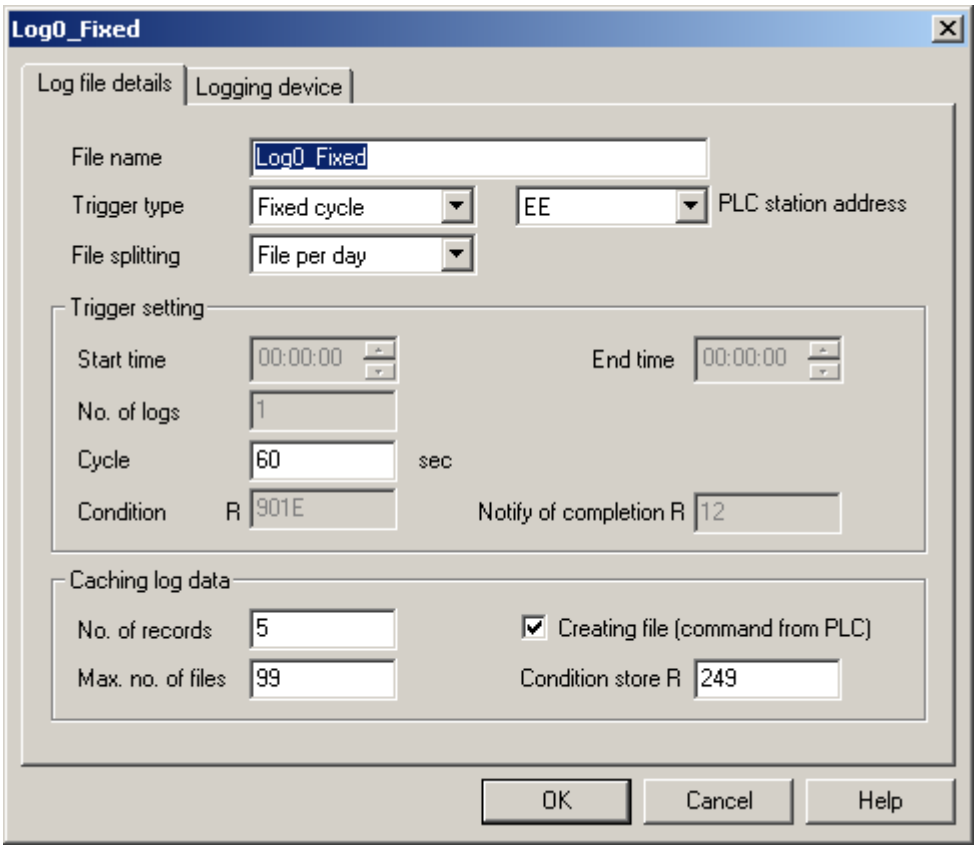
On the data logger tab, when you press [Configure log files], a list of logging files opens.



To configure the individual log files, click on the file to highlight it and press [Log file setup]. You can then specify log file details (see p. 81) and configure the logging device (see p. 82) itself.

9.4.1 Log file details

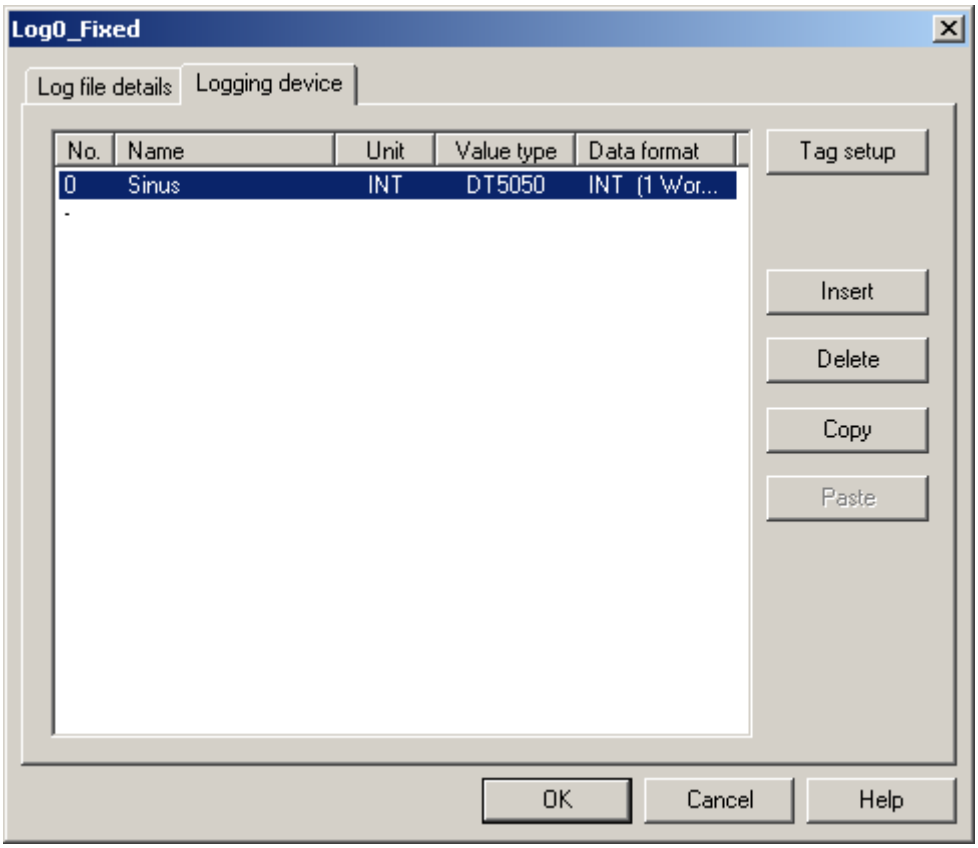
Configure basic settings for the log file here.



◆NOTE

Restriction: the same settings can be used for multiple logging files. However, a 1-second trigger can only be set for 1 file. Avoid performance problems resulting from overly fast polling for triggers and intervals.

9.4.2 Logging device setup



The device list allows to insert, duplicate or delete records. The insert function increases the device address and the device name. With the copy and paste function, a record will be duplicated without changes.

Chapter 10

HTTP server functions/web pages

10.1 Details on the FP Web-Server's web page functions

For further information see:

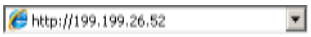
- **Calling Parameter** (see p. 86)
  Browser addressing, e.g. http:\\....\plc?file&Y0=1&A=5&R0=1
- **Data Fields** (see "**Data fields for displaying PLC data on HTML pages**" on p. 90)
  PLC data display addressing in HTML files, e.g. {DT100_6_4.2f}
- **Input Fields** (see "**Defining input fields for PLC data on HTML pages**" on p. 100)
  PLC data entry addressing in HTML files, e.g. <input name=DT200_6_d>
- **Java Applet**
  Description of the optional Java Applets for displaying rapidly changing PLC data
- **HTML Examples** (see "**Description of the HTML examples**" on p. 183)
  Descriptions for the supplied configuration samples

Info:

The http server of the FP-WEB2 can handle up to 9 simultaneous browser connections. Each HTML page (frame or browser) needs a separate connection and an additional MEWTOCOL port if the MEW.JAR Java applets are used.

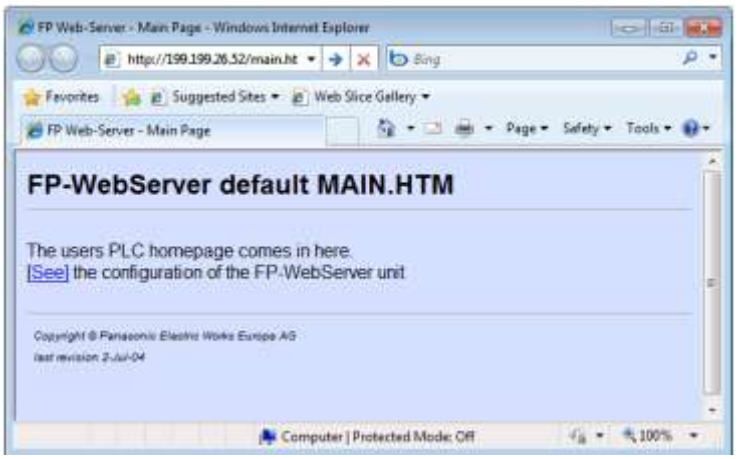
10.1.1 Testing the FP Web-Server functions

For details on how to put a FP Web-Server with HTML Pages in operation, see also First Steps (see p. 37). The HTML Pages of the FP Web-Server can be displayed by a standard Internet browser. Therefore, start the Internet browser and enter the IP address of the FP Web-Server in the input field "Location":

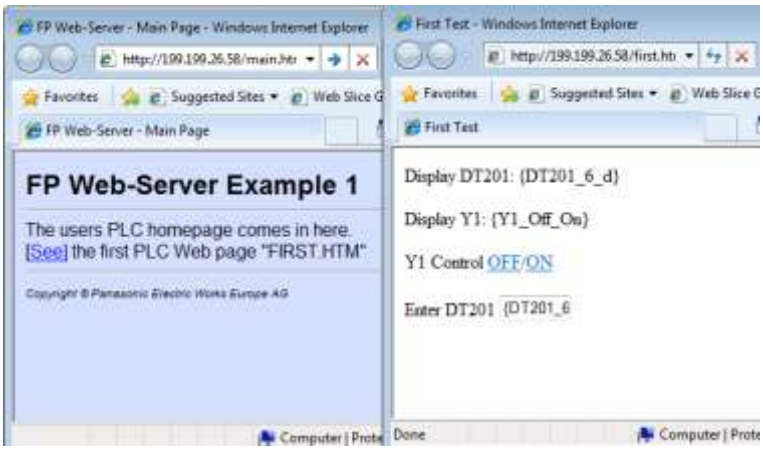


The HTML page **"MAIN.HTM"** of the FP Web-Server will be displayed.

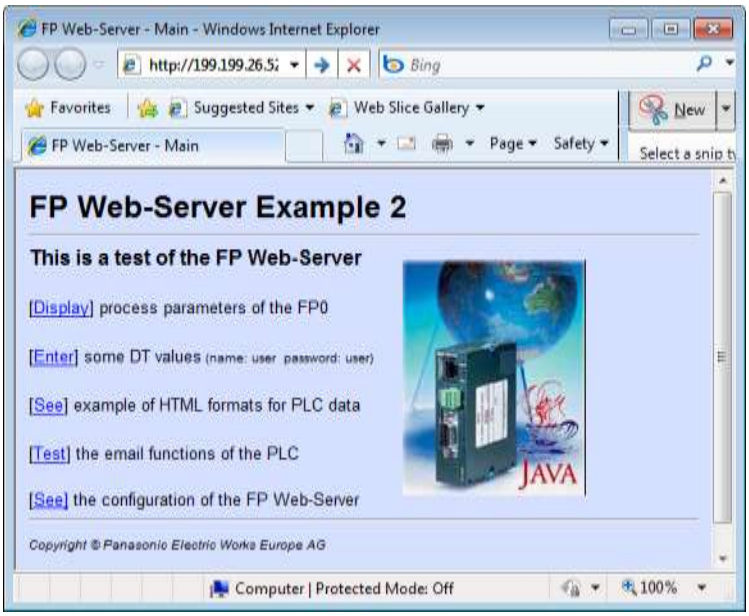
For the "default_project" (without PLC data, FP Web-Server may not be connected to a PLC) for example:



Or for 'Example1' (with PLC Data):



Or for 'Example2':



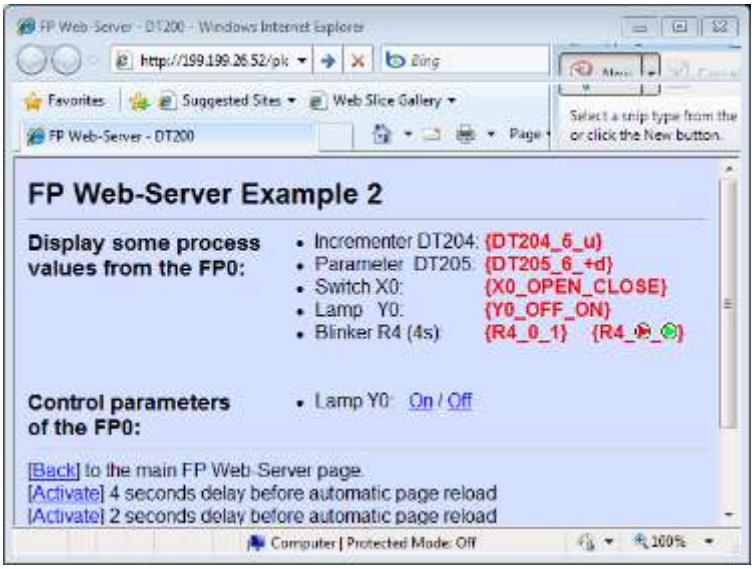
10.1.2 Internet browser settings

If the FP Web-Server is operated in an office network with a Proxy gateway to the Internet, the access to the FP Web-Server HTML pages might take a long time. In this case, shut off the Proxy function of the browser for this specific IP address of the FP Web-Server. For the browser setup refer also to TCP/IP Setup: Configurator/Browser Operations Via LAN.

10.1.3 Generalities on PLC data fields in HTML pages

"Example2" (provided in your installation directory) is used for the following explanation:

Here is the HTML page **'MAIN.HTM'** of the FP Web-Server displayed. By clicking the links you can test the individual pages. For example, by clicking [Display] the DT200 page (with PLC data) is displayed:



By clicking on [On] or [Off] the output of the PLC can be set.

This page contains PLC data fields whose data address has been entered in the HTML source text. The address is replaced by PLC data upon the calling of the browser. For the format (see p. 90) and the input in a HTML code, see also Http Address, CGI Function PLC and Calling Parameter (see p. 86).

To accomplish this, the HTML pages that should also display PLC data are marked with the data name extension .MTM instead of .HTM. This is done with the assistance of a "HTML-Compiler" (integrated into the Configurator) before the transmission to the FP Web-Server is carried out by the Configurator.

In the example above, the PLC data are (not necessarily) marked in red. These data were requested from the PLC by the MEWTOCOL Address that is defined in the Configurator project. This '"default" MEWTOCOL address can be modified by the calling parameter &A=x in the "Location" field. A description of the parameter can be found under Http Address, CGI Function PLC and Calling Parameter (see p. 86).

10.1.4 Http address, CGI function PLC and calling parameter

Please also note the display/input in the "Location" field: **"http://199.199.26.52/plc?dt200"** of the browser. Using the parameter following the IP address you can control various functions.

Http Address	Function
http://199.199.26.52/	Downloads MAIN.HTM (in MAIN.HTM you can neither use PLC data fields nor password protection)
http://199.199.26.52/zzz.HTM	Downloads HTML page zzz.HTM

Http Address	Function
http://199.199.26.52/plc?yyy	Downloads HTML page yyy.MTM including PLC data. The file format .MTM is equivalent to the .HTM format plus PLC data. The .MTM file is generated by the Configurator.
http://199.199.26.52/plc?yyy&U=xx	With automatic reload/ update after xx seconds. The maximum refresh rate is reached with the input &U=0. For rapidly changing PLC data, we recommend using Java Applets, which can handle a much higher data update/display rate.
http://199.199.26.52/plc?yyy&A=xx	All following PLC data displayed (including yyy.MTM) are addressed to the PLC with the C-Net/MEWTOCOL Address xx (0..32). 0 is equivalent to the universal address EE. The default address (if no &A parameter is used) can be determined in the base configuration setting PLC MEWTOCOL Address. The &A operator does not affect the default addressing for input fields.
http://199.199.26.52/plc?yyy&Rxxy=w	Before downloading the page yyy, the internal relay with the address Rxxy is set (w=1) or reset (w=0). (xx=0...999 y=0...F w=0/1)
http://199.199.26.52/plc?yyy&Yxxy=w	Before downloading the page yyy, the output with the address Yxxy is set/ reset. (xx=0...999 y=0...F w=0/1)
http://199.199.26.52/plc?yyy&Y0=1&A=5&Y0=1	Composed types of commands are also possible!

Comments:

- **http://199.199.26.52/'** can be omitted for relative hyperlinks in an .HTM (or .MTM).
- Only when the http server is turned on can the modification of PLC data (via &Y and &R commands) be temporarily turned off. If an error occurs, writing to the PLC may be prevented. Therefore the functioning of the Ys and Rs is also affected.
- The functions &Y and &R can be limited with [Add. Range] (see p. 115).
- The name of the CGI function must be in small letters, i.e. "http://199.199.26.52/PLC?yyy" will not work.
- The PLC address of the &R and &Y commands cannot be replaced by a variable name, i.e. "http://199.199.26.52/plc?yyyeR'name'=1" will not work. For further information, refer to Using Variable Names Instead of Absolute PLC Addresses (see p. 96).
- If spaces or Japanese characters are used, an error message pops up before transmission to the FP Web-Server.
- All file names have to correspond to the DOS 8.3 format, i.e. the name may only have up to 8 characters and the extension (type) only up to 3 characters after the period. (FP-WEB2 (see p. 21): Long file names without special characters can be used.)

For programming examples in C++ and Java to control PLC relays via the http function, please refer to the online help under the keyword "Appendix K) Programming Samples: Access to the FP Web-Server / PLC via TCP".

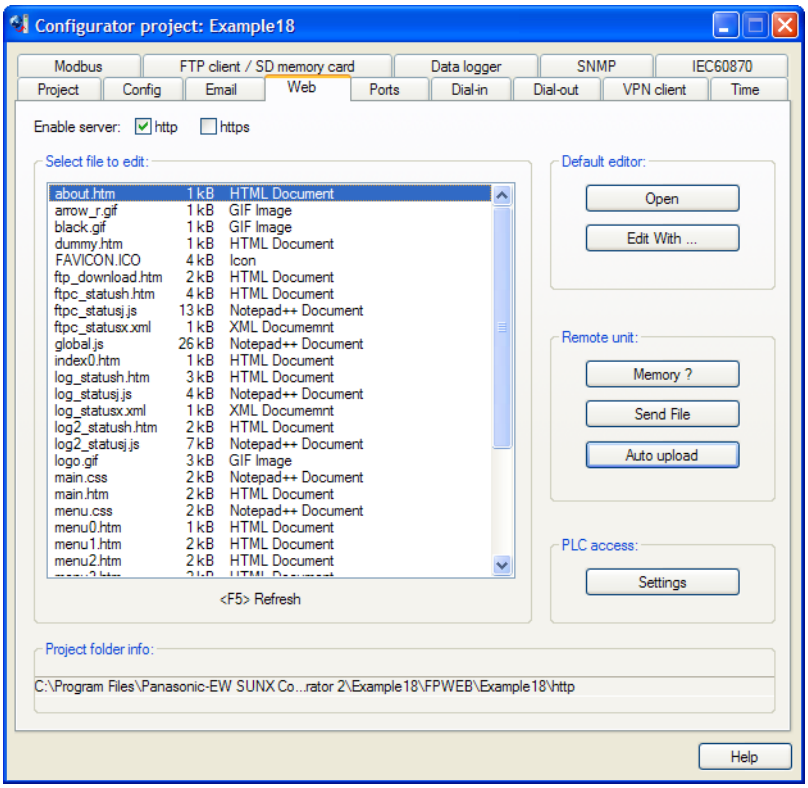
10.1.5 Configurator settings concerning the http server

Please refer to the online help for the following descriptions:

1. Password Protection
2. PLC Interface Settings
3. Http Server enable (see p. 114)
4. Automatic page reload (see p. 108) upon submitting PLC data

10.1.6 Editing HTML pages

All web pages the FP Web-Server should be able to display should be created and/ or edited on a computer. To do so, it would be best to mark the respective file of the project in the configurator in the "Web" screen and start the preinstalled editor of the operating system by double-clicking (or pressing <Enter> or [Open]). For detailed information, please refer to configurator HTTP administration and functions (see p. 114).



Alternatively you can select an installed editor by pressing [Edit With]. The editor can be an HTML editor or a standard ASCII text editor.

ASCII text editor:

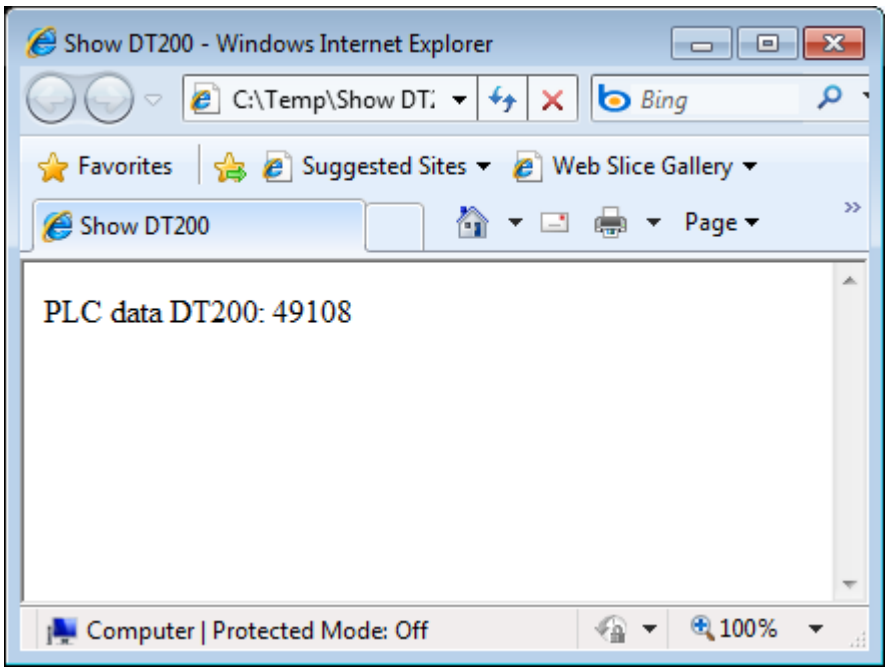
With a standard text editor like the "NotePad" of the operating system, all HTML features can be ideally utilized. Nevertheless it takes time to get used to the HTML format. For training purposes, the following links are recommended:

- http://archive.ncsa.uiuc.edu/General/Internet/WWW/

- http://www.html.net/ http://www.html.net/
- http://WDVL.com/Authoring/HTML/
- http://whatis.techtarget.com/
- http://de.selfhtml.org/ http://de.selfhtml.org/

The first HTML page that displays PLC data might look as follows (text file):

```
<html>
<head>
<title>Show DT200</title>
</head>
<body>
<p>PLC data DT200: {DT200_5_u}</p>
</body>
</html>
```



HTML editor:

Standard HTML editors like "KompoZer" and "MS-Word" provide many user-friendly functions to design HTML pages. Many browsers also provide an integrated editor.

An easy way to design web pages (without the knowledge of programming languages like HTML) is to use the FP Web Designer software from Panasonic (AFPS36510), an easy-to-use editing tool to help the users to create websites for visualizing process data collected by the FP Web-Server.

Recommended browsers are current up-to-date version of the standard browsers like e.g. Mozilla Firefox, Microsoft Internet Explorer, Apple Safari or Google Chrome.

10.1.7 Compiling and transferring HTML pages

To insert PLC data fields into an HTML page, the PLC address information is enclosed in {...} curly brackets. You will find a detailed description of the format of the {...} PLC data fields in the following section. If an HTML page with {...} PLC data fields has been created/ changed, it has to be transformed into an .MTM file by the "HTML-Compiler" and transferred to the FP Web-Server afterwards.

This is done automatically upon pressing [SEND] in the Configurator. If the 'HTML Compiler' discovers an input error, you receive an error message and the location of the error found in the HTML code is displayed. The compiler will likewise issue an error message if an .xml file has the same name as an .htm(l) file. If the compilation is carried out error free, the file .MTM is created and transferred to the FP Web-Server.

An .MTM file corresponds to an .HTM file except for the following issues:

- A Java Script sub-function has been added to the "Header" to display submit confirmations.
- A meta tag has been inserted into the "Header" to control the optional, automatic reload of the page.
- The {...} PLC data fields are replaced by the respective number of spaces.
- The information (addresses, formats...) of the PLC data fields were attached as binary data.

◆**NOTE**

- **The maximum size of the .HTM and the .MTM file is limited to 64kB.**
- **Please do not use special characters and umlauts in {...} PLC data fields. The following characters are strictly forbidden:** " _ % \ < > & ' ?

10.1.8 Data fields for displaying PLC data on HTML pages

To integrate PLC data display fields into an HTML page, the following parameters are enclosed in {...} curly brackets and inserted directly at the respective location on the HTML page.

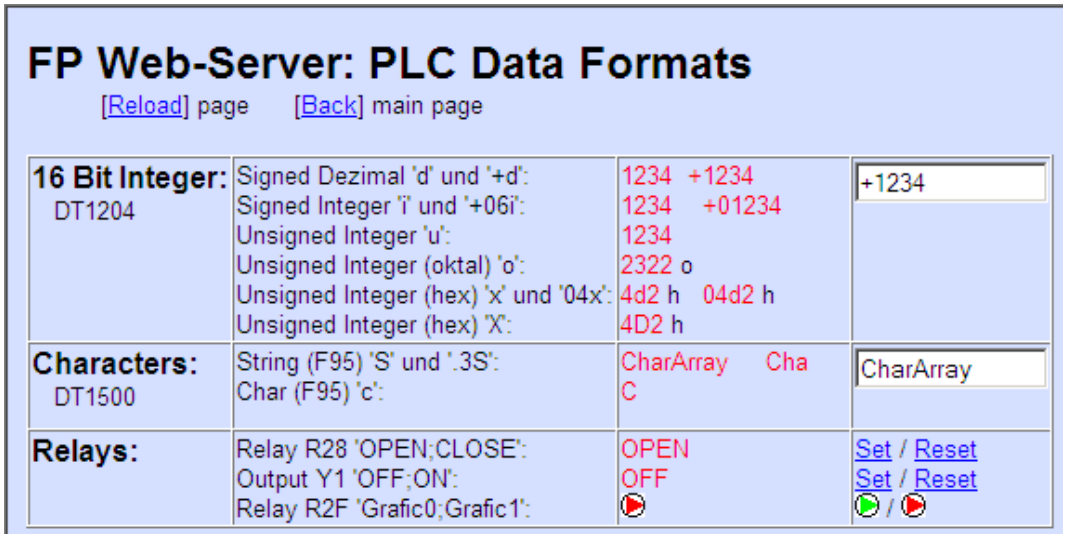
- Data type and data address of the PLC
- Number of display locations on the page (for numbers)
- Specification of the format displayed (format of numbers or text ON/OFF for internal relay)

The {...} fields can only be seen in the HTML editor (ASCII Text Editor) and are replaced by the respective number of spaces by the "HTML-Compiler". Such a file is then named an .MTM file and saved on the FP Web-Server. Upon the request of an Internet browser, the fields are filled with he current data by the FP Web-Server and displayed by the browser. A maximum of 1000 PLC data fields are allowed and will be checked by the "HTML-Compiler".

Display on the HTML editor:

```
<td VALIGN=TOP><b><font face="Arial"><font color="#FF0000">{DT204_5_u}</font></font></b>¶
<br><b><font face="Arial"><font color="#FF0000">{DT205_6_+d}</font></font></b>¶
<br><b><font face="Arial"><font color="#FF0000">{X0_OPEN_CLOSE}</font></font></b>¶
<br><b><font face="Arial"><font color="#FF0000">{Y0_OFF_ON}</font></font></b>¶
<br><b><font face="Arial"><font color="#FF0000">{R4_0_1}    ¶
{R4_<img SRC="P01r1.gif" ALT="P01r1.gif (670 Byte)" height=13 width=13>_<img SRC="P01g1.gif"
```

Display on the browser:



The setup of the field for PLC data display always has the format **{TTxxxy_aa_bb}** with the following parameters:

TT	PLC Data Type. Implemented PLC data identifiers: **DT, FL, LD, R, X, Y**
xxxy	Address of the PLC Data, e.g. DT200 or Y7. The address range supported by the FP Web-Server is 0 ... 32765. For internal relays, the last position of the address is a hexadecimal number from 0...F, e.g. R2F
aa	Numbers: Number of characters reserved in HTML. The rest will be cut off. Internal Relays: Text that should be displayed at internal relay state 0, e.g. **OFF**.
bb	Numbers: Number format, i.e. type of the display. See below. Internal Relays: Text that should be displayed at internal relay state 1, e.g. **ON**.

The data type and address part **TTxxxy** can be replaced by the corresponding variable name (see p. 96) from the FPWIN Pro project, e.g. **{'VarName'_aa_bb}** or **{'name'_5_i}**.

There is no space allowed between the curly bracket and the first character. For example **{ DT3_4_u}** or **{ 'name'_5_i}** is not allowed. It will be interpreted as a Java Script (see p. 109) command and copied unchanged into the final HTML file.

The setup of the format specification bb for numbers is **[flags][width][.precision][l]type**

Only the specification 'type' is obligatory. The other inputs are optional. In the following list the corresponding FPWIN Pro types are listed in brackets:

Type	**d** = decimal, whole-numbered (16-bit, **INT**)
	i = decimal, whole-numbered (16-bit, **INT**)
	u = unsigned decimal, whole-numbered (16-bit, **WORD**)
	o = unsigned octal (16-bit, **WORD**) (only display, not for data entry)
	x = unsigned hexadecimal, lower case (16-bit, **WORD**)
	X = unsigned hexadecimal, upper case (16-bit, **WORD**)
	f = floating point number without exponent (32-bit, **REAL**)
	e = floating point number with exponent (small **e** for exponent, **REAL**)
	E = floating point number with exponent (capital **E** for exponent, **REAL**)
	g = either **e** or **f**, depending on what seems to be more compact (**REAL**)
	G = like **g**, but the exponential display also taken into account (**REAL**)
	s = FPWIN Pro strings with current string length in the "Header" (**STRING[]**)
	S = string without "Header". Generated like with F95. (**WORD[]**)
	c = a single ASCII character
long Type	**ld** = 32-bit decimal, whole-numbered (**DINT**)
	li = 32-bit decimal, whole-numbered (**DINT**)
	lu = 32-bit unsigned decimal, whole-numbered (**DWORD**)
	lo = 32-bit unsigned octal (**DWORD**)
	lx = 32-bit unsigned hexadecimal, lower case (**DWORD**)
	lX = 32-bit unsigned hexadecimal, upper case (**DWORD**)
precision	A number that defines the number of decimal positions for displaying floating point numbers (types: 'f' 'e' 'E' 'g' 'G'). When used with 16- or 32-bit integers (types: 'd' 'i' 'u' 'o' 'x' 'X' 'ld' 'li' 'lu' 'lo' 'lx' 'lX') a decimal point is placed in the integer number string. The number of decimal places defined with the '.precision' ranges from 1 to 9. Refer to Example f.) in Examples to Display PLC Data in an HTML Page (see p. 92).
width	A number that gives the minimum length of the field. If the number is shorter, the field is filled up with spaces (or zeroes).
flags	The following characters are permitted:
	+ = The algebraic sign (+ or -) is always indicated.
	0 = Leading zeroes are indicated.
	' ' = (blank character) Prefix the output value with a blank if the output value is signed and positive.
	# = Forces the output value of the e, E, or f format to contain a decimal point (but only if digits follow). When used with the g or G format, the # flag also prevents the truncation of trailing zeros.

10.1.8.1 Examples to display PLC data in an HTML page

a. Signed and unsigned Integers

Format	PLC value	Display
{DT201_5_d}	-1 (FFFFhex)	"-1 "(same as {DT201_5_i})
{DT201_5_u}	-1 (FFFFhex)	"65535"
{DT201_6_d}	-32768 (8000hex)	"-32768"
{DT201_5_u}	-32768 (8000hex)	"32768"
{DT201_6_+d}	12345 (3039hex)	"+12345"

b. Spaces and zeros

Format	PLC value	Display
{DT201_6_i }	DT201=17	"17 " (HTML suppresses multiple spaces)
{DT201_6_06i}	DT201=17	"000017"
{DT201_6_ 6i}	DT201=17	" 17" (HTML suppresses multiple spaces)
{DT201_6_6.0i}	DT201=17	" 17" (HTML suppresses multiple spaces)

c. Hex display

Format	PLC value	Display
{DT201_4_4X}	DT201=17	" 11" (HTML suppresses multiple spaces)
{DT201_4_04X}	DT201=17	"0011"
{DT202_8_08lX}	DDT202=123456	"0001E240" (lower case L before X)
{DT202_8_8lx}	DDT202=123456	"1e240" (lower case L before X)

d. Float (real value) display

Format	PLC value	Display
{DT202_8_f}	DDT202=6.7 (40D66666hex)	"6.700000"
{DT202_8_7.2f}	DDT202=12345 (4640E400hex)	"12345.00"
{DT202_8_7.2f}	DDT202=23.456 (41BBA5E3hex)	" 23.46 "
{DT202_8_+7.2f}	DDT202=1234.56 (449A51EChex)	"+1234.56"
{DT202_13_e}	DDT202=123.4 (42F6CCCDhex)	"1.234000e+002"
{DT202_13_E}	DDT202=1234000 (4996A280hex)	"1.234000E+006"
{DT202_10_g}	DDT202=123.4 (42F6CCCDhex)	"123.4 "
{DT202_10_g}	DDT202=1234000 (4996A280hex)	"1.234e+006"

e. Display strings

Format	PLC value	Display
{DT602_5_S}	DT602-DT606="ABCDEFGHIJ"	"ABCDE"
{DT602_5_.3S}	DT602-DT606="ABCDEFGHIJ"	"ABC "
{DT600_12_s}	DT600=34 DT601=10 DT602-DT606="ABCDEFGHIJ"	"ABCDEFGHIJ "
{DT600_6_s}	DT600=34 DT601=10 DT602-DT606="ABCDEFGHIJ"	"ABCDEF"
{DT602_5_c}	DT602-DT606="ABCDEFGHIJ"	"A "
{DT602_1_c}	DT602-DT606="ABCDEFGHIJ"	"A"

f. Examples of displaying integers with a decimal point

With the latest version the '.precision' (range 1...9) format specification can be used to insert a decimal sign into an integer display.

Format	PLC value	Display
{DT201_7_.3i}	DT201=1234	1.234
{DT201_6_.4d}	DT201= -12	-0.0012
{DT201_7_05.2d}	DT201= 17	000.17
{DT201_16_.4lu}	DDT201= 12	0.0012
{DT201_5_.2X}	DT201= 12	0.0C

g. Relay register (1-bit) display:

Format	Display FALSE	Display TRUE
{R901D_0_1}	"0"	"1"
{R901D_off_on}	"off"	"on"
{R901D_0_1_2_3}	"0"	"1_2_3"
{R901D_<img SRC="icn1.gif">_ON}	Image icn1.gif	"ON" **Note:** Do not use spaces or the character '_' in file names

h. System time (UTC) in seconds since January 1, 1970 of the FP Web-Server unit:

Format	FP Web-Server value	Display
{TTxxx_10_li}	"1352283301"	"1352283301"

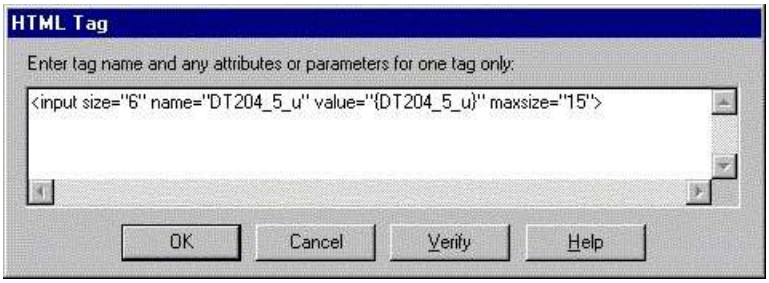
Further examples:
Additional basic format examples can be found in the online help under "Example2" and enhanced HTML PLC data formation in "Example13".

For PLC data entry (see p. 103) the same tags are used for formatting.

10.1.8.2 Comments

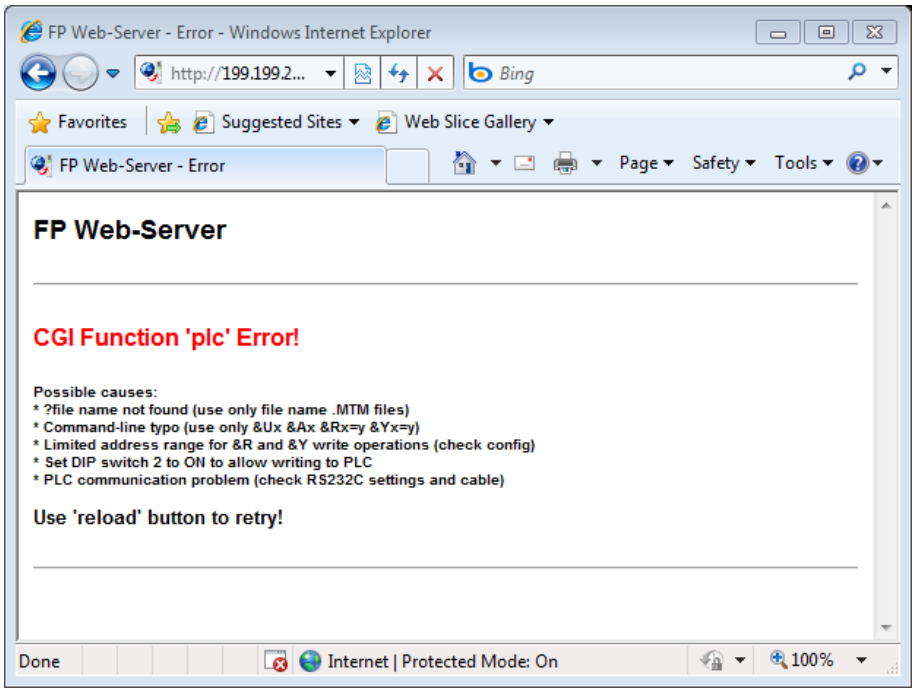
- The PLC data tag can also be used in XML files for data exchange. Please find details under "Notes on XML Files with PLC data (see p. 111)".
- In the text parameters **aa** and **bb**, which specify texts for the internal relay's statuses, it is also possible to use complex HTML blocks, e.g. to display graphics.

- Please do not use special characters and umlauts in {...} PLC data fields (and/ or the format parameters aa and bb). The following characters are strictly forbidden: " _ % \ < > & ' ?
- PLC data display fields can also be used in the [VALUE] field of the [SUBMIT] input fields to indicate an (editable) output value.



- Strings to be displayed have a maximum length of 52 characters. For PLC data input fields, only strings with 48 characters are possible.
- The special characters < and > are transcribed as ¼ and ¾ characters when a string is displayed on an HTML page. Please refer to ASCII Character Codes for Strings (see p. 113).
- The "default" MEWTOCOL address can be modified for the current browser's request of this page with the calling parameter &A=x .

If an HTML page from FP Web-Server is requested by the browser but the PLC data cannot be read out from the PLC (Baud Rate, Problems with Cables...), an HTML page with an error message will be displayed instead of the requested page.



10.1.9 Using variable names instead of absolute PLC addresses

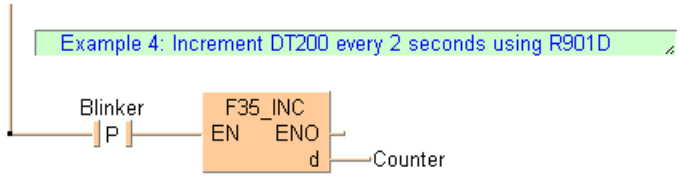
The data type and address part **TTxxxy** of a PLC data display or input field can be replaced by the corresponding variable name from the FPWIN Pro project, e.g. **{'VarName'_aa_bb}**. Global DUTs and arrays can be addressed (not case-sensitive) in the HTML pages, too.

During the compilation and the transfer of the HTML page the variable name is replaced by the absolute, global PLC address found in the CSV file. The CSV file is exported by FPWIN Pro and has to be stored in the Configurator project root folder. There is only one CSV file allowed in the Configurator project folder. The CSV file can have any name - but it must have the CSV extension (CSV file type).

For variable names please use numbers from 0 to 9, letters from A to Z and the underscore only! Please do not use special characters like * - < > $ % / & and so on! Upper and lower case letters have the same meaning. For example 'VarNam' is the same as 'varnam' or 'VARNAM'.

The same mechanism can be used for .XML and .JS files, too.

In the following example based on "Example4" the FPWIN Pro project with the following global variable list is used:



Global Variables

	Class	Identifier	FP Address	IEC Address	Type	Initial	Comment
0	VAR_GLOBAL	Blinker	R901D	%MX0.901.13	BOOL	FALSE	Sys Reg
1	VAR_GLOBAL	Counter	DT200	%MW5.200	WORD	0	Incrementer
2	VAR_GLOBAL	String1	DT600	%MW5.600	STRING[32]	' '	String
3	VAR_GLOBAL	Real1	DDT260	%MD5.260	REAL	3.14	Float

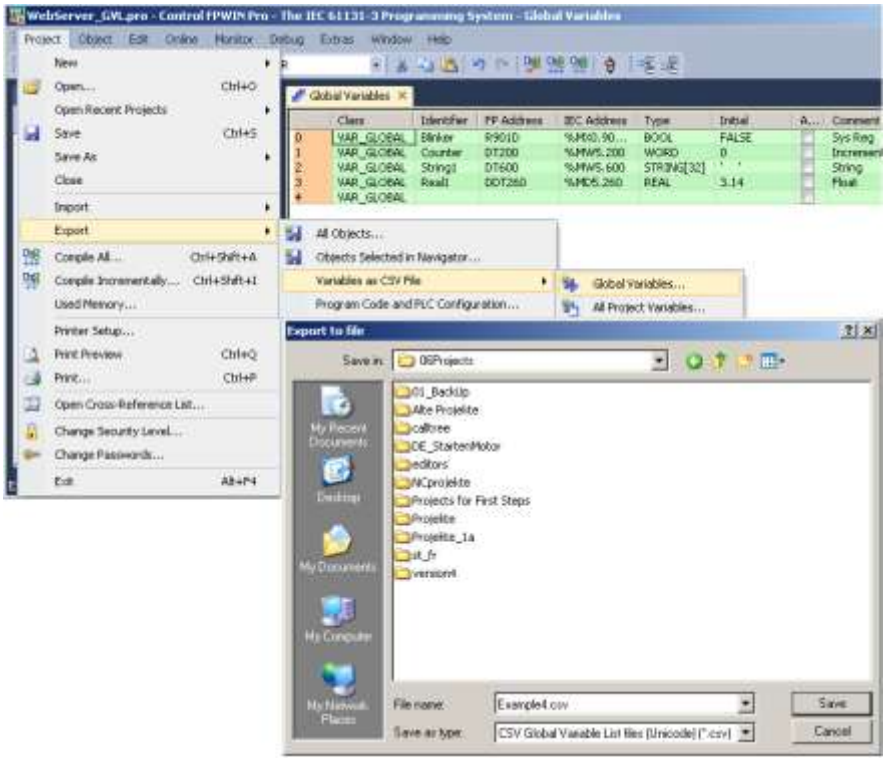
Carry out the following steps in FPWIN Pro to export the global variable list as a CSV file:

Generating a CSV File

PROCEDURE

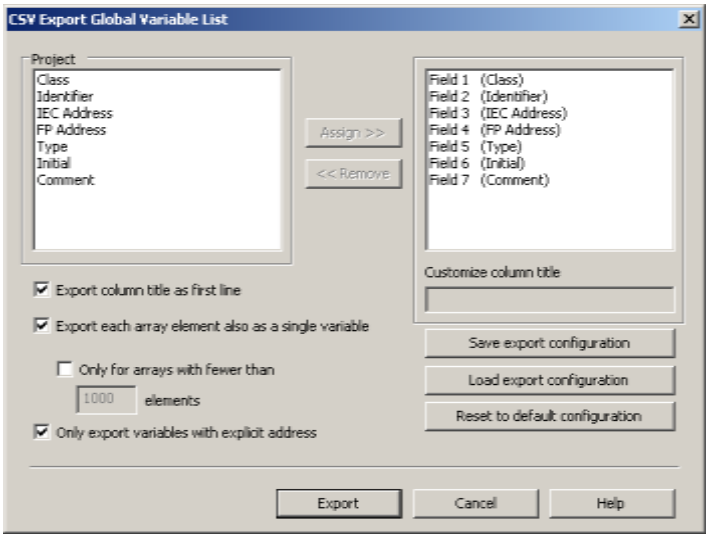
1. Use the menu items **Project** → **Export** → **Variables as CSV file** → **Global variables...**

2. Select the folder where the Configurator project is stored

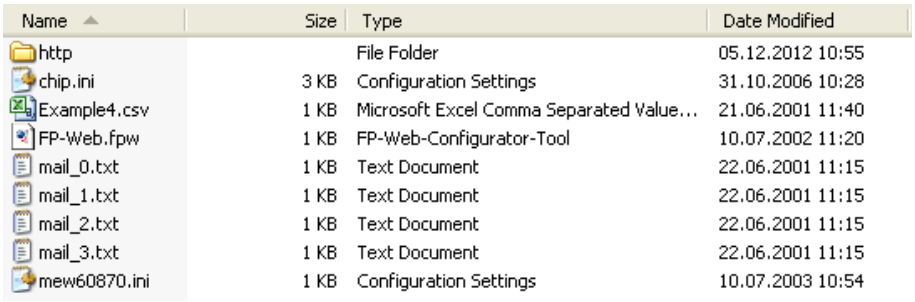


Please choose CSV Global Variable List files (Multibyte) (*.csv) as the file type.

3. Save the CSV file by clicking on [Export]

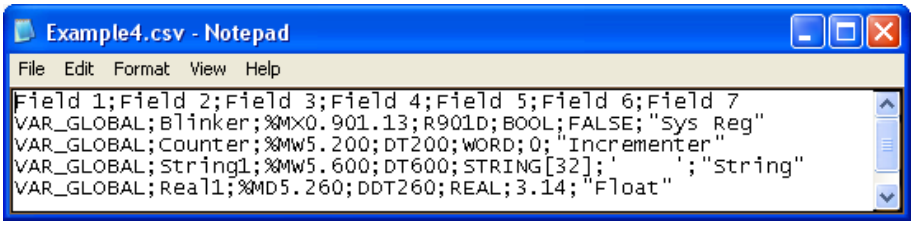


These steps have generated a CSV file in the Configurator project folder



Name	Size	Type	Date Modified
http		File Folder	05.12.2012 10:55
chip.ini	3 KB	Configuration Settings	31.10.2006 10:28
Example4.csv	1 KB	Microsoft Excel Comma Separated Value...	21.06.2001 11:40
FP-Web.fpw	1 KB	FP-Web-Configurator-Tool	10.07.2002 11:20
mail_0.txt	1 KB	Text Document	22.06.2001 11:15
mail_1.txt	1 KB	Text Document	22.06.2001 11:15
mail_2.txt	1 KB	Text Document	22.06.2001 11:15
mail_3.txt	1 KB	Text Document	22.06.2001 11:15
mew60870.ini	1 KB	Configuration Settings	10.07.2003 10:54

If a text editor is used the contents of the CSV file looks like this:

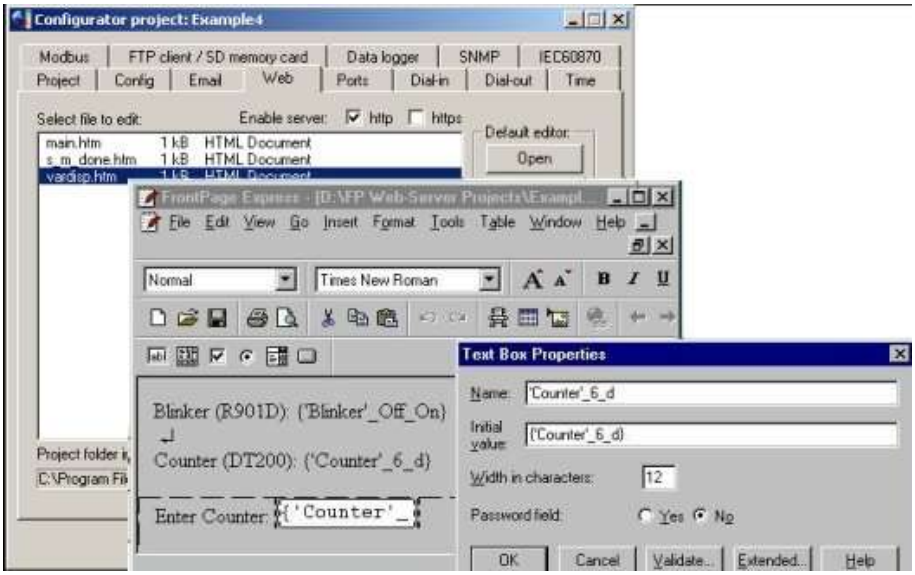


Accessing a CSV File via an HTML Page

PROCEDURE

1. If a Configurator project also has a FPWIN Pro CSV file, the PLC addresses in a HTML page can be referenced by its (global) variable name

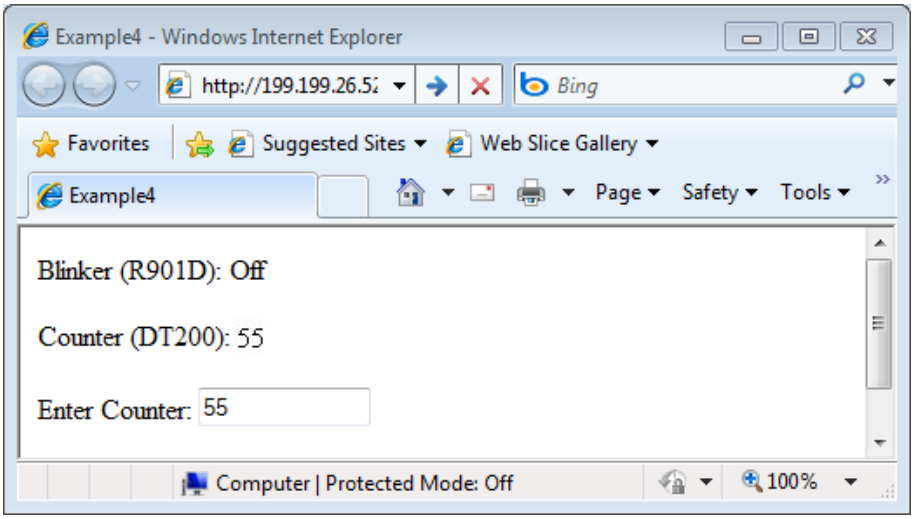
   In the HTML editor the use of these variable names instead of absolute address values can look as follows:



2. If this HTML page is now downloaded to the FP Web-Server the variable names

are replaced by the absolute PLC addresses found in the CSV file

Looking at the example above, with the browser it should look as follows:



10.1.10 Access protection for individual HTML pages

With the FP Web-Server, Password (see "PLC access rights" on p. 115) protection for ALL HTML pages containing PLC data can be switched on or off.

To protect individual pages only, enter the **{PW}** command in the HTML code. The text **{PW}** is no longer displayed on the browser after sending the page using [SEND] to the FP Web-Server.

Three variations are possible:

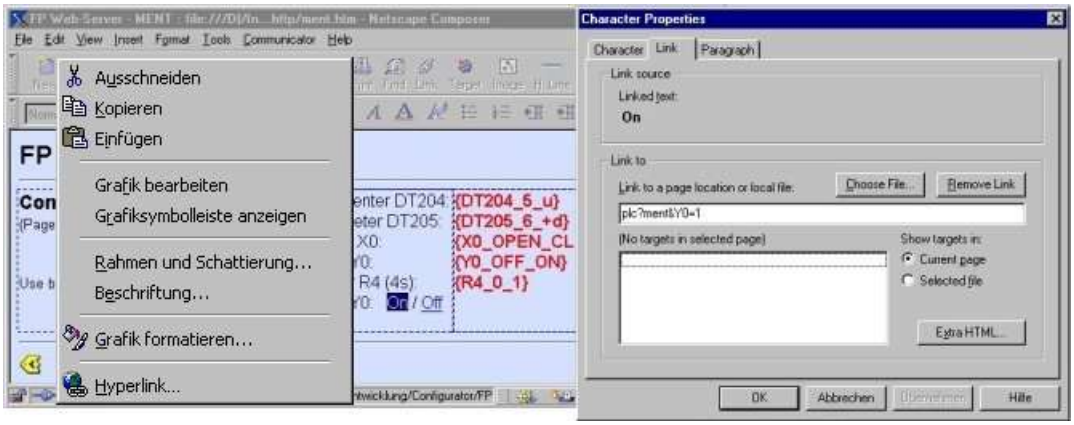
1. **Default password:**
   {PW} protects the page by user name and password
2. **Individual password:**
   With the marker **{PW_pppp}** set in the HTML code, the user name specified in the base configuration and the password **pppp** of the new command will be asked for before displaying the data. Hence you can assign different passwords to different HTML pages.
3. **IP lock security:**
   The tag **{PW_ip.ip.ip.ip}** enables only the computer with the IP address **ip.ip.ip.ip** to display the page, hence enabling designated computers to display certain HTML pages.
   The enabled IP address "ip.ip.ip.ip" can be a single address such as 192.168.200.55 or it can define an address range by using asterisks ('*'). For example, the tag {PW_192.168.200.*} allows clients with an IP address from 192.168.200.1 to 192.168.200.254 to access the protected HTML page.
   If the computer has the wrong IP address, the following standard dialog is displayed by the browser:

However, the FP Web-Server will not accept any entry.

The individual page protection (see "PLC access rights" on p. 115) should be switched ON in the configuration.

10.1.11 Inputs for controlling PLC internal relays on HTML pages

To control PLC internal relays via HTML pages, hyperlinks, as described under calling parameters (see p. 86), are used. In the example projects, you can find "links" for control in the DT200.HTM and MENT.HTM pages:

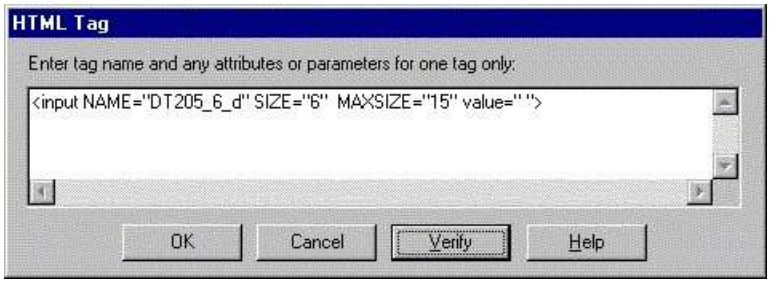


Alternatively, you can use HTML input fields and HTML buttons (see "Defining input fields for PLC data on HTML pages" on p. 100) to control PLC internal relays.

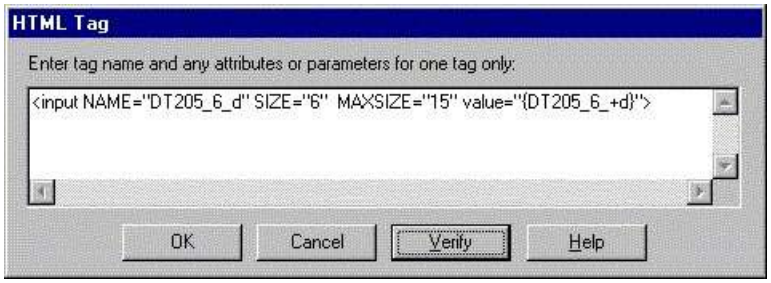
10.1.12 Defining input fields for PLC data on HTML pages

HTML [SUBMIT] fields are used to integrate PLC data input fields into an HTML page. The same PLC data field definition as for the display field is used, except for the curly brackets. Make sure that the definition is entered in the "Name" field.

An example thereto can be found in the online help of the configurator projects "Example2" and "Example13".



It is also possible to use a PLC display field to obtain an editable pre-allocation of the input field.

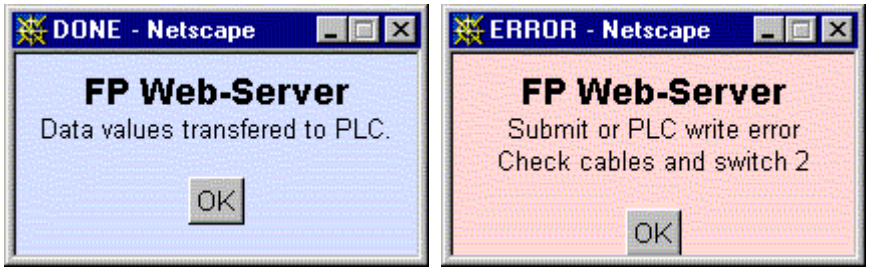


This has to be interpreted as follows:

VALUE="{DT205_6_+d}"	DT205 is read out of the PLC and interpreted as a signed decimal number and displayed in the input field with the algebraic sign. After that, the input editor is started in the HTML page.
NAME="DT205_6_d"	If the input editor is ended with <ENTER> or [SUBMIT], the input field is interpreted as a signed decimal number with 6 positions and saved as DT205 on the PLC.

The setup of the format specification for numbers is comparable to the format (see p. 90) of the input fields. The data type and address part **TTxxxy** can be replaced by the corresponding variable name from the FPWIN Pro project, e.g. **{'VarName'_aa_bb}** or **{'name'_5_i}**. For details, refer to Variable Names (see p. 96).

A little browser window is generated after the input and the transmission of the data to the PLC, either to indicate a possible error message or a successful transmission:



For information on disabling this window, refer to automatic page reload after submitting PLC data (see p. 108).

If an error occurs, the PLC address range may be limited with [Add. Range] (see p. 115).

In general, there are three ways of defining an input field:

A) Send Input with Button:

Several input fields can be summed up in one 'input field' and sent to the PLC with a separately defined button. A confirmation dialog box (OK or ERROR) is generated. In the following HTML code, the current value of DT204 is written into the first input field before and after the input editor is started. The inputs for DT204 and DT205 can be edited and then sent to the PLC by clicking [SET]. The input for DT204 is interpreted as an unsigned decimal number. The input for DT205 is interpreted as a signed decimal number (<ENTER> has no function here).

```
<form ACTION="/plcpost" METHOD="POST" TARGET="SUBWIN" ONSUBMIT="opensubwin(200,100);">
<p>Enter DT204 <input NAME="DT204_5_u" SIZE="6" VALUE="{DT204_5_u}">
     and DT205 <input NAME="DT205_6_d" SIZE="6" VALUE="">
     and       <input TYPE="submit" NAME="Button" VALUE="  set  "></p>
</form>
```

B) Send Input with <ENTER>:

A single input field—it is also possible to use several input fields in one HTML page—does not necessarily need a button of its own; it can be sent to the PLC immediately by pressing <ENTER>. A confirmation dialog box (OK or ERROR) is generated. In the following HTML code, the current value of DT260 is displayed in the input fields initially; after that the input editor is started. The input can be edited and then sent to the PLC by pressing <Enter>. The input is interpreted as a 32-bit floating point number:

```
<form ACTION="/plcpost" METHOD="POST" TARGET="SUBWIN" ONSUBMIT="opensubwin(200,100);">
<p>Enter DT260 <input NAME="DT260_12_f" SIZE="13" VALUE="{DT260_12_+g}"> </p>
</form>
```

C) Send a bit command with Button:

The HTML [SUBMIT] fields can also be used to send bit information via a button. The type "hidden" is used to specify the send command. An "input field" need not be entered. A separately defined button will start sending the bit. A confirmation dialog box (OK or ERROR) is generated. In the following HTML code, the TRUE status is written into the PLC address R1F:

```
<form action="/plcpost" method="post" target="SUBWIN"
onsubmit="opensubwin(200,100);">
<input type="hidden" name="R1E_100_u" value="1">
<input type="submit" name="Send" value="Setzen"></form>
```

Individual HTML commands can be entered (exactly as described above) into the HTML code of the page and then adjusted respectively. Some HTML editors provide additional help and automatic generation for creating submit fields. The commands have the following significance:

ACTION="**/plcpost**"	Enter precisely like this. CGI function of the FP Web-Server.
METHOD="**POST**"	Enter precisely like this. Method of the CGI call.
TARGET="**SUBWIN**"	Enter precisely like this. Display the result in a separate window.
ONSUBMIT="**opensubwin(200,100)**"	Enter precisely like this. Java Script call and window size.
Enter DT204	Variable text will be displayed as seen.
NAME="**DT204_5_u**"	Specification of the memory address in the PLC and

	interpretation of the input format.
SIZE="**6**"	Width of the input window in number of characters.
VALUE="**{DT204_5_u}**"	Initial value of the input field. Pre-allocation of the Edit field.

Only for the definition of buttons in case A):

TYPE="**submit**"	Enter precisely like this. Function of the [SUBMIT] buttons.
NAME="**Button**"	Enter precisely like this. Name of the [SUBMIT] button.
VALUE=" **set** "	Variable labeling of the [SUBMIT] buttons.

Only for the definition of buttons in case C):

TYPE="**hidden**"	Enter precisely like this, if the value to send is hidden.
NAME="**DT204_5_u**"	Specification of the memory address in the PLC. The interpretation of the input format is unused for hidden send values.
NAME="**R1A_100_u**"	Besides 16-bit register addresses, R and Y are also allowed. For BOOL values, the interpretation of the input format must be entered precisely like this example.
VALUE="**1**"	Value to send. Send BOOL commands as the values 0 (FALSE) or 1 (TRUE).

10.1.12.1 Examples on PLC data entries via HTML page

a. Decimal numbers

Entry format	User entry	Data in PLC register
DT201_16_u	12	DT201= 12 (0C hex)
DT201_16_d	-32768	DT201= -32768 (8000hex)
DT202_16_ld	1234567	DDT202=1234567 (12D687hex)
DT202_16_f	123.4	DDT202=123.4 (42F6CCCD hex)
DT202_16_f	1.2e4	DDT202=12000 (463B8000 hex)

b. Strings

Entry format	User entry	Data in PLC register
DT602_16_S	1234	DT602-DT603="1234"
DT602_16_S	123	DT602-DT603="123?" (? is unchanged)
DT600_16_s	1234	DT601=4 DT602-DT603="1234" (DT600 > 3)
DT602_16_c	ABC	DT602="A?" (? is unchanged)

c. Hex entries:

In the latest version also the format type characters 'x' and 'X' are allowed for hexadecimal PLC data entries. Hex data entries are possible for 16-bit (name="DT200_6_X") and 32-bit (name="DT300_16_lx") PLC data registers:

Entry format	User entry	Data in PLC register
DT201_16_X	7b	DT201= 123 (007B hex)
DT201_16_X	8000	DT201= -32768 (8000 hex)
DT202_16_lx	01E240	DDT202= 123456 (0001E240 hex)

Complete example to enter a 16-bit hex value for DT210:

```
<form action="/plcpost" method="POST" target="SUBWIN"
onsubmit="opensubwin(200,100);">
   Enter DT210 <input SIZE="6" name="DT210_6_X"> in hex</form>
```

d. Format specification for integer values

With the latest version the '.precision' (range 1...9) format specification for integer values is also valid for PLC data entry via the HTML submit function. It is now possible to enter a floating-point value with a decimal point, which is stored as a 16-bit or 32-bit integer in the PLC data register. Examples for entering integers with a decimal point:

Entry format	User entry	Data in PLC register
DT201_6_.2d	12.3	DT201= 1230 (04CE hex)
DT201_6_.2i	-1	DT201= -100 (FF9C hex)
DT201_6_.1u	12.345	DT201= 123 (007B hex)
DT201_16_.5li	123.4567	DDT201=12345670 (00BC6146 hex)

Further examples:
More PLC data entry examples can be found in "Example2" and "Example13".

10.1.12.2 Notes on strings

◆NOTE

- **The format definition S is used for ASCII strings without "header", i.e. an ASCII string is generated with the F95 command in the PLC. The length that was determined in the input field definition is the maximum string length that can be transferred to the PLC. It can be shortened even further with the format command** .xS**. In this case x stands for the number of characters of the shortened string length.**

  - NULL-String: If such a string has the length 0 (zero) the data in the PLC is not changed.

- **The format definition** s **is used for ASCII strings with "header", i.e. ASCII strings that have been generated with the string commands of FPWIN Pro (from version 3.0 on) in the PLC. The "header" consists of two 16-bit words before the real ASCII string.**

  - 1st Word: Maximum string length permitted that can be saved here. Zero disables writing.
  - 2nd Word: Current length of the strings.
  - 3rd Word and following: ASCII characters of the string in LO/ HI sequence in the word.
  - Firstly, the entered string will always be shortened to the length that is depicted in the SIZE="**x**" command. Secondly, this string can be shortened even further with the format command **.xs**. Thirdly, the maximum memory permitted (Header 1st Word) has to be taken into account. After the transmission of the string to the PLC, the "header" (2nd Word) with the new length will be updated.

  - Un-initialized String: If a string variable is not initialized by the FPWIN Pro project, the 1st Word (maximum string length) is zero. With this the FP

Web-Server cannot store any character in this string because no memory is reserved for storing!

- **Null-String**: If such a string has the length 0 (zero) the current length of the string (2nd Word) is also set to 0, i.e. the string is deleted.

- **A string (**s **or** S**) of an input field (determined by MEWTOCOL) can only be** 48 characters **long! Compare to display fields for strings that are 52 characters long!**
- **The special characters < and > are transcribed as ¼ and ¾ characters when the strings are displayed. If the special characters ¼ and ¾ are used in input fields, they will be transcribed into the characters < and > before they are transmitted to the PLC.**
- **Only 7-bit ASCII characters (see p. 113) are supported when strings are displayed or entered in HTML.**

10.1.12.3 Comments on defining input fields for PLC data on HTML

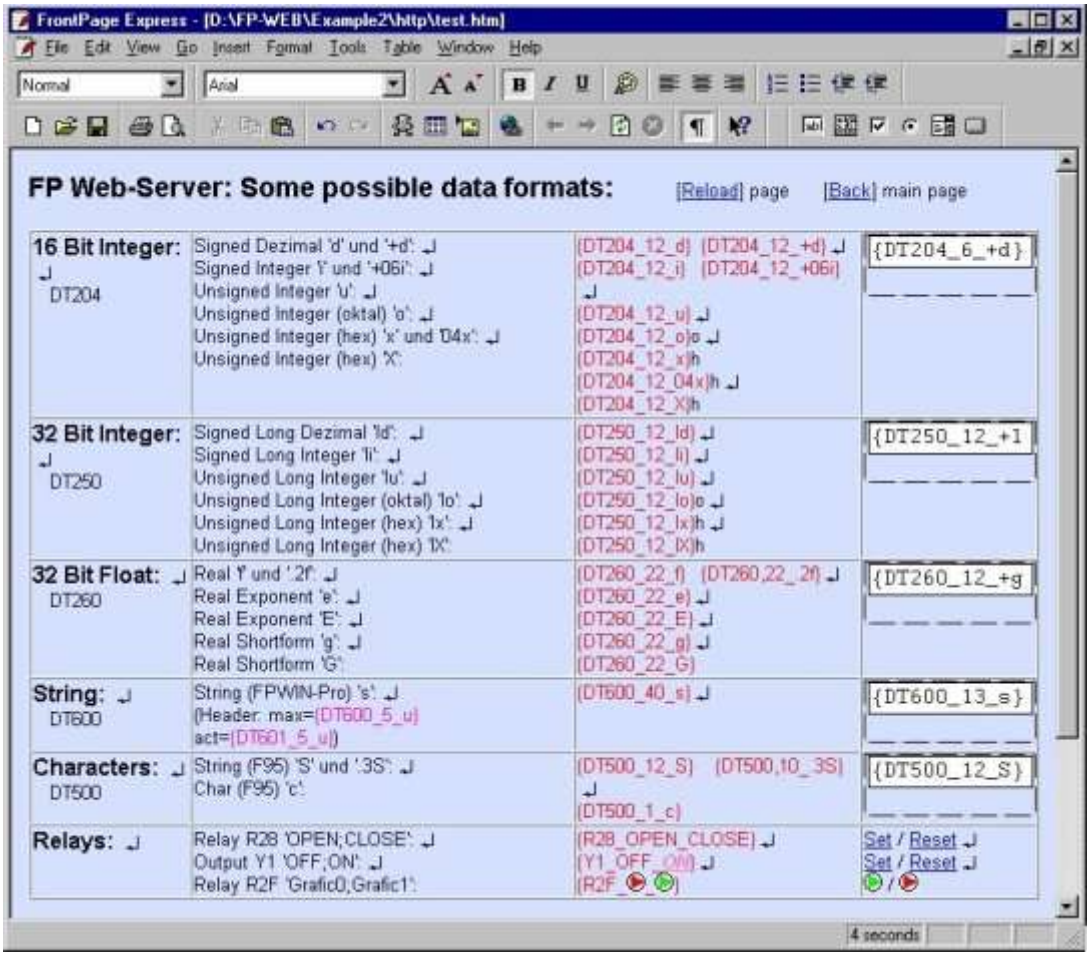
- In the current version, DT, FL, LD values as well as R and Y can be defined in input fields.
- In the definition of the input field **NAME="DT205_6_d"**, only numbers from 0 to 9, letters from A to Z and the underscore are permitted! Do not use special characters like * - < > $ % / ' & and so on!
- To send Boolean values from the type R and Y, use this syntax: **NAME="R123_100_u"**. Only the register address can be defined by the user. The characters _**100_u** are fixed.
- The data type and address part **TTxxxy** can be replaced by the corresponding variable name (see p. 96) from the FPWIN Pro project, e.g. **{'VarName'_aa_bb}** or **{'name'_5_i}**.
- In the current version, octal numbers cannot be entered, i.e. format specifier _o has not been implemented yet!
- The "default" MEWTOCOL address of the PLC cannot be modified by the calling parameter "Address Modifier" **&A=x** for input fields!
- If you send several input fields to a PLC with a button (see "Defining input fields for PLC data on HTML pages" on p. 100), the maximum number of characters is limited to 300 for all NAME="..." and VALUE="..." commands.
- You can limit the PLC write access with the function [Add. Range].

For programming examples in C++ and Java to send PLC data via the http submit function to the PLC, refer to the online help under the keyword "Appendix K) Programming Samples: Access to the FP Web-Server / PLC via TCP".

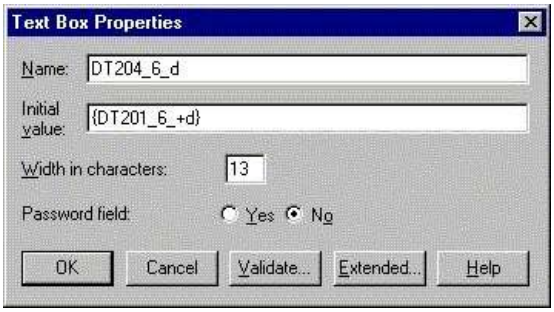
10.1.13 Example on formatting display and input fields

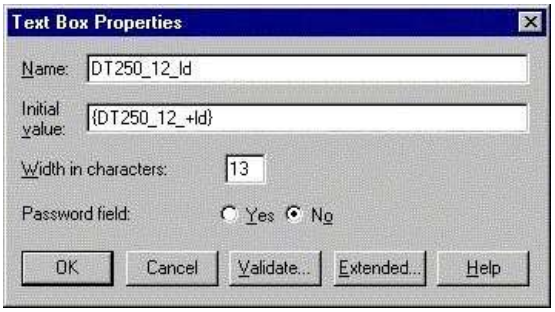
The file TEST.HTM of the "Example2" project shows a multitude of formatting methods:

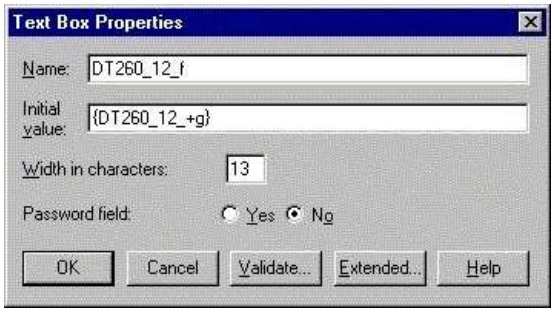
TEST.HTM: In the HTML Editor:

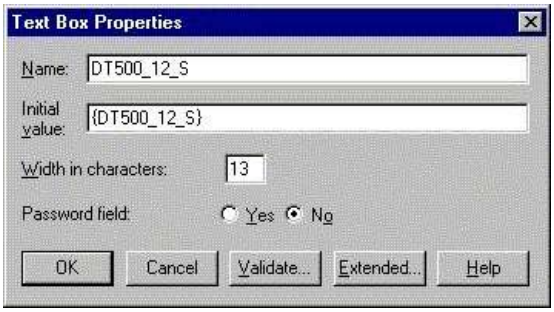


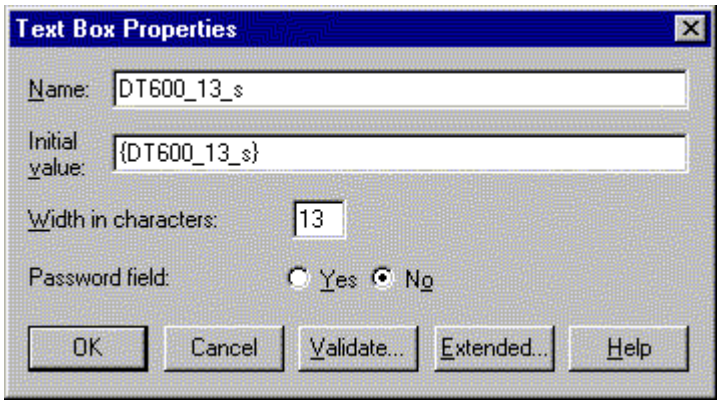
Input Fields in the HTML Editor:



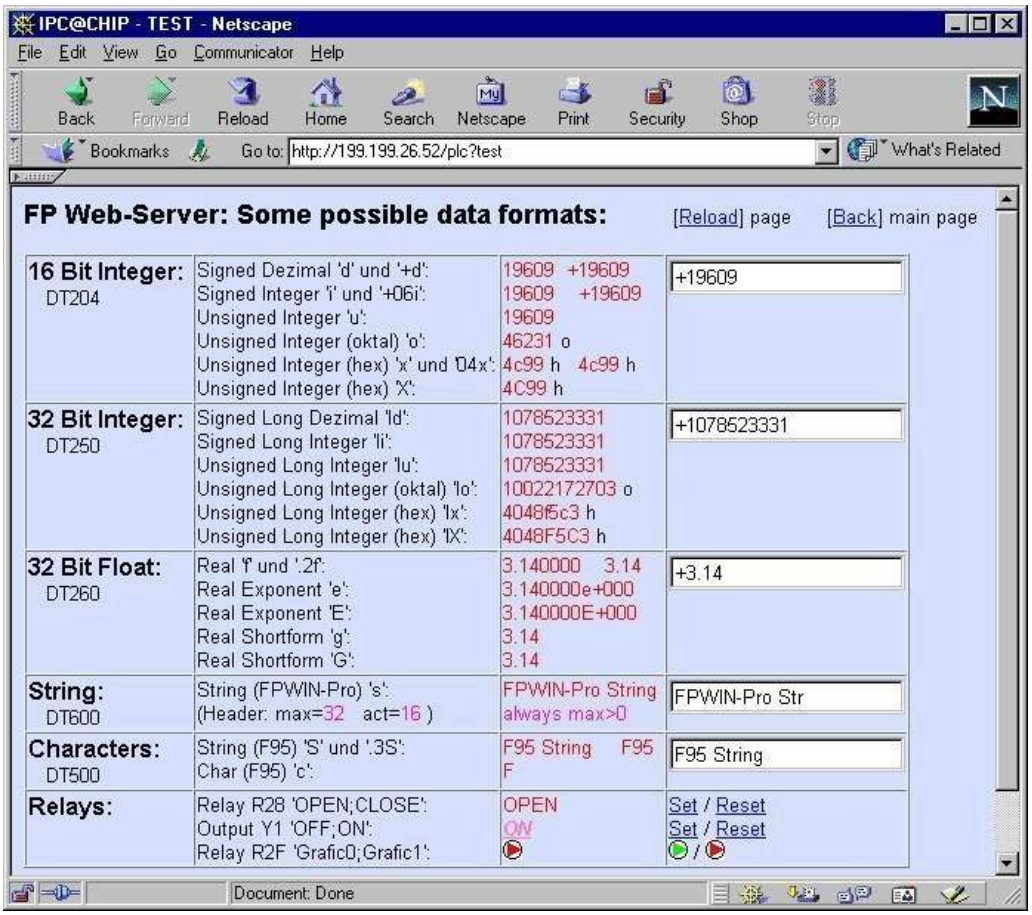



Text Box Properties
Name: DT260_12_f
Initial value: {DT260_12_+g}
Width in characters: 13
Password field: Yes No
OK
Cancel
Validate...
Extended...
Help


Text Box Properties
Name: DT500_12_S
Initial value: {DT500_12_S}
Width in characters: 13
Password field: Yes No
OK
Cancel
Validate...
Extended...
Help


Text Box Properties
Name: DT600_13_s
Initial value: {DT600_13_s}
Width in characters: 13
Password field: Yes No
OK
Cancel
Validate...
Extended...
Help

TEST.HTM: Displayed in the Browser:



Please note that the string at DT600 needs to be initialized by the PLC program before data can be stored there. Also see second note in "Notes on Strings", Defining Input Fields for PLC Data on HTML Pages (see "Defining input fields for PLC data on HTML pages" on p. 100).

10.1.14 Automatic page reload upon submitting PLC data

If the html file "s_m_done.htm" is uploaded to the FP Web-Server **before you start the unit**; the html code of this file will be reloaded to the browser after submitting PLC data. The following default window will be replaced by displaying the file "s_m_done.htm".

Example 1: Automatic refresh of an html page after sending PLC data
Enter the following lines in the file "s_m_done.htm":

```
<html><head><title>DONE</title></head><body>
<script language="JavaScript">
opener.location.reload(true);
window.close();
</script></body></html>
```

Comments:

- This script also automatically closes the default window OK or DONE
- Find a copy of this file in \\Example4\http in your installation directory
- Using this file you can execute Java Script applications after sending PLC data
- The file "s_m_done.htm" may not contain PLC data fields, e.g. `{DT100_6_d}`
- **Restart** the FP Web-Server unit after you have modified the file "s_m_done.htm". (When modifying other htm files the unit does not have to be restarted.)

Example 2: Automatic refresh of an html page after sending PLC data but without closing the OK window automatically
Using this script you have to click [OK] to close the OK window

```
<html><head><title>DONE</title></head><body>
<p align="center"><font face="Arial"><strong><big>FP
Web-Server</big><br>
</strong><small>Data values transfered to PLC.</small></font></p>
<form><div align="center"><center><p>
<input type="button" value="OK" + " onClick="self.close()"></p>
</center></div></form>
<script language="JavaScript">
opener.location.reload(true);
</script></body></html>
```

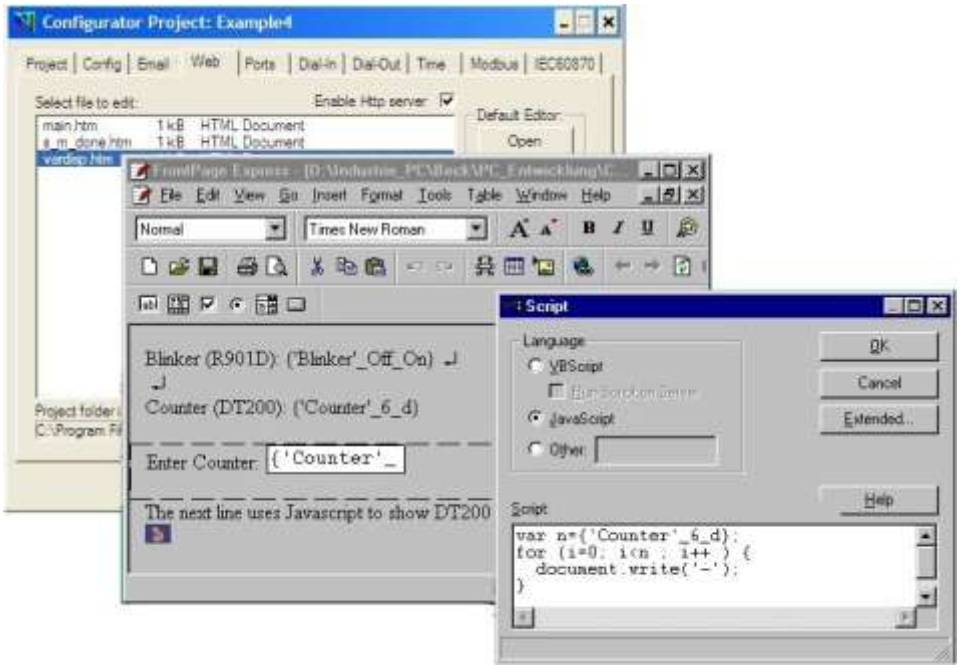
This script cannot be used with all versions of MS Internet Explorer while some windows of html browsers are opened at the same time containing different data.

Comment:
Thus beware when using advanced Java Script because different versions of browsers and/ or manufacturers may be incompatible.

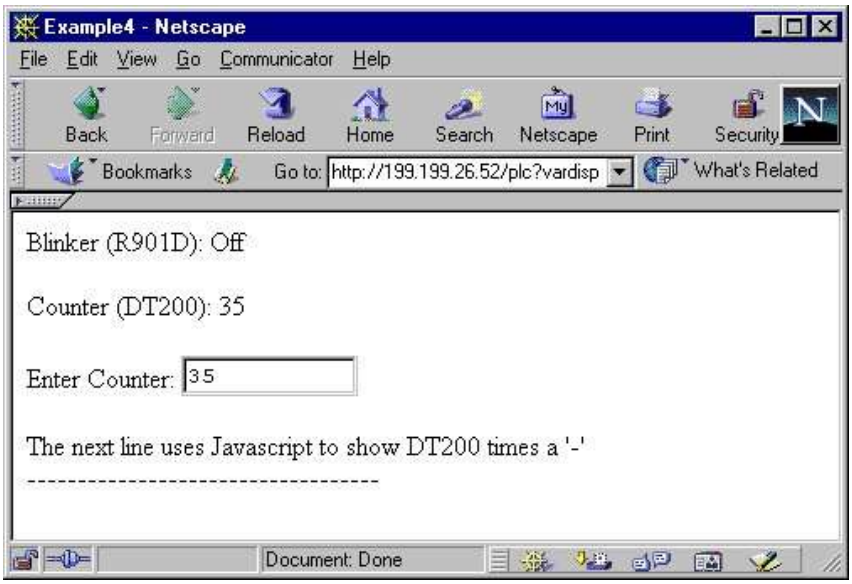
10.1.15 Example on Java Script automations

In the Configurator project "Example4" and "Example5" the usage of Java Script is demonstrated.

In the Configurator project "Example4" Java Script is used to generate a "line" in the HTML output with the number of dashes read from of PLC data DT200. The source in the HTML file looks as follows:



In this example DT200 (variable name "Counter") is read from the PLC and interpreted as number 'n'. In a loop that follows, '**n**' dashes ('-') are output. The resulting HTML page looks as follows:



◆NOTE

The character { in Java Script must be followed by a space character, tab character or a new line. Otherwise it is interpreted as a PLC data field.

Example:

```
for (i=0; i<n ; i++ ) {document.write('-'); }
```

will generate a compiler error. But the following code will work as expected:

```
for (i=0; i<n ; i++ ) {
  document.write('-');
}
```

10.1.16 Notes on HTML frames

In the following file "MAIN.HTM" of "Example8" two frames are used.

```
<html>
<head>
   <title>FP-WebServer Example8 - Frames</title>
</head>
<frameset rows="50%,50%" frameborder="yes" border="1" framespacing="1">
   <frame name="topFrame" src="plc?top&U=1" scrolling="auto">
   <frame name="untenFrame" src="plc?unten" scrolling="auto">
   <noframes>
      <body text="#000000" bgcolor="#FFFFFF">
      </body>
   </noframes>
</frameset>
</html>
```

The content of each frame is stored in a separate HTML file:

TOP.HTM

UNTEN.HTM

Each HTML file can be edited separately. Both HTM files show PLC data but the TOP.htm site is automatically updated every second.

10.1.17 Notes on XML files with PLC data

The FP Web-Server can deliver XML files

The FP Web-Server's http server can also deliver PLC data within XML files. Similar to an HTML file, the XML file can include the special PLC data tag (see "Data fields for displaying PLC data on HTML pages" on p. 90) `{TTxxxy_aa_bb}`. This tag is replaced by the actual PLC data at the time the XML file is requested (see p. 86) from a client in the form "`http://199.199.26.52/plc?filename.xml`"

General XML Info

The XML file format is a sort of ASCII text file designed for data exchange (data import/export, data base interface …). An XML file contains only structured data and not style or format information. An XSL file with style and format information is needed to transform an XML into a different file (display) format. The "transformNode()" function of the Microsoft Internet Explorer is used to take the XML data and an XSL format definition to generate an HTML page.

The XML / XSL conversion is demonstrated in "Example14".

XML file handling is carried out in four steps (based on "Example14"):

1. For example, the user generated XML file (including PLC data tags) "Producn.xml" may look like:

```
<?xml version="1.0" encoding="ISO8859-1"?>
<Production xmlns:xsi="http://www.w3.org/2001/XMLSchema-Instance">
  <Unit>
    <Type>{DT10_10_s}</Type>
    <Produced>{DT18_6_u}</Produced>
    <Rejected>{DT19_6_u}</Rejected>
    <State>{R11_off_on}</State>
  </Unit>
</Production>
```

2. The XML file "Producn.xml" is transferred to the FP Web-Server unit via the FP Web Configurator Tool. In this example we use an FP Web-Server unit with the IP address 199.199.26.52.
3. A TCP client can request the FP Web-Server unit's http server to deliver the XML file "Producn.xml" (including current PLC data), which takes on the form: http://199.199.26.52/plc?Producn.xml

   This file can be read by an Internet browser or a user application program.
4. The client will receive the following resulting XML file, for example:

```
<?xml version="1.0" encoding="ISO8859-1"?>
<Production xmlns:xsi="http://www.w3.org/2001/XMLSchema-Instance">
  <Unit>
    <Type>Standard  </Type>
    <Produced>332   </Produced>
    <Rejected>54    </Rejected>
    <State>off</State>
  </Unit>
</Production>
```

In this example the following PLC data was currently available on the PLC:

String at DT10 = "Standard"
Integer value at DT18 = 332"
Integer value at DT19 = 54"
Internal relay R11 state = false

For programming examples in C++ and Java to read an XML file from the FP Web-Server refer to the online help under the keyword "Appendix K) Programming Samples: Access to the FP Web-Server / PLC via TCP".

10.1.18 ASCII character codes for strings

Only 7 bit ASCII character codes are supported when strings are displayed or entered in HTML.

Dec	Hex	Char
32	20	sp
33	21	!
34	22	"
35	23	#
36	24	$
37	25	%
38	26	&
39	27	'
40	28	(
41	29	)
42	2A	*
43	2B	+
44	2C	,
45	2D	-
46	2E	.
47	2F	/
48	30	0
49	31	1
50	32	2
51	33	3
52	34	4
53	35	5
54	36	6
55	37	7
56	38	8
57	39	9
58	3A	:
59	3B	;
60	3C	<
61	3D	=
62	3E	>
63	3F	?

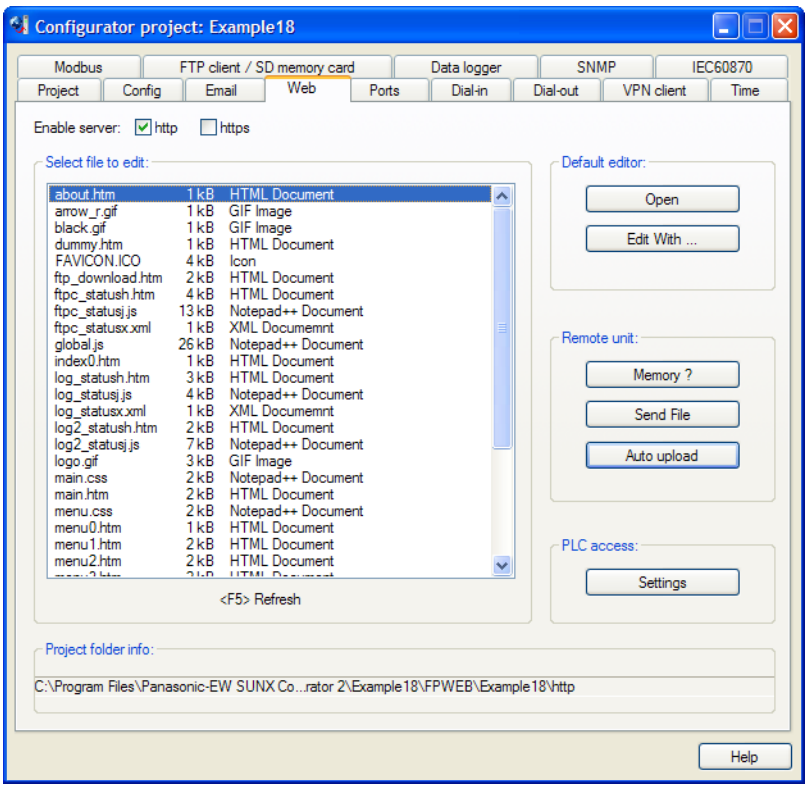
Dec	Hex	Char
64	40	@
65	41	A
66	42	B
67	43	C
68	44	D
69	45	E
70	46	F
71	47	G
72	48	H
73	49	I
74	4A	J
75	4B	K
76	4C	L
77	4D	M
78	4E	N
79	4F	O
80	50	P
81	51	Q
82	52	R
83	53	S
84	54	T
85	55	U
86	56	V
87	57	W
88	58	X
89	59	Y
90	5A	Z
91	5B	[
92	5C	\
93	5D	]
94	5E	^
95	5F	_

Dec	Hex	Char
96	60	`
97	61	a
98	62	b
99	63	c
100	64	d
101	65	e
102	66	f
103	67	g
104	68	h
105	69	i
106	6A	j
107	6B	k
108	6C	l
109	6D	m
110	6E	n
111	6F	o
112	70	p
113	71	q
114	72	r
115	73	s
116	74	t
117	75	u
118	76	v
119	77	w
120	78	x
121	79	y
122	7A	z
123	7B	{
124	7C	|
125	7D	}
126	7E	~
127	7F	

10.2 Configurator HTTP administration and functions

The FP Web-Server unit's http and https server can be enabled or disabled. If enabled, you can handle Web files with this dialog.

All Web pages for the FP Web-Server are created and/or edited on the computer. To do this, it is best to select the respective file of the project in the Configurator's "Web" screen and start the preinstalled editor of the operating system by double-clicking (or choosing <Enter> or [Open]).



After double-clicking, the file name extension (type) is analyzed and the computer tries to find an installed program in the registry that can open and edit that type of file. If no such program is installed on the computer, you will receive an error message:

Alternatively you can select an installed editor by pressing [Edit With]. The editor can be an HTML editor or a standard ASCII text editor.

We recommend installing the following programs and defining them as "default" for this type of file:

.HTM	e.g. KompoZer, NotePad, ...
.GIF .JPG	PhotoEdit (can be installed with MS Office)

To test which editor is installed, click (while in Windows Explorer) on an .HTM file and use the right mouse button to call up a list of available editors.

◆NOTE

- **If spaces or Japanese characters are used, an error message pops up before transmission to the FP Web-Server.**
- **All file names have to correspond to the DOS 8.3 format, i.e. the name may only have up to 8 characters and the extension (type) only up to 3 characters after the period. (For FP-WEB2, (see p. 21) you can use long file names without special characters.)**
- **Recommended are actual browsers like e.g. MS Internet Explorer, Mozilla Firefox, Apple Safari or Google Chrome.**
- **The file size displayed shows not the exactly value because it is rounded to whole KB.**
- **System, hidden and scc files are ignored by the Web file functions and not displayed in the list.**
- **Press <F5> to reload and refresh the file list display.**

◆REFERENCE

For more detailed information, please refer to the online help under the following keywords: "Open file with default editor", "edit with an alternate editor", "available memory", "uploading the selected file to the remote unit", or "PLC access rights".

10.2.1 MEWTOCOL communication via HTTP server

Optionally MEWTOCOL communication with the PLC can be carried out via port 80 and the HTTP server. This is especially useful for Internet systems and PLC access via proxy gateways. Also enhanced Web pages (Java applet, Ajax scripting) can directly communicate with the PLC.

For example, to read register DT200 via HTTP-'Get' the MEWTOCOL command should look like this: "http://199.199.26.52/plc?%01_RDD0020000200**".

Please note that the '#' sign is replaced by a '_' character. The HTTP response holds the raw MEWTOCOL data such as "%01$RD375D63". In case of access limitations or other problems, the error code "%01!94**" is returned. To avoid security problems, PLC access can be completely disabled or reduced to read-only access. For more security, use the HTTPS Web Server (see p. 116) of the FP-WEB2 unit.

10.3 Https server

Under the tab 'Web', an HTTPS server can be switched on. This is possible in addition or alternatively to the standard HTTP server. MEWTOCOL communication (see p. 115) is also possible via the HTTPS server.

The HTTPS server uses TCP port number 443. A warning is displayed if one of the TCP port servers is configured to listen on port number 443. The secure HTTPS communication is based on X.509 certificates. The default HTTPS certificates are copied into the configuration project folder. These certificates can be replaced by customer-specific certificate files.

The HTTPS Web server supports SSL 3.0 and TLS 1.0 protocol versions.

REFERENCE

For more information, e.g. on how to get individual certificates and prevent the Web browser warning message popup upon connecting the first time to the HTTPS site, see "Https_FPWEB2.pdf" on the user CD.

Chapter 11

Ethernet and serial (RS232C, RS485, USB) ports

11.1 General information on the Ethernet and serial ports

The FP Web-Server can work as an Ethernet-to-serial interface converter. Thereby all data the FP Web-Server receives via an Ethernet port, e.g. from a computer, is routed to its respective port (RS232C, RS485 or USB) and vice versa, i.e. all data received at the serial interface is sent back to the computer via Ethernet. In this configuration the FP Web-Server is the server and the computer is the client.

To set up an FP Web-Server port as a client, refer to the online help under enable transparent TCP/IP client port. With two FP Web-Server units set up as a pair (transparent port server and client), two FP-Sigmas can communicate with each other via the PLC link function (PC link protocol). (Take into account the timeout set in the PLC.)

For a detailed description refer to the online help under the keyword "Configurator parameters to the MEWTOCOL port server" or "configurator parameters for the transparent port".

11.1.1 Server

For this kind of data exchange, the FP Web-Server provides two special Ethernet (i.e. TCP/ IP) server ports that wait for an incoming connection from a client, e.g. a computer or an FP Web-Server configured as a port client:

a) MEWTOCOL communication with the PLC

- Depending on the PLC interface setting, communication with the PLC is carried out via the 3-pin RS232C of the FP-WEB2 or the 3-pin RS485 port of the FP Web expansion unit
- Preset TCP/IP port number 9094 (server)
- Up to 10 client connections are possible (TCP/IP)
- MEWTOCOL protocol for data and program exchange

Comments:

The Modbus-TCP client for PLC, the MEWTOCOL client for PLC and the IEC60870 function use the full 3-pin RS232C bandwidth. Other functions are delayed. Enter high timeout values whenever these functions are used. Alternatives for these functions (except IEC60870) are: Modbus-TCP client gateway for any Modbus RTU master or MEWTOCOL client via 9-pin RS232C.

b) Transparent Communication

- 9-pin RS232C connection is connected with any unit (also PLC, GT panel...)
- Preset TCP/IP port number 9095 (server or client)
- Only one client possible (TCP/IP or UDP/IP)
- Arbitrary protocols (also MEWTOCOL) possible

c) MEWTOCOL/GT communication (USB host) with the FP Web expansion unit

- Depending on the PLC interface setting, communication with the PLC is carried out via the USB port of the FP Web expansion unit
- If the PLC interface is set to RS232C or RS485, the MEWTOCOL/GT (USB host) port can be used additionally for communication with a PLC or GT panel connected via the

USB host port ot the FP Web expansion unit

- Up to 10 clients possible (TCP/IP)
- MEWTOCOL/GT protocol for data and program exchange
- Preset TCP/IP port number 9096 (server)

Comments:

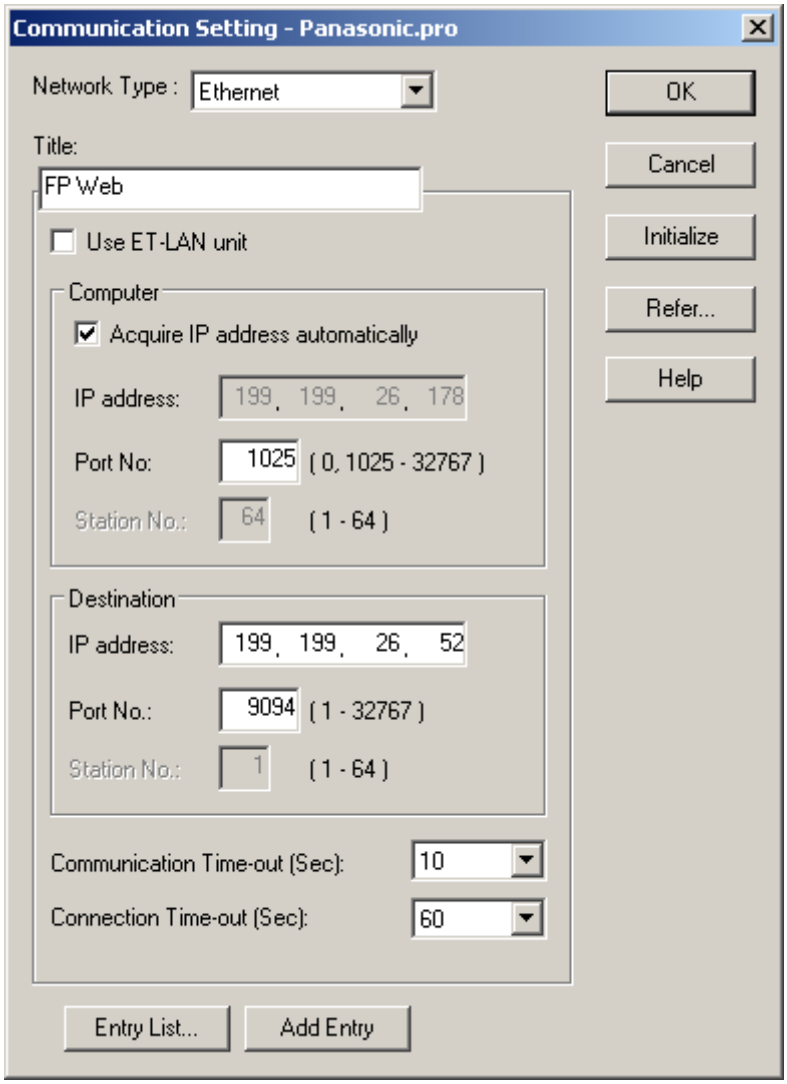
- If the PPP server or Internet email of the FP Web-Server is active and a modem is connected to the 9-pin RS232C, transparent communication is not possible because the 9-pin RS232C connector is busy.
- The current FP Web-Server firmware implementation supports up to ten clients for FP-WEB2, i.e. up to ten computers can communicate with a PLC! However, be aware that only one client is allowed to use the MEWTOCOL monitor command! Standard MEWTOCOL commands and MEWTOCOL program download commands can be used by all ten clients at the same time.
  This means that only one client is allowed to use FPWIN or PCWAY for data monitoring, but up to ten GT panels can access the FP Web-Server at the same time because the GT panels do not use MEWTOCOL monitor commands.
- To eliminate the problem of only one client being allowed to use FPWIN Pro or FPWIN GR for data monitoring, permit only one client. See the parameter MEWTOCOL number of clients.
- MEWTOCOL communication between a PLC and FPWIN Pro (or an FP Web-Server port client or GT panel) can involve a very high data load, i.e. with a single FPWIN Pro client, communication can be hindered so gravely that http pages and email communication are slowed down significantly.
- While MEWTOCOL multi-frame communication (program download) is being executed, MEWTOCOL communication for the other clients (including email and http functions) is temporarily stopped! For more information regarding the multi-frame communication timeout setting, please refer to the PLC's timeout settings.
- Both the MEWTOCOL server port and transparent server port can define an idle timeout. Normally this timeout is not necessary because the client controls the disconnect. If the client crashes, the server connection remains open and cannot be used for new connections. Therefore it is always recommended to set a high idle timeout value for the server.

11.1.2 Client

On the client side (computer, GT panel or an FP Web port client) there are several possibilities and/or software packages to communicate with the FP Web-Server's MEWTOCOL server port (to exchange data with the PLC):

a. With FPWIN Pro, GTWIN or PCWAY, it is possible to communicate directly with the FP Web-Server, i.e. the PLC/GT panel via the Ethernet.

The following settings are required:



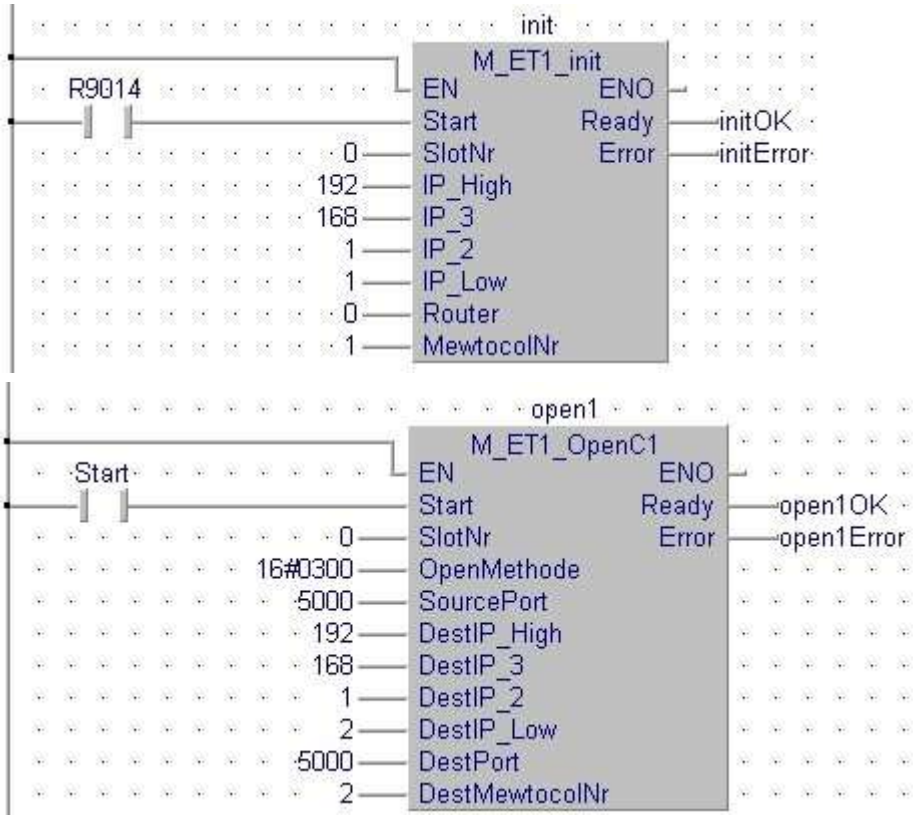
Do not activate the check box "Use ET-LAN unit"!

b. Using a second FP Web-Server setup as transparent port client, RS232 communication via Ethernet can be established. Such a port client can be used for:

Programs (DOS programs) with no Ethernet support that use the RS232 port only

To upgrade any RS232 device with Ethernet connectivity, set up the transparent port as follows:

c. Also the FP2 ET-LAN unit can communicate with the FP Web-Server ports. Using the ET1 library for FPWIN Pro makes PLC programming easy:



d. Program your own MEWTOCOL client application:

For more information refer to the C++ and Java programming example in the online help under the keyword "A.) Client Programming Example to Access PLC Data (Via MEWTOCOL Server Port 9094)".

e. PC COM Port Redirection for FP Web-Server Ports

11.1.3 FP Web-Server and PLC timeouts

Usually the PLC is directly connected to the 3-pin RS232C of the FP Web-Server unit (or RS485/USB port of the FP Web Expansion unit) so the timeout values for communication between the FP Web-Server and PLC not need be changed.

However, in certain applications or workarounds, you may have to adapt the timeout values, e.g. for very slow, fluctuating or instable network connections (e.g. GPRS) between client and FP Web-Server or between FP Web-Server and PLC.

The parameter PLC_TMO=AAA in the CHIP.INI file (see appropriate FP Web Configurator project folder) controls the communication timeout between FP Web-Server and PLC. PLC_TMO=AAA is in the section [MEW] of the CHIP.INI file.

◆**NOTE**

Use a text editor such as Notepad to change the CHIP.INI file. Otherwise FP Web Configurator may not be able to read the file.

The PLC_TMO parameter default value AAA is set to 3. The value AAA is the basis of two different timeout values:

Timeout value	Description
PLC response timeout	After the FP Web-Server has sent out a MEWTOCOL request to the PLC, the PLC must respond within AAA seconds. Otherwise an error is returned to the originator of the MEWTOCOL request. The originator can be any of the FP Web-Server functions that need to get/set PLC data: Http server (Web page data); email client (R20 polling); MEWTOCOL server (FPWIN-Pro, Java applets …); Modbus-TCP functions; IEC60870 interface, etc. **Note**: The default 3s need only be changed if a very slow communication system is used between FP Web-Server and PLC.
Multiframe originator timeout	In case of a running MEWTOCOL multiframe communication (PLC program download), the FP Web-Server waits up to BBB seconds between the multiframe data packets. If a multiframe data packet does not follow within BBB seconds, the multiframe communication is aborted, i.e. the FP Web-Server assumes that the originator (FPWIN Pro) died and will send no additional multiframe packets. Calculation of BBB: FP Web Configurator < V2.16: BBB = AAA x 2 seconds (default BBB=6s) FP Web Configurator ³ V2.16: BBB = AAA x 3 seconds (default BBB=9s) **Note** • The multiframe timeout needs to be changed only if multiframe data packets are delayed, e.g. if a GPRS/UMTS communication system is used for PLC program download and the receiver gets a weak signal. • If the FP Web-Server multiframe timeout needs to be increased, the following timeouts must also be adapted: - PLC multiframe timeout system register no. 31 - Response timeout of the originator (FPWIN Pro communication timeout)

◆REFERENCE

For further information, refer to the online help under the keywords:

- Configurator parameters to the MEWTOCOL port server
- Configurator parameters for the transparent port
- Configurator parameters for the MEWTOCOL/GT USB host port server

Chapter 12

Dial-in setup for PPP server

12.1 Dial-in networking setup for computer/FP Web-Server

The FP Web-Server can administer a modem that permits logging onto a PPP client and establishing a TCP/IP connection to the FP Web-Server via modem.

When the connection has been established, the functions are the same as the ones described above for Ethernet communication.

Functions possible:

- Http/Https server for Web pages
- RS232C/RS485/USB<->Ethernet ports
- Modbus communication
- Remote configuration

In addition, the FP Web-Server provides a "Gateway" function that allows other FP Web-Servers (that are connected to the "Gateway" FP Web-Server via the Ethernet) to be accessed via a long-distance modem connection. A description of the gateway setup can be found under PPP gateway functions (see p. 135).

In this section, the installation of a Windows computer and modem is described. Using its standard Windows dial-up networking (PPP client) functions you can call up an FP Web-Server.

For a detailed description of the parameters for the PPP server in the FP Web-Server, refer to PPP server configurator inputs and parameters (see p. 145).

◆NOTE

- **In a LAN, only one PPP server gateway is allowed.**
- **The default LAN gateway address is replaced by the PPP gateway address during a modem connection.**
- **Set up the PPP client to accept the remote IP address from the PPP server.**
- **Problems may occur if the server is connected to a client via modem and via LAN at the same time.**

12.1.1 TCP/IP network installation of a Windows client

To make it possible for a computer (FPWIN Pro, GTWIN, COM2WINSOCK, COMIP, etc.) to communicate with the FP Web-Server via the network, the TCP/IP network protocol has to be installed. These settings are independent of the decision whether the communication is carried out via the Ethernet or via the dial-up networking modem. For details on TCP/IP installation on a Windows computer, please refer to the online help under TCP/IP setup for configurator/browser operations via LAN.

Comment:

The following screenshots were taken from a Windows XP operating system. The layout of other Windows operating systems may differ slightly.

12.1.2 Modem and dial-up networking installation of a Windows client

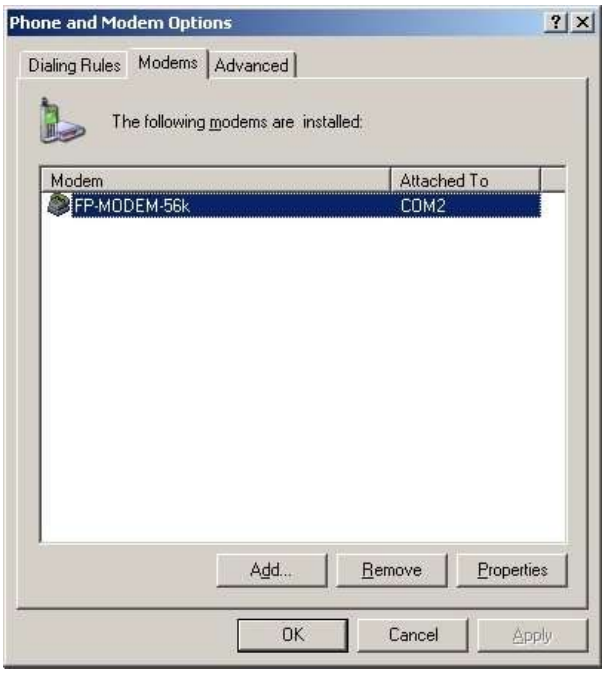
Configure and test the respective modem under "system settings", "modems". (For example, a "standard 28800 BPS modem" to COM 2 was used.) Do not forget to set the optional parameters correctly before closing "modem", "system settings".

Comments:

- We recommend the Panasonic FP Modem-56k for our customers in Europe.
- The driver "PAN_FP56.inf" for the FP Modem-56k can be found on the Configurator setup CD in the folder: "Other-Tools/PPP_Cable"
- For a null modem cable connection please find the necessary driver "mdmcisc2.inf" on the configurator setup CD in the folder: "Other-Tools/PPP_Cable"

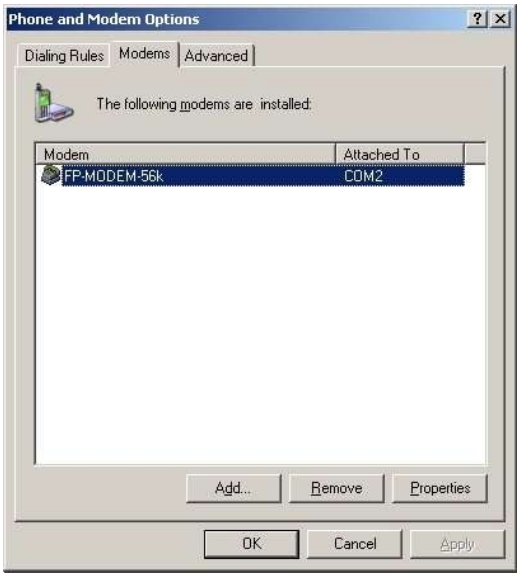
PROCEDURE

1. Open the dialog "Phone and Modem Options"

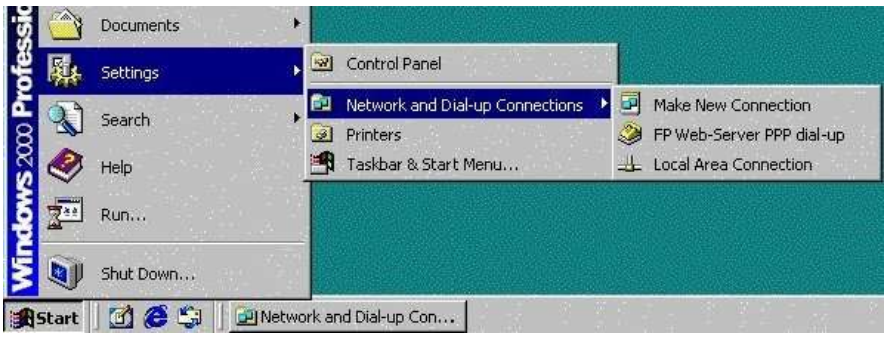


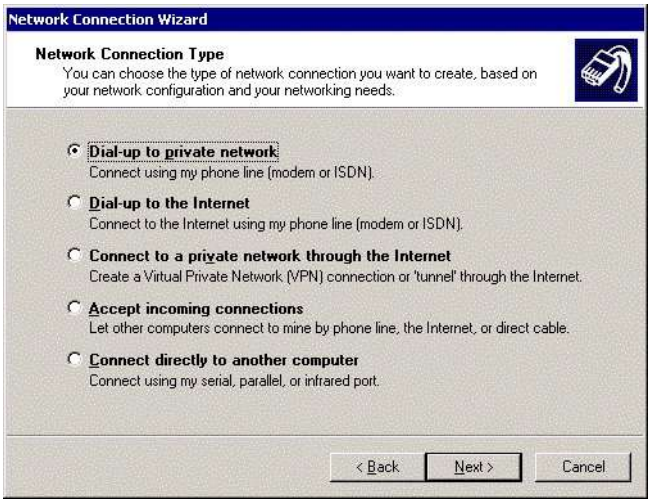
2. Press [ADD] to add a new modem

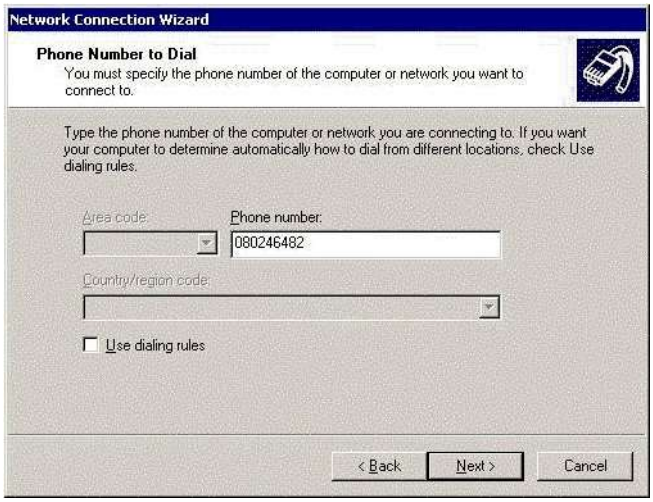
The modem used must support RTS/CTS flow control. Use command AT%K0&K3 to enable this for the FP Modem-56k.

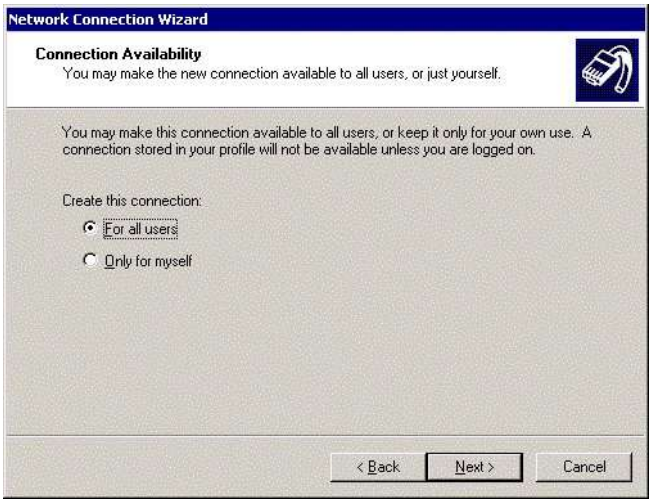


3. Double-click "Create New Connection" in the folder "Dial-up Networking" and create a new entry by entering the respective data



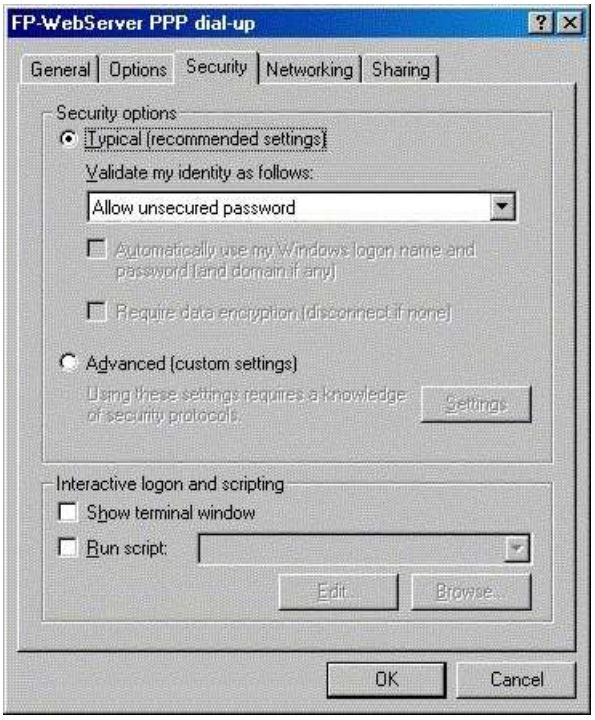


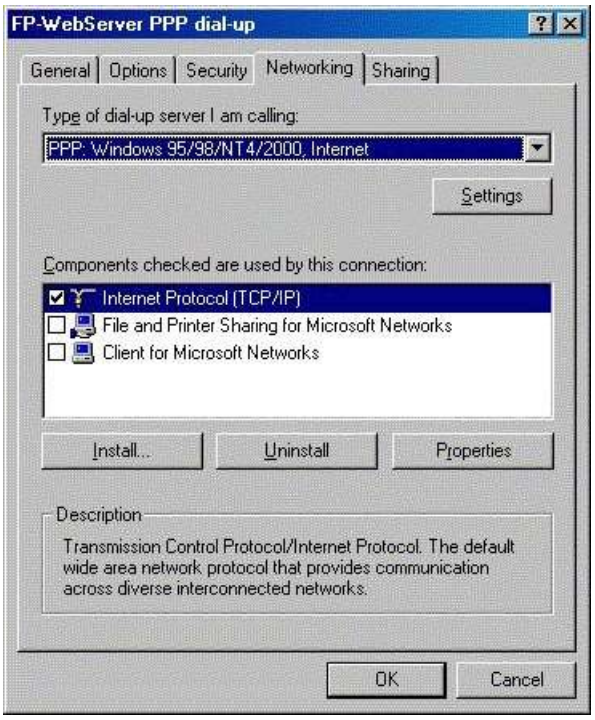


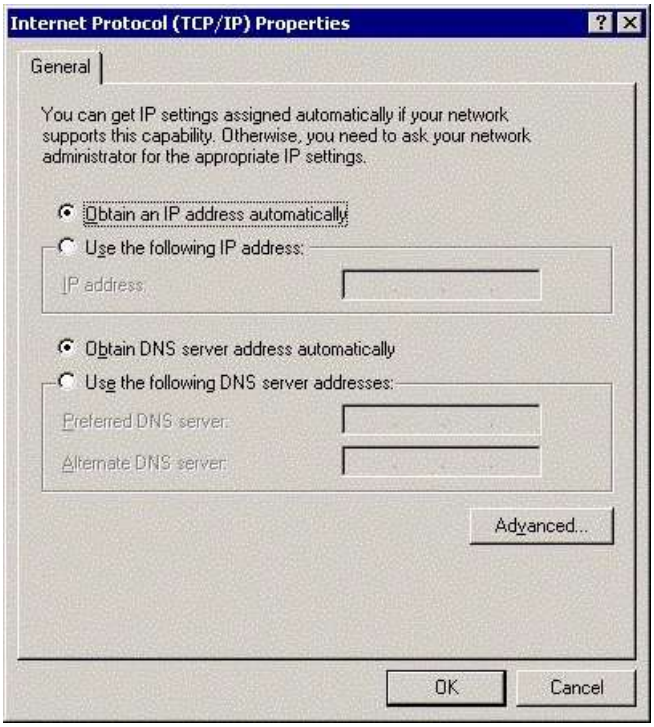

Network Connection Wizard
Connection Availability
You may make the new connection available to all users, or just yourself.
You may make this connection available to all users, or keep it only for your own use. A connection stored in your profile will not be available unless you are logged on.
Create this connection:
For all users
Only for myself
< Back
Next >
Cancel


Network Connection Wizard
Completing the Network Connection Wizard
Type the name you want to use for this connection:
FP Web-Server PPP dial-up
To create this connection and save it in the Network and Dial-up Connections folder, click Finish.
To edit this connection in the Network and Dial-up Connections folder, select it, click File, and then click Properties.
Add a shortcut to my desktop
< Back
Finish
Cancel

4. After having completed the "New Entry", double-check the "Properties"


FP-WebServer PPP dial-up
General
Options
Security
Networking
Sharing
Security options
Typical (recommended settings)
Validate my identity as follows:
Allow unsecured password
Automatically use my Windows logon name and password (and domain if any)
Require data encryption (disconnect if none)
Advanced (custom settings)
Using these settings requires a knowledge of security protocols.
Settings
Interactive logon and scripting
Show terminal window
Run script:
Edit...
Browse...
OK
Cancel


FP-WebServer PPP dial-up
General
Options
Security
Networking
Sharing
Type of dial-up server I am calling:
PPP: Windows 95/98/NT4/2000, Internet
Settings
Components checked are used by this connection:
Internet Protocol (TCP/IP)
File and Printer Sharing for Microsoft Networks
Client for Microsoft Networks
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK
Cancel



5. Enter the password that was defined in the Configurator project before **in lower case only**

   For further information on passwords, please refer to Base Configuration/ User Name and Password and preinstalled passwords and safety instructions (see p. 195).

   Example:

   Even if the password was "Abc1", it has to be entered as "abc1" for dial-up networking.

The Windows computer and the FP Web-Server should NOT be connected additionally via Ethernet.

6. As soon as the connection is established, the application that accesses the FP Web-Server (via TCP/ IP protocol) can be started

   The browser, Configurator, FPWIN Pro, etc. can be used in the same way as with an Ethernet connection.

◆NOTE

If a Windows computer is set up to call up an Internet provider and to log on to the Internet via modem (as with private Internet access), you simply have to replace the telephone number of the Internet provider with that of the FP Web-Server (i.e. the modem connected to it).

12.1.3 Setup of the modem connected to the FP Web-Server for PPP-communication

The modem has to be connected to the 9-pin RS232C port of the FP Web-Server.

The modem must be set up to support RTS/CTS flow control.

Using the FP Modem-56k for PPP communication is recommended. Its factory default setup can be used and it only needs to be connected via a 1:1 cable to the FP Web-Server.

RTS/CTS flow control needs to be enabled with AT&K3. To connect the modem to the FP Web-Server, refer to PPP server with modem (see p. 185).

Standard modem:
Standard computer modems should be reset to the factory default state with the command AT&F&W. If there are connection problems, disabling the autoanswer mode with ATS0=0 or the Keybreak function with AT%K1 helps with some modems.

GSM modem:

- Be careful with the GSM antenna! Maintain distance to the other units (PLC, modem, FP Web-Server...), as it may cause interference by high level radio waves.
- Please reboot (power up) the FP Web-Server after changing cables and connectors. Especially after connecting a modem / GSM module to the FP Web-Server, it is necessary to restart the unit for modem initialization and recognition.

Further information:
ISDN Adapter (see p. 154)

12.1.4 FP Web-Server PPP gateway functions

The PPP server can be called up via modem by a PPP client, e.g. laptop with dial-up networking functions (see "Modem and dial-up networking installation of a Windows client" on p. 127). As soon as the connection is established, you cannot only access the PLC and the FP Web-Server functions of the PPP server with this distant PPP client, but also contact all the other FP Web-Servers in the network via Ethernet!

The Ethernet (LAN) network and the dial-up networking connection have to be regarded as two separate networks, each with its own network address! For notes on IP addressing and distinguishing the network's and the unit's address, refer to IP and TCP/IP (see p. 190).

Within the LAN there is only one PPP server gateway allowed, i.e. if several FP Web-Servers are connected in a network via the Ethernet, only one of the FP Web-Servers in this network can assume the function of a PPP server.

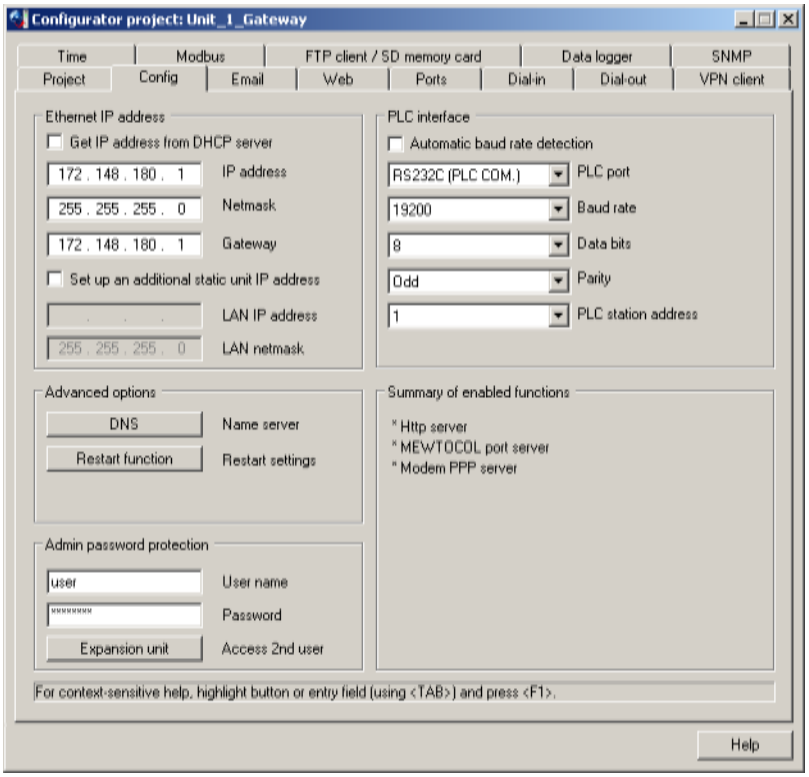
When the IP configuration of the FP Web-Server is carried out, you can specify a default LAN gateway. As soon as a modem connection with the PPP server is established, this gateway address is replaced by the PPP configuration.

◆ **EXAMPLE**

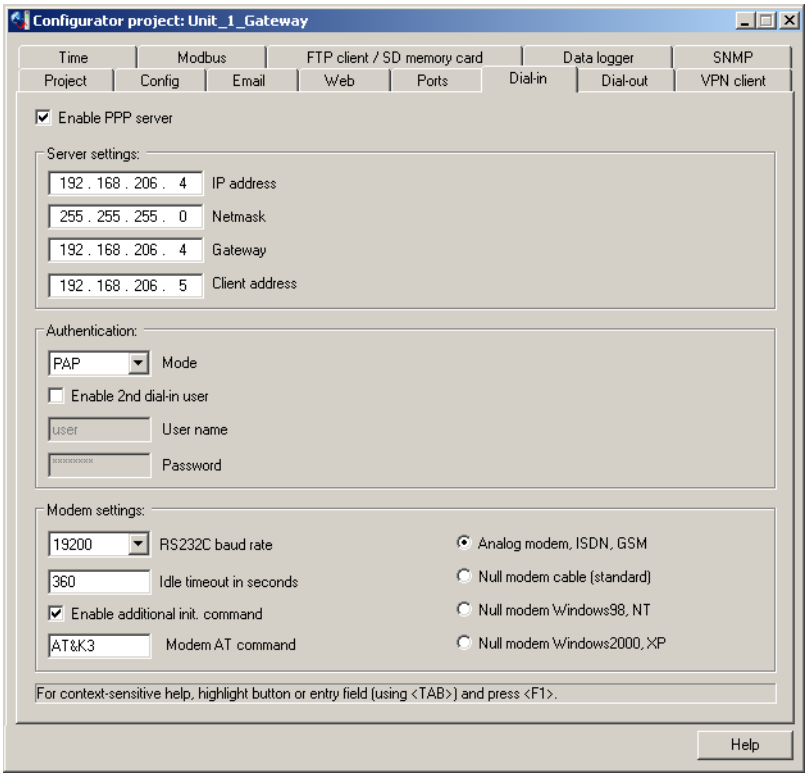
Configuration for an Initial Test:

All FP Web-Servers in the Ethernet network need to have entered the gateway address of that FP Web-Server that implemented the PPP server access.

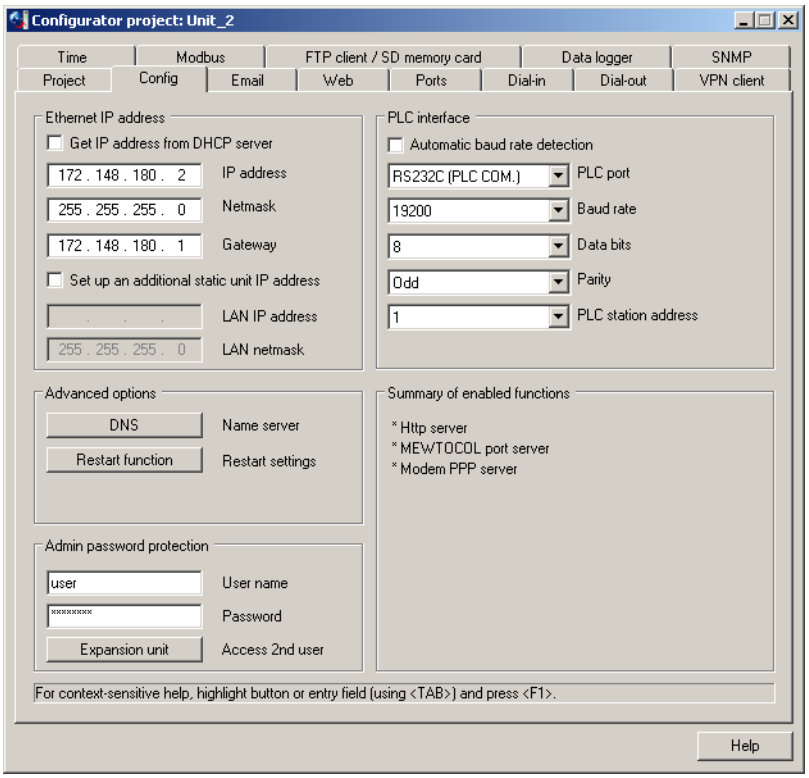
Configuration example for the FP Web-Server that implemented the PPP server access:



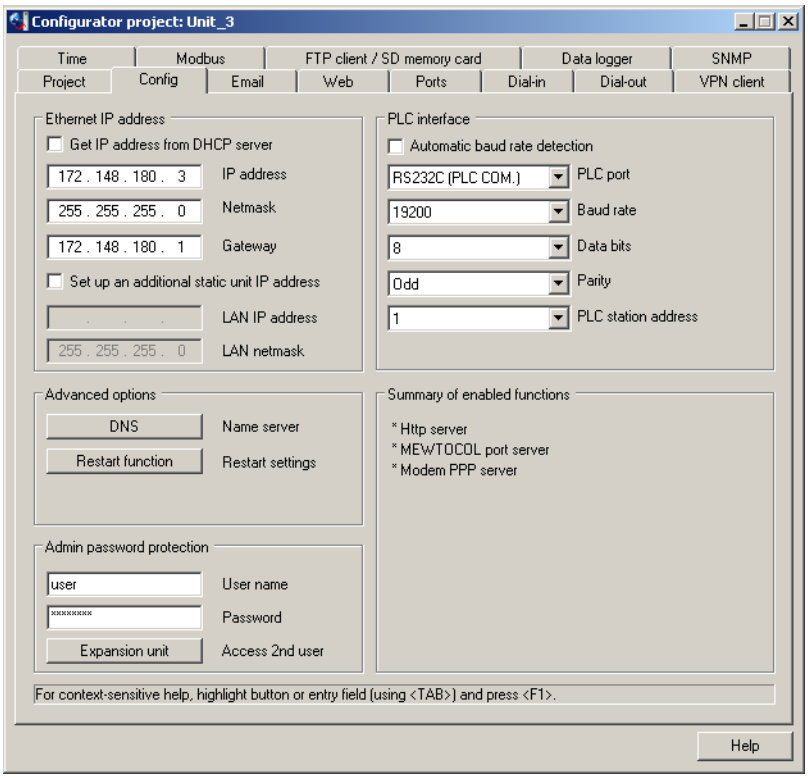
The following parameters need not to be changed and can also be used for your PPP gateway setup.



Configuration example of a second FP Web-Server in the LAN:



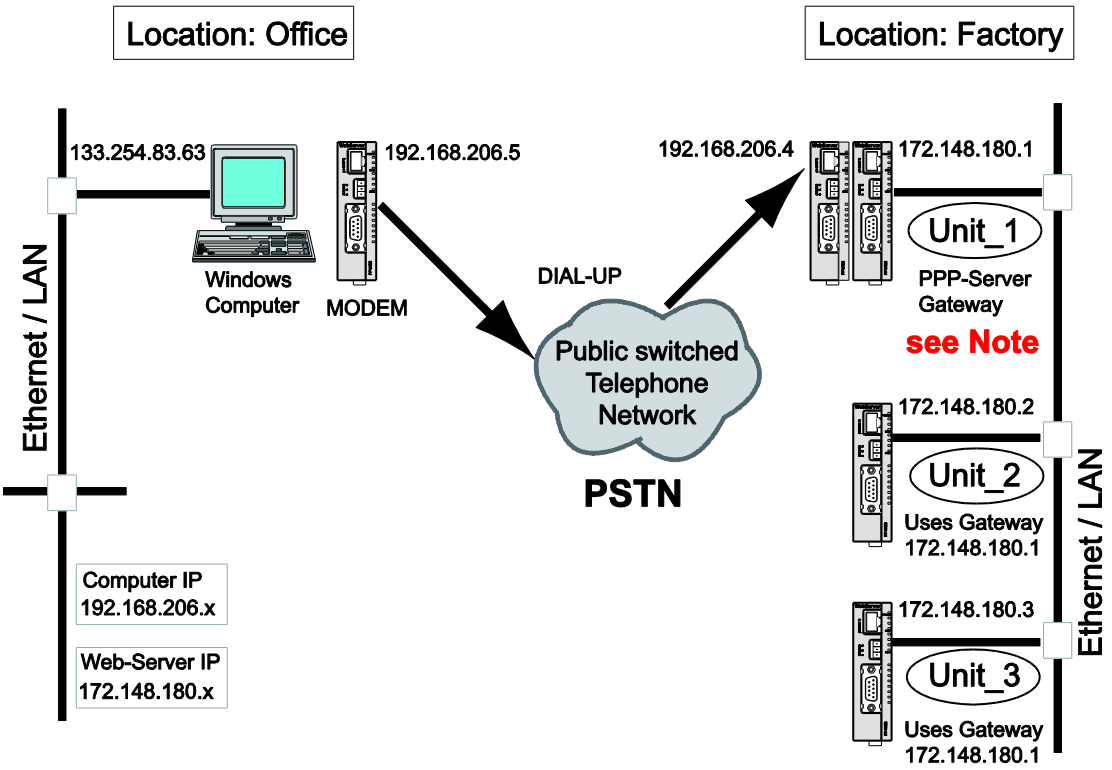
Configuration example of a third FP Web-Server in the LAN:



With this configuration example, it was possible to test the IP_forwarding successfully, i.e. a Windows computer that dialed up the FP Web-Server gateway was able to communicate with the other FP Web-Servers in the Ethernet LAN (were the Gateway-FP Web-Server is in). However, the [Find] command of the Configurator (located on the remote Windows computer) could not find these FP Web-Servers because the IP broadcasts (using the [Find] command of the Configurator) may not be forwarded via a gateway. See the description of [Find] and details at enter IP address manually how to configure these FP Web-Server via TCP communication.

12.1.5 FPWIN Pro setup to use the remote dialup network

The standard function 'Remote Dialup Networking' of Windows is used for FPWIN Pro to communicate with an FP Web-Server via modem dialup. You can see how to set up Windows, FPWIN Pro and the FP Web-Servers in the following diagram:



◆NOTE

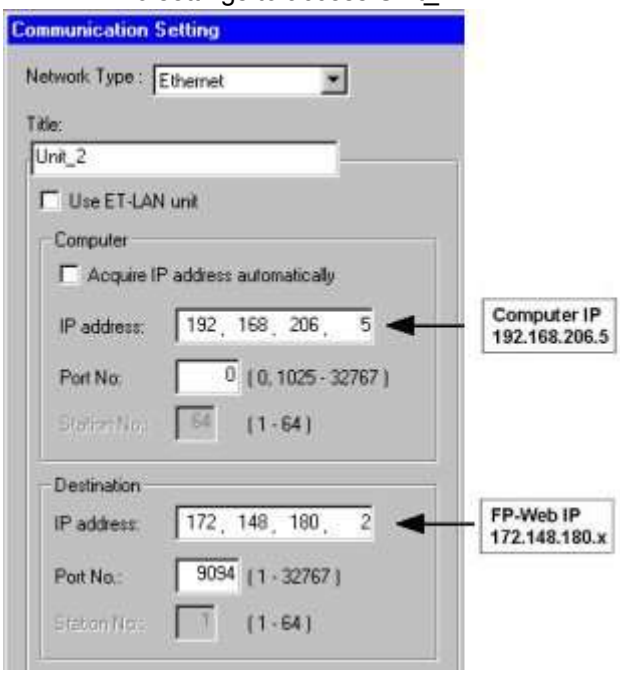
See example setup in "Configuration for an Initial Test" of FP Web-Server PPP Gateway Functions (see p. 135). The PPP server gateway Unit_1 can also be set up to dial up the Internet to send an email.

Comment:

The Windows computer is set up as follows:

- with "Remote Dialup" to Unit_1 (gets the PPP-IP from FP Web-Server)
- LAN (Ethernet) IP can be anything except for 192.168.206.xxx

- FPWIN Pro settings to access Unit_2:



There are 3 IP sub-networks involved in this setup:

- 133.254.83.x: Computer Ethernet (any IP except 192.168.206.x or 172.148.180.x)
- 192.168.206.x: Computer + FP Web Modem (always use 192.168.206.x)
- 172.148.180.x: FP Web Ethernet (any IP except 192.168.206.x or 133.254.83.x)

Comments:

- Additionally (and in parallel) the FP Web-Server (Gateway Unit_1) can be set up to use the modem for Internet dialup and email sending.
- For details on the PPP server settings of the FP Web-Server, refer to configuration example for the FP Web-Server that implemented the PPP server access (see p. 135).

12.1.6 PPP communication via null modem cable

Some Windows versions allow a PPP connection to be established to the FP Web-Server via RS232C and null modem. Such an "RS232C - null modem cable" replaces both modems of the PPP connection, i.e. the computer's RS232C COM port is directly connected to the FP Web-Server's 9-pin port via a null modem cable.

Windows 98 and Windows NT setup for IP communication via RS232C null modem cable:

PROCEDURE

Null modem driver installation:

1. Locate the file "mdmcisc2.inf" on the setup-CD. Copy it to a temporary folder

2. Open the Control Panel of windows and double-click on the 'Modems' icon
3. If a modem is already installed click [Add]
4. Activate the checkbox "Don't detect my modem" and select [Next]
5. Click [Have Disk]
6. Select [Browse] and locate the temporary folder of "mdmcisc2.inf" and click [OK]
7. Select "Generic NULL Modem" and click [OK]
8. Select the COM port of the computer to be used (i.e. COM2) and select [OK]
9. Back on the main modems screen, select the new "Generic NULL Modem" and click 'Properties'
10. Set the maximum speed to the same value as specified in the FP Web-Server configuration (i.e. 38400)
11. Reboot the computer

Remote Dialup Network Setup:

1. Start → Programs → Accessories → Communications → Dialup Networking
2. Create a new connection (double-click on New icon)
3. Enter a name, e.g. "FP Web-Server null modem cable"
4. Select "Generic Null Modem" device
5. [Next]
6. Enter any number in the telephone number field. Click [Next] and [OK]
7. Back on the main 'Dial-up Networking': With the right mouse button click on new icon and select 'Properties'
8. Select 'Server' tab and select "PPP: Internet, Windows NT Server, Windows 98" from the pull-down menu
9. Under 'Advanced option', deactivate "enable software compression" and turn OFF "require encrypted password"
10. Under 'Protocol' select 'TCP/IP' only. Deselect 'NetBEUI' and 'IPX/SPX'
11. [OK]

'Dial-up' and test the FP Web-Server:

1. On the main 'Dial-up Networking' screen double-click on the new icon "FP Web-Server null modem cable"
2. Enter the name and password as defined in the FP Web-Server configuration (see above)

   The 'dial-up' process can take a few seconds. Upon a successful connection an icon is displayed in the system status bar.

To disconnect later, click on this icon and select 'Disconnect'.

3. Use a standard Internet browser that is set up as described under Internet Browser to Test the FP Web-Server (see p. 47)
4. In the location field the IP address of the PPP server can be entered, e.g. http://192.168.206.4 (see FP Web-Server settings under PPP server (see p. 125))

   The page "MAIN.HTM" as set up with the configurator should be displayed.

Windows 2000 and Windows XP setup for IP communication via RS232C null modem cable:

Create a new „direct connection":

1. Start → Settings → Network and Dial-up Connections → Make New Connection
2. Click [Next] and select „Connect directly to another computer". Click [Next].
3. Select „Guest" to define the PPP client. Click [Next].
4. At „Select a device:" locate the „Communication cable between two computers (COMx)". Click [Next].

   Comment:
   COMx, i.e. the computer's RS232C COM port, should be used for the null modem cable. Perhaps the proper COM port number will not be found because it is already used by an installed modem driver. If necessary, remove the common modem driver (see „Control Panel / Telephone and Modem"). Especially under Windows XP, this COM Port may not be configured for any other modem.
5. Select „For all users". Click [Next].
6. Enter a name for this connection. For example „Null modem with COM1 and 19200bps to PPP server". Click [Finish]

   The dial-up, connect screen is displayed.

'Dial-up' and test the FP Web-Server:

If the dial-up, connect screen is not displayed use: **Start → Settings → Network and Dial-up Connections → "Null modem with COM1 and 19200bps to PPP server"**

1. Enter the name and password as defined in the FP Web-Server configuration. Click [Connect]

   The 'dial-up' process can take a few seconds. Upon a successful connection an icon is displayed in the system status bar.

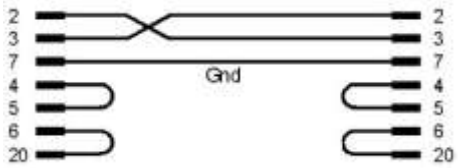
   To disconnect later, click on this icon and select 'Disconnect'.
2. Use a standard Internet browser that is set up as described under Internet Browser to Test the FP Web-Server (see p. 47)
3. In the location field the IP address of the PPP server can be entered, e.g. http://192.168.206.4 (see FP Web-Server settings under PPP server (see p. 125))

   The page "MAIN.HTM" as setup with the configurator should be displayed.

Pin assignment of the RS232C null modem cable

The computer's COM port is directly connected to the FP Web-Server's 9-pin port via a null modem cable.

Use a standard null modem adapter having 9-pin, female, RS232C connectors on both sides. The minimum wiring should be as follows: 2-3 ; 3-2 ; 5-5. (This is the minimum number of wires needed.) The minimum wiring connects the GND and the data lines only. A 25-pin connection should be as follows:

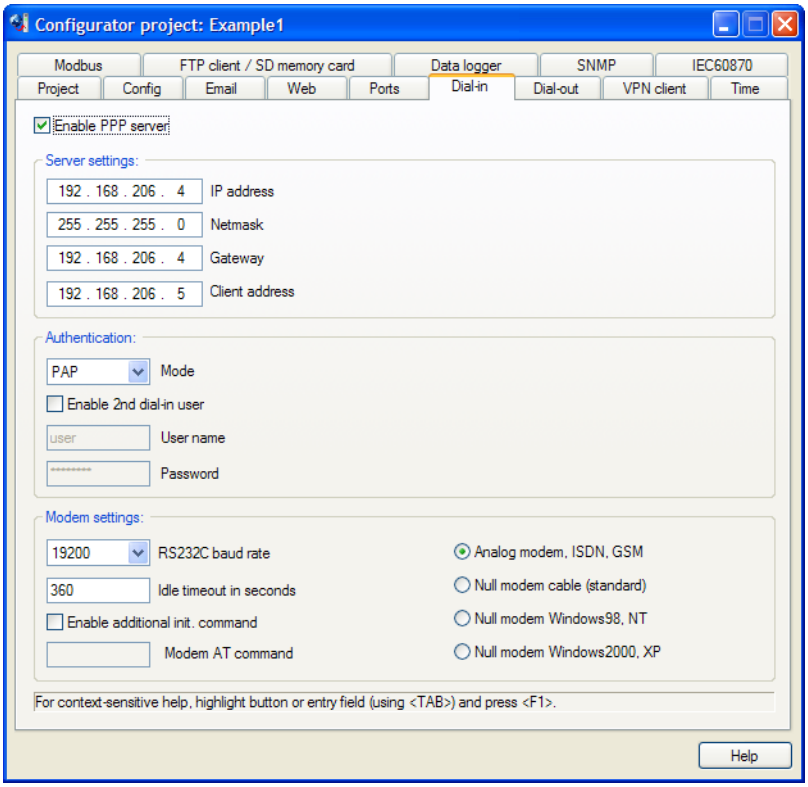


Comment:

The bridges 4-5 and 6-20 on each side are not absolutely necessary. They are only essential for questions of compatibility.

12.2 Dial-in inputs and parameters for PPP server

In the following, the input fields of the "Dial-In" tab of the Configurator for the PPP server configuration are described.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

Comments:

- The PPP-Client has to be set up in such a way that it accepts the remote IP address from the PPP server.
- The modem and the transparent TCP/ RS232C port cannot be used at the same time (except when a second FP Web-Server unit is used).
- The modem has to be connected to the 9-pin RS232C port of the FP Web-Server. The modem must be set up to support the RTS/CTS flow control.
- For a detailed description of the cables refer to PLC Connection, Cable Drawings, Modem (see p. 184).

Chapter 13

Dial-out setup for PPP client

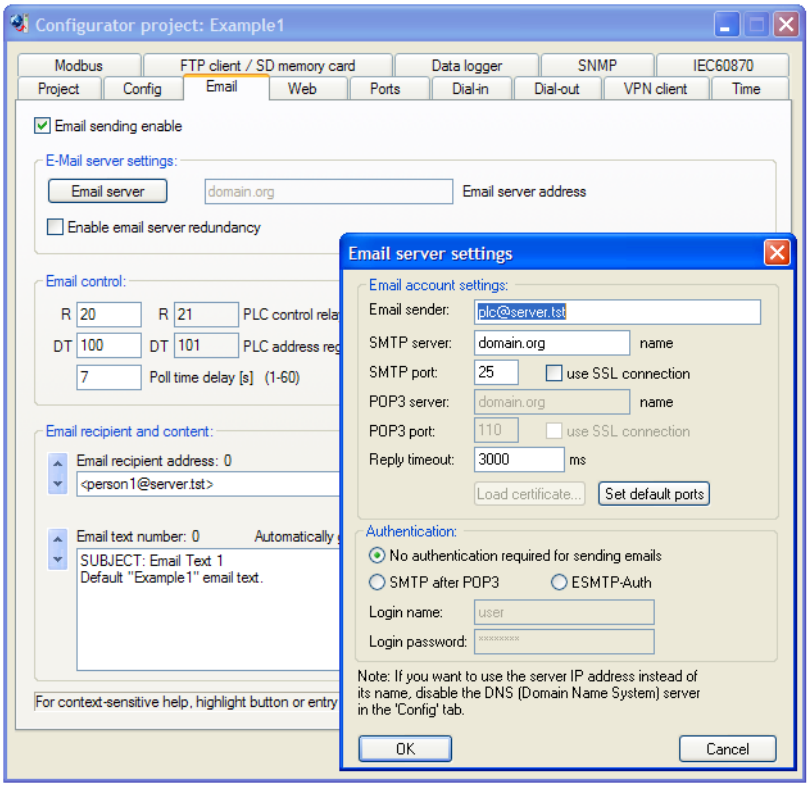
13.1 The Internet dial-out function

13.1.1 Internet email settings

The following step-by-step procedure enables emails to be sent via Internet dialup:

◆ PROCEDURE

1. Register an Internet email account with your email ISP if you do not have an Internet email account
2. Register an Internet dial-up account with your dial-up ISP if you do not have an Internet dialup account
3. In the Email tab (see p. 63), enter the email sender address of your account
4. Select [Email server] to define the email server settings including a POP3 login name and password



5. In the "Dial-out (see p. 156)" tab, enable the option button "Email triggered" and the check box "Dial-up Internet (modem at 9-pin connector)"
6. Enter the telephone number for modem dial-up

   If you use a PBX, set the string "0" or "0w" (with delay after first zero) in front of the number.

7. Enter the login name and password for the dial-up account

   The authentication method is normally set to "PAP".

8. Set a baud rate that complies with the modem used

   The FP Web-Server always connects with the internal settings of 8 bits, none parity and 1 stop bit.

9. Set the idle timeout

   The idle timeout can be lowered to approx. 2 minutes (120s). After this interval, if no data communication has occurred, the FP Web-Server disconnects from the dial-up ISP and hangs up the modem connection.

◆REFERENCE

- **For the settings on "Modem" or "Null modem cable", refer to the online help under modem or null modem cable selection**
- **For further settings, refer to the online help under the keywords "User modem init command" and "Delay after init command".**

◆NOTE

- **For a "dial-out" connection, enable the PPP server function in the "Dial-in" tab. This ensures that upon restart of the FP Web-Server, the modem is switched to offline (hang-up with +++ ATH). Moreover, the 'User modem init command' in the "Dial-in" tab can be used for additional modem setup commands.**
- **For the FP Modem-EU Version 1.16 and the FP Modem-56k, 19200bps are recommended (check the version with the command ATi3). In certain cases the function "automatic baud rate detection" does not work for all possible baud rates.**
  Tip: Use a terminal and set the baud rate with the command AT*W=xxxx to a fixed value, e.g. 19200. This disables automatic baud rate detection.
- **If the modem connection from a remote client to the PPP server is established and an email is to be sent via Internet dialup by the FP Web-Server, the PPP server connection will be cancelled automatically so that it can call the ISP via modem. After the email is sent to the ISP, the PPP server is enabled again.**
- **For the user name and password, only ASCII characters are allowed. Do not use umlauts or Japanese characters.**
- **You can use either the Internet email server (check box is activated) or the transparent TCP/IP port because both need the RS232C port for data exchange.**

Comments

- It is possible to dial up one Internet Service Provider (Dial-up ISP) and use the email server(s) from a second ISP (email ISP). However, some ISPs will not allow this. Using one ISP for both dialup and email is recommended.
- By default the dial-up procedure is initiated by sending an email. Optionally it is possible to set the dial-up mode to "PLC relay controlled" mode.
- In the Internet, email server(s) are normally addressed with a name rather than with its direct IP address. But for name resolution, the IP address of an Domain Name Server (DNS) is necessary. (FP Web-Server hardware version using BIOS v1.03 simplifies DNS usage).
  For easier configuration using the email server(s), direct IP addresses are recommended (...if they can be acquired and are not changed by the email ISP).
- An SMTP (Simple Mail Transfer Protocol) server is needed to send emails. An Internet SMTP server only allows registered users (registered email sender addresses) to send emails. Additionally some email ISPs protect their SMTP servers with a login procedure. For this a POP3 email server is used to check the user name and password before an email can be sent.
  Most of the time a POP3 login is used.
- You can also set up an FP Web-Server that is configured as a PPP server which can the be dialed up by a distant FP Web-Server's PPP client (instead of an ISP). This FP Web-Server, i.e. the PPP server, works as a dialup gateway for a LAN where an email server can be used to send emails.
- For further details on special connections, please refer to the following:
  - "When Using a Cellular Phone (GSM) Modem (see p. 153)"
  - "When Using GPRS Internet Connections (see p. 154)"
  - "When Using ISDN Adapters (see p. 154)"

13.1.2 Notes for advanced users

Idle timeout

If you use the FPWIN Pro library ”M_CE_Lib” to send emails, you have to increase the idle timeout for Internet dialup operations. In the library delivered (see installation path ”Programs / Panasonic-EW SUNX Control / FP Web Configurator 2/ FPWIN-Pro_Example”) with FP Web Configurator Tool version 1.3 and later, the idle timeout is already set to 3 minutes.

M_CE_Lib: Global Variables

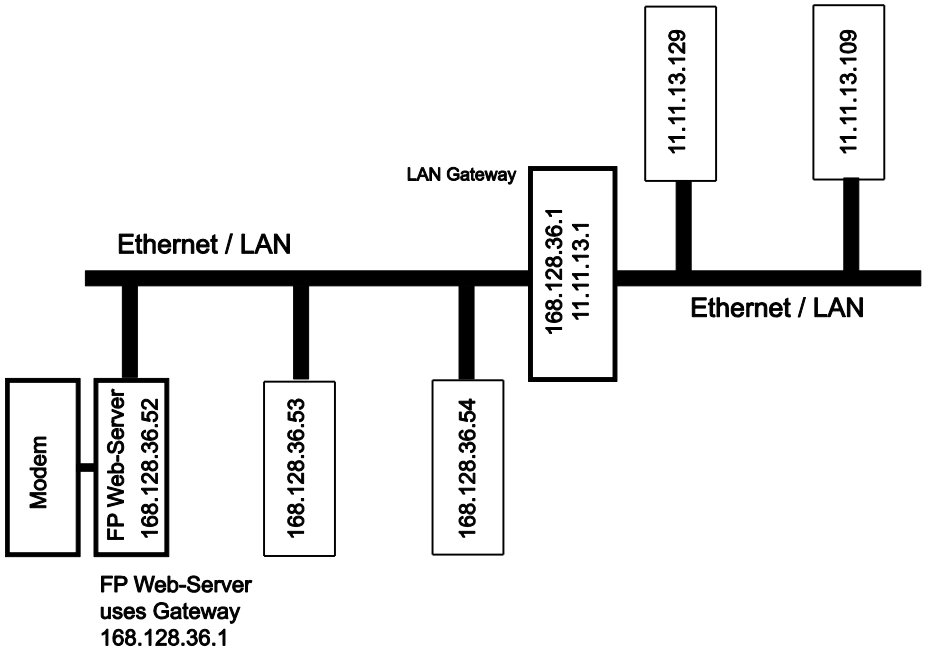
	Class	Identifier	FP ...	IEC Address	Type	Initial	Comment
0	VAR_GLOBAL	MAIL_PLC_CTR_srt	R20	%MX0.2.0	BOOL	FALSE	FP Web-Server start sending email
1	VAR_GLOBAL	MAIL_PLC_CTR_err	R21	%MX0.2.1	BOOL	FALSE	FP Web-Server error sending
2	VAR_GLOBAL	MAIL_PLC_POI_rec	DT100	%MW5.100	INT	0	FP Web-Server pointer to recipient address string or no.
3	VAR_GLOBAL	MAIL_PLC_POI_txt	DT101	%MW5.101	INT	0	FP Web-Server pointer to text string or file no.
4	VAR_GLOBAL_CONSTANT	Server_Timeout			INT	1000	*0.2s FP Web-Server timeout
5	VAR_GLOBAL	mail_add	DT200	%MW5.200	STRING[52]	'<plc.web...	Variable recipient address string (max 52 char)
6	VAR_GLOBAL	mail_txt	DT300	%MW5.300	STRING[255]	'SUBJECT:...	Variable email text string (max 32000 char)

Gateways

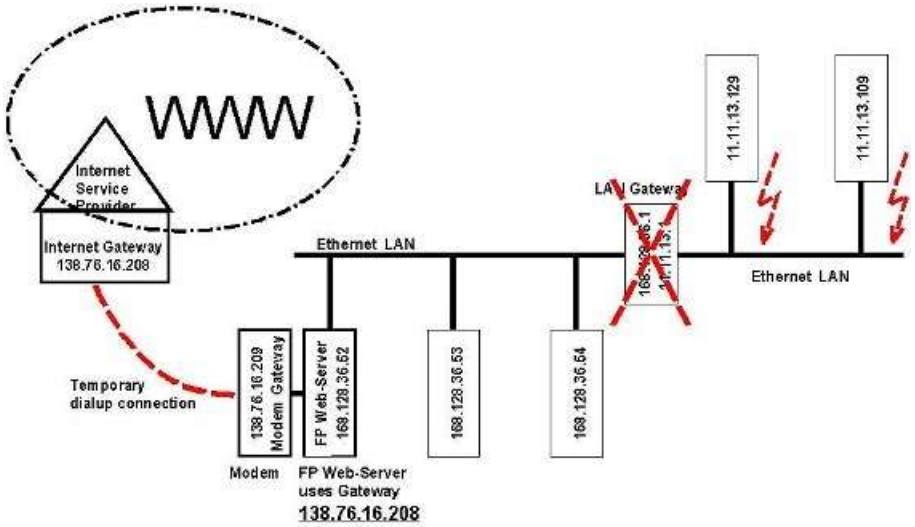
If your FP Web-Server is configured to use a gateway, i.e. if communication with the FP Web-Server is set up via a gateway, you need to take into account that the FP Web-Server does not use this gateway during an active dialup connection. This means that TCP port, FPWIN, PCWAY or http communication through the gateway is temporarily interrupted while an Internet email is being sent.

◆EXAMPLE

- **Before dial-up connection. The FP Web-Server can find all stations.**



- **During dial-up connection. Both stations (e.g. 168.128.36.53 and 168.128.36.54 without using the gateway) can communicate with the FP Web-Server during the Internet dialup connection. The other stations (e.g. 11.11.13.129 and 11.11.13.109) that use the gateway may get communication errors while Internet dialup is active. This is valid for all connection modes of TCP communication, e.g. http, email, port communication and configuration (Telnet, FTP).**



Blocked emails

Some email ISPs, e.g. GMX, may block sending emails if the PLC sends too many emails or emails are sent in quick succession. No official documentation or explanation could be found at GMX. It can be assumed that GMX blocks sending 'swamp mail'.

Modem connection and setup

The FP Web-Server's dial-out (PPP client) function is set up for RTS/CTS handshake (pin 7 and 8 of the 9-pin connector). The following two paragraphs describe how to setup the modem to also support RTS/CTS handshake. Only if the connected modem cannot support RTS/CTS handshake should pin 7 be bridged to pin 8. However, this is not recommended and should only be used with a slow modem baud rate (max. 9600 or 19200 bps).

- The FP Web-Server firmware is designed for a FP Modem-EU or a FP Modem-56k connected to its 9-pin port for Internet dialup. For this a 1:1 9-pin RS232C cable (standard computer to modem cable) can be used to connect the FP Modem-EU or the FP Modem-56k to the 9-pin connector of the FP Web-Server.
  The FP Web-Server assumes the FP Modem-EU or FP Modem-56k factory default settings. To make sure that the FP Modem has factory settings, please use a terminal program on your computer and enter the command AT&F&W. Please also make sure that all DIP switches of the FP Modem are set to the **OFF** position!
- If a standard computer modem is to be used it can also be connected by a 1:1 9-pin RS232C cable (standard computer to modem cable) to the 9-pin connector of the FP Web-Server. Before the modem is connected to the FP Web-Server, please use a terminal program to enter the appropriate AT commands (see modem manual):
  - Ignore DTR changes (AT&D0)

- RTS/CTS hardware handshake (AT&K0&R0)
- No wait on dial tones (ATX3)

This setting is saved with the command AT&W for the next power-up or ATZ command. If the modem is connected via a PBX to the PSTN, a "0" or "0" can be put in front of the Dialup ISP telephone number.

Dialup and email tests

The enhanced email functions like POP3 login and name resolution via DNS can also be tested in a LAN, i.e. also in the local Ethernet a POP3 login and DNS access can be tested. The network administrator can provide the parameters and addresses.
To test the Internet dialup and the Dialup ISP parameters, a Windows computer with 'remote dialup networking' can be used. This setup plus an email client like "Eudora" or "Outlook" can be used to test the email servers and the Email ISP parameters.
For tests in Germany, we included "Example7".
Later versions will implement an extended status display.

FP Web-Server configured as a PPP server

You can also configure a second FP Web-Server as a PPP server which can then be dialed up instead of an ISP. This remote FP Web-Server, i.e. the PPP server, works as a dialup gateway for a LAN where an email server can be used to send emails.

13.1.3 When using a cellular phone (GSM) modem

Please note the following when a cellular phone (GSM) module is used by the FP Web-Server to call an ISP before sending an email:

1. At the dialog "Email Server Settings" enter a high value (17000ms or more) for the timeout of the DNS and Email Server.
2. At the dialog "Internet Dialup Settings" only the baud rate can be set. The FP Web-Server always uses 8 data bits, no parity and 1 stop bit.
3. Be careful with the GSM antenna! Maintain distance to other units (PLC, modem, FP Web-Server...), which may cause interference by high level radio waves.
4. Set the GSM module to the factory settings (default settings) before connecting to the FP Web-Server.
5. Please reboot (power up) the FP Web-Server after changing cables and connectors. Especially after connecting a modem / GSM module to the FP Web-Server, it is necessary to restart the unit for modem initialization and recognition.
6. Most of the GSM providers also offer Internet services. In this case these providers will not allow you to dial up other Internet Service Providers via GSM! I.e. if you have a GSM contract with company **XYZ** and this company also offers Internet dial-up services, you cannot use your GSM module to dial up Internet services from the other company, e.g. **ABC**.
7. The PIN code entry command AT+CPIN=xxxx can be entered in the text field "Additional User Modem init. command" in the tab "Dial-In (see p. 145)" or/and "Dial-Out (see p. 156)".

13.1.4 GPRS Internet connections

In general a GPRS connection is set up in the same way as a regular PPP dial-up (see p. 156) connection. The exceptions are:

- The telephone number of the Internet dial-up provider is replaced by *99***1#
- Only a connection to the Internet is possible
- The data amount transferred is billed (not the online time as with GSM)
- A special +CGDCONT parameter (provider-dependent) is needed to set up the module

We have tested the Siemens MC35 and the Wavecom Fastrack GPRS units. Both are to be set up in a similar way. For the Siemens MC35 the two parameters +CGDCONT and +CGQREQ are automatically set up with the SIM card. For the Wavecom Fastrack you have to initialize it once manually. Use a terminal with 9600 8n1 and enter AT+CPIN=xxxx to log onto the network. Then enter:

1. AT+CGQREQ=1,3,4,3,0,0 (Provider-dependent)
2. AT+CGDCONT=1,"IP","Internet.t-d1.de" (Provider-dependent)
3. AT+IPR=0 (Automatic baud rate detection)
4. AT+IFC=2,2 (RTS/CTS handshake)
5. AT&W

In this example the parameters for the German GPRS provider "T-Mobile" were used. Please ask your GPRS provider for the correct parameters.

The „Modem init command“ in the „Dial-Out” section can also be used for additional modem setup commands such as AT+CGDCONT=. Or it can be used for the PIN code entry. The AT commands listed here are transferred to the modem shortly before the dial-up command for the Internet.

For GPRS "dial-out" connection, enable the PPP-Server function (see p. 145) in the "Dial-In" section. The „Modem init command“ in the „Dial-In” section can be used for additional modem setup commands. Maybe the AT+CGDCONT command can be entered here.

For continuous Internet connections via GPRS, enable "periodic communication test function".

For GPRS connection, hardware version 1.0 should not be used.

For details, refer to the online help under 'Example12', which demonstrates how to set up and test continuous GPRS Internet connection. .

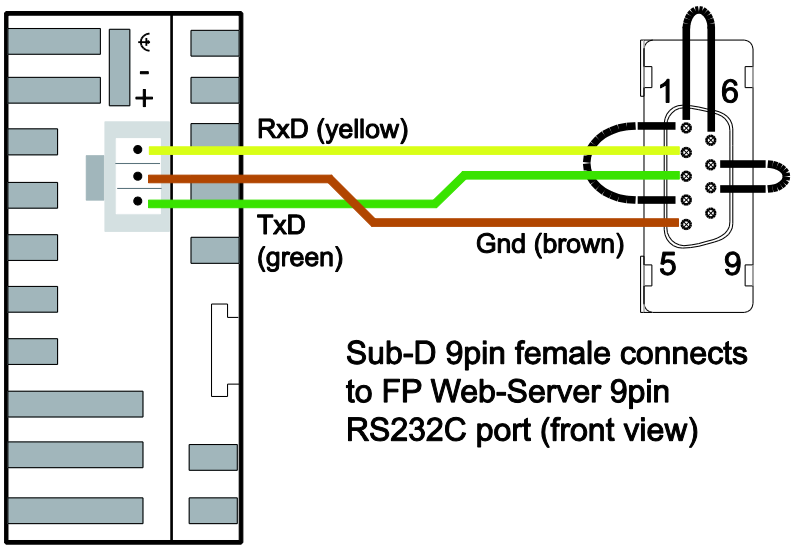
13.1.5 When using ISDN adapters

The PPP-Server (dial-in) and PPP-Client (dial-out) of the FP Web-Server can also handle ISDN modem adapters for remote connections. Following are some hints to use the FP ISDN 64k adapter from PEW Germany:

- Enable the PPP-Server (dial-in) also for dial-out connections
- Reset the FP ISDN 64k with AT&F3 (see dial-in user init. command)
- Possible modem baud rate up to 57600 bps
- RS232C cable from the FP ISDN 64k to the 9-pin Sub-D of FP Web-Server:

FP ISDN 64k		**FP Web-Server**
FG	----------	2 (yellow)

+ ---------- 3 (green)
- ---------- 5 (brown)
7 --- 8 bridge in d-sub
4 --- 1 --- 6 bridge



13.2 Internet dial-out settings

Open the "Dial-out" tab, select the control method, and activate the check box "Dial-up Internet (modem at 9-pin connector)" to configure the settings for:

- ISP Dial-up
- Modem
- Continuous Internet connection

◆**NOTE**

The modem must be set up to support the RTS/CTS flow control. Together with the PPP client, we recommend enabling the PPP server (see p. 145). You can also enter an optional, additional, user-defined modem initialization command.

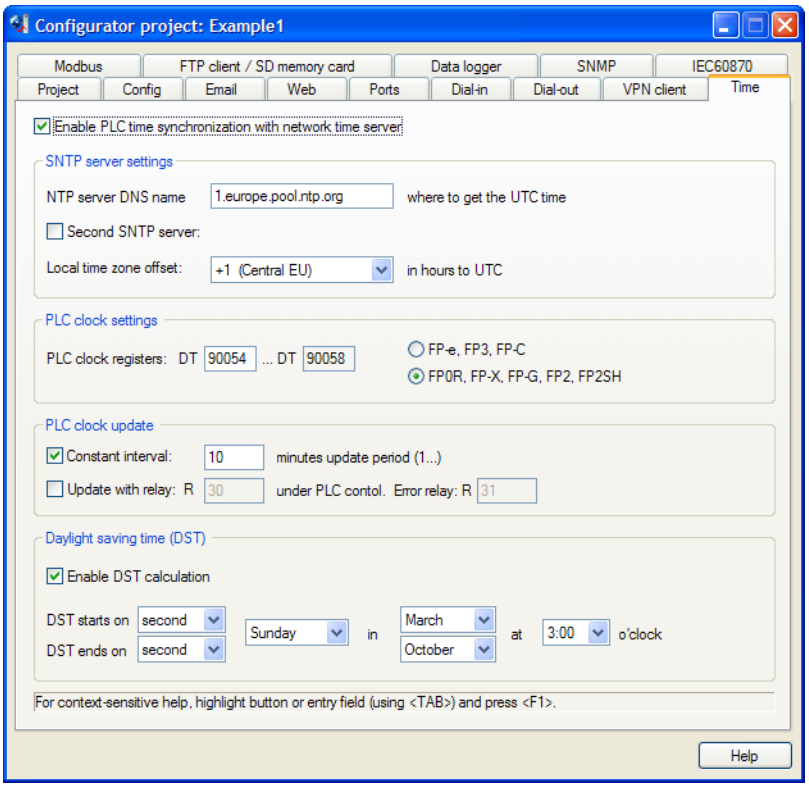
For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

Chapter 14

NTP server for PLC clock synchronization

14.1 (S)NTP servers

The (S)NTP server function is found on the "Time" tab and is used to synchronize the PLC clock with a network time server.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

In most LANs a Network Time Server (NTP or SNTP) is available to synchronize the real-time clock (RTC) and calendar date of the network units (computers). Such NTP servers provide accurate world date/time information in UTC format (Universal Time Coordinate).

The FP Web-Server can request the current UTC time from the NTP server. Optionally the FP Web-Server can calculate the local time with a daylight saving time (DST) offset. And then the FP Web-Server can update the date/time RTC registers within the PLC. The update of the PLC clock can be done independently of the PLC program in constant time intervals.

Additionally the FP Web-Server can be set up in this way so that a PLC-controlled internal relay can trigger a PLC clock update.

The FP Web-Server can also save clock information in a user-definable DT register address. This is especially useful for PLCs having no integrated RTC.

◆NOTE

The separate battery must be installed to use the RTC functions of the FP-Sigma.

The time function is mainly designed to request the current time from an NTP server located in the LAN to update the PLC clock. "Example15" also shows how to dial up the Internet to request the time from an Internet NTP server to update the PLC clock.

◆REFERENCE

For more information on world time and DST see:

- http://www.worldtimezone.com/
- http://www.twinsun.com/tz/tz-link.htm
- http://www.weltzeituhr.com/
- http://www.pool.ntp.org/en/

◆NOTE

- **Please be aware that an enabled NTP module takes up about 11kB of the FP Web-Server's FLASH memory.**
- **The server timeout is 2 minutes, i.e. the NTP server must respond to the time request of the FP Web-Server within 2 minutes.**

Chapter 15

Modbus functions

15.1 Overview on modbus-TCP functions of the FP Web-Server

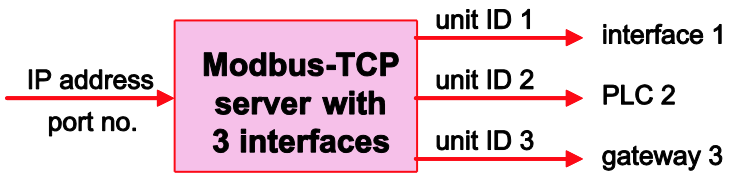
General information on Modbus-TCP

The Modbus-TCP is a standard global communication protocol (IAONA, Modbus-IDA) and is used to connect the PLC to third-party PLC equipment, SCADA systems, OPC servers, and Modbus RTU gateways.

A Modbus-TCP server waits for an incoming connect from a Modbus-TCP client. Hence:

- A Modbus-TCP server (Ethernet) is comparable to a Modbus RTU slave (serial).
- A Modbus-TCP client (Ethernet) is comparable to a Modbus RTU master (serial).

A Modbus-TCP server is addressed with a unique IP address and a port number (default 502). Using a unit ID address in the Modbus-TCP data packet, various interfaces of the Modbus-TCP server can be addressed. The unit ID is comparable to the slave address in Modbus RTU communication.



Modbus communication is based on a number of specified function codes which can address different data types. Which function codes and data types are supported depends on the unit implementation.

FP Web-Server specific implementation

The FP Web Configurator Tool allows you to configure the FP Web-Server (as an interface to the PLC) with the following Modbus-TCP server and client functions.

Function		Comment
A **Modbus-TCP server (see p. 164)**	A1 Modbus-TCP server	Modbus-TCP client → FP Web-Server → PLC (see note 2)
	A2 Modbus-TCP server	Modbus-TCP client → FP Web-Server → multiple PLCs (see note 1 and note 2)
	A3 Modbus-TCP server gateway	Modbus-TCP client → FP Web-Server → Modbus RTU slave (see note 1)
B **Modbus-TCP client (see p. 166)**	B1 Modbus-TCP client	PLC → FP Web-Server → Modbus-TCP server
	B3 Modbus-TCP client gateway	Modbus RTU master (see note 1) → FP Web-Server → Modbus-TCP server
In addition: Modbus RTU functions (for PLCs that do not support Modbus RTU protocol)	B2 Modbus RTU master	PLC → FP Web-Server → Modbus RTU slave (see note 1)
	B4 Modbus RTU slave	Modbus RTU master (see note 1) → FP Web-Server → PLC

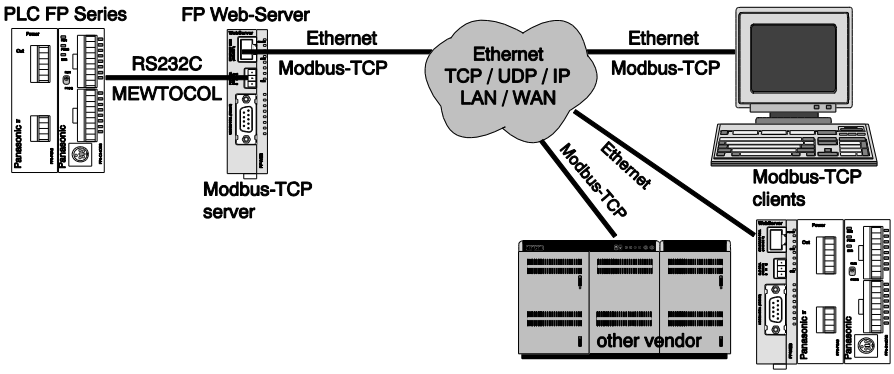
For an overview on all functions, please refer to the block diagram (see p. 16).

◆NOTE

1. **This function uses the 2nd RS232C (9-pin Sub-D connector).**
2. **Since Modbus protocol, in contrast to the PLC, only recognizes 4 different memory areas, a configurable address translation table was implemented. This allows you to configure offsets so that Modbus "coils" and "registers" correspond to the PLC's memory areas: X, Y, R, DT, FL, WR, etc.**
3. **Various functions can be combined and used simultaneously.**
4. **Most functions support the same list of Modbus function codes.**
5. **You can configure all these functions manually or with the help of the wizard.**

15.2 Modbus-TCP server of the FP Web-Server in general

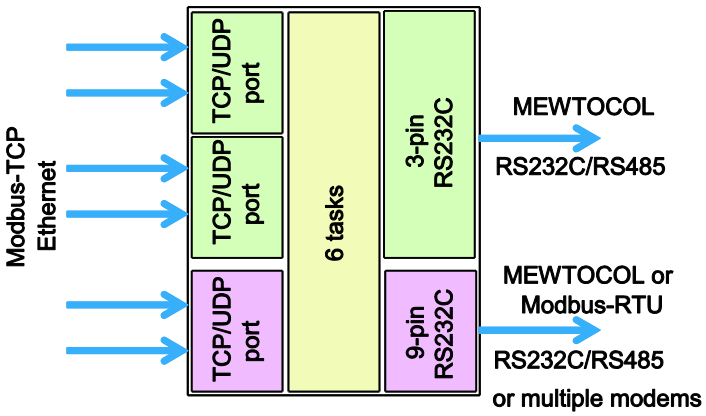
The FP Web-Server can be accessed by a Modbus-TCP client (SCADA) via Ethernet for PLC data communication. To do so, the FP Web-Server requests PLC data (MEWTOCOL protocol) via the 3-pin or/and 9-pin RS232C port or the serial ports (RS485, USB) of the FP Web expansion unit. The 9-pin RS232C can alternatively communicate via Modbus RTU protocol with a Modbus RTU slave unit.



Modbus-TCP communication can also occur via modem. To do so, the client must first dial up the FP Web-Server's PPP server to establish a modem connection.

The Modbus-TCP server can handle up to 6 client connections simultaneously. If there are already 6 connections and another client wishes to establish a connection, the oldest connection can be ended automatically.

Up to 3 different port numbers are possible. Alternatively, these ports can be switched to UDP communication where each UDP port is assigned one task. Both of the FP Web-Server's RS232C ports can be addressed.



Features:

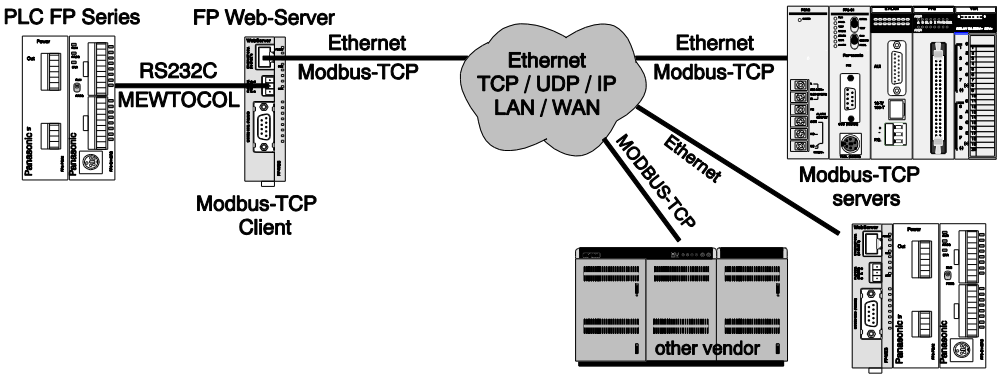
- The Modbus-TCP client can address the FP Web-Server's two RS232C ports (MEWTOCOL or Modbus RTU) by using a port number or unit ID.

  Detailed information:
  For more information on Modbus-TCP server settings and the respective server functions, please refer to the online help under the keyword "Modbus-TCP server Settings".
- This function uses the configurable Modbus to PLC address translation table.
- The gateway function routes all Modbus function requests.
- The Modbus-TCP server can handle UDP broadcast messages (FP-WEB2 does not generate a response message).
- An integrated setup wizard helps you configure the Modbus-TCP server.
- NumberMaxOfServerTransactions = 6
- SO-RCVBUF, SO-SNDBUF = 4kB with TCP and 2kB with UDP (other IP stack parameters can be defined)

15.3 Modbus-TCP client of the FP Web-Servers in general

Either the PLC or a Modbus RTU master unit can control the Modbus-TCP client functions of the FP Web-Server.

- For PLC control, a shared buffer in the PLC's memory is used. The PLC program places either the server IP address or the server URL name and Modbus commands in this buffer. The FP Web-Server reads the buffer and executes the commands. Additionally, the PLC can also access a Modbus RTU slave unit via the 9-pin RS232C interface. When URL names are used, a default URL has to be defined.
- Any Modbus RTU master connected to the 9-pin RS232C of the FP Web-Server can access a remote Modbus-TCP server. This gateway routes all Modbus RTU function requests to the Modbus-TCP server. Optionally the Modbus RTU master can address different Modbus-TCP servers (IP address and/or unit ID is calculated by the accessed RTU slave address) or the local PLC directly.



The Modbus-TCP communication can also be done via modem. For this, the client (FP Web-Server controlled by the PLC, see PLC sample program "Dialup-StayOnline.asc") has to dial up the Modbus-TCP server to establish a modem connection before Modbus-TCP communication can take place.

The PLC can also control continuous, automatic data exchange via Modbus protocol. See PLC sample program "Modbus-TCP-Client.asc", which is installed along with the FP Web-Configurator.

Features:

- This function uses the configurable Modbus-to-PLC address translation table.
- The gateway routes all Modbus function requests.
- The Modbus-TCP client can also handle UDP broadcast messages (all responses from the servers are ignored).
- An integrated setup wizard helps you to configure the Modbus-TCP client.
- NumberMaxOfClientTransactions = 6 (if all are busy, then the oldest is disconnected).
- SO-RCVBUF, SO-SNDBUF = 4kB with TCP and 2kB with UDP (other IP Stack parameters can be defined).

Further information:

For more information on Modbus-TCP client settings and the respective client functions, please refer to the online help under the keyword "Modbus-TCP client settings".

15.4 Appendix for Modbus functions

The following sections are described here:

- Combining multiple Modbus functions
- Address translation table
- Supported Modbus functions
- Modbus-TCP server performance
- PLC buffer definition for the Modbus-TCP client
- Sample PLC programs to control the Modbus-TCP client functions

For more information, please refer to the online help under the keyword "Appendix for Modbus Functions".

Chapter 16

IEC 60870 functions of the FP Web-Server

16.1 IEC 60870 general functions

The following connections to the FP Web-Server are possible:

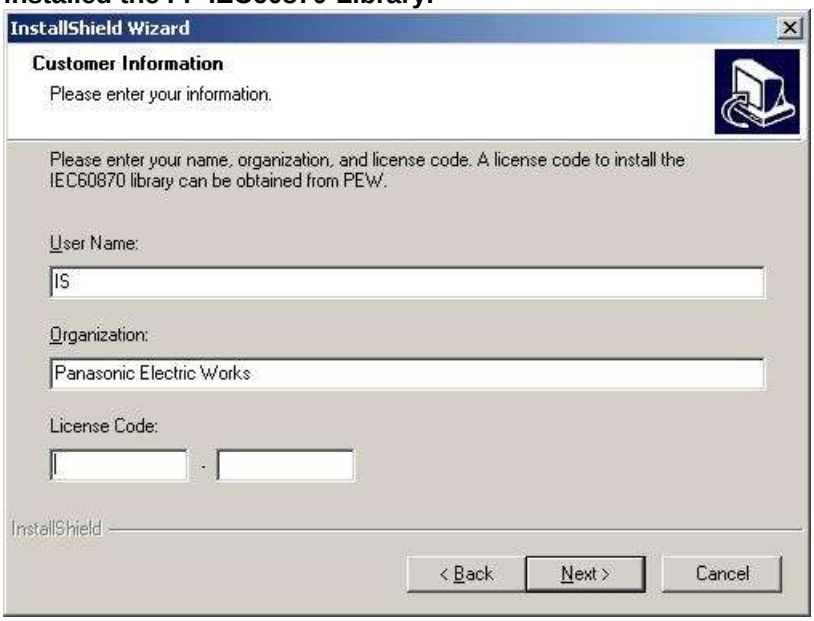
1. The PLC is connected to the FP Web-Server via a 3-pin RS232C up to 115200 bps (see PLC connection to the FP Web-Server (see p. 184)).
2. IEC 60870-5-101 Unbalanced/Balanced Communication (9-pin RS232C of the FP Web-Server unit)
   - directly via RS232C to the central station
   - Multipoint via C-Net (RS485) adapter (AFP8536) up to 19200 bps
   - Multipoint via FP Modem-EU or FP Modem-56k (V.23 via twisted pair cable) with 1200 bps
   - PSTN modem dialup connection (extension specified by OHP). This connection receives calls from and/or dials out to the central station. Analog modem, ISDN adapter or GSM module can be used.
3. IEC 60870-5-104 communication (via RJ45 Ethernet connector of the FP Web-Server unit)
   - via Ethernet
   - TCP/IP communication also possible via PPP-Server and dialup modem connections

Comment:
If an IEC 60870-5-104 Ethernet connection is established from the central station to the FP Web-Server, an IEC 60870-5-101 connection via RS232C is impossible. As soon as there is no Ethernet connection, the IEC 60870-5-101 connection can be established via RS232C again.

◆**NOTE**

- **Using IEC 60870 communication the PLC needs to execute special IEC 60870 function blocks. These PLC function blocks are delivered as an FPWIN Pro library together with the FP Web Configurator Tool. The IEC 60870 FPWIN Pro library, accompanying examples and interoperability documentation can be installed from the FP Web Configurator Tool CD-ROM. For details refer to the Library's online help (see p. 175).**
- **The "IEC 60870" tab will be enabled in the FP Web Configurator Tool (versions 2.16 and higher) after you have entered the license code and**

installed the FP IEC60870-Library.



- **If the IEC 60870 functions are to be used (check box "Enable IEC60870" is active), disable standard FP Web-Server's functions like http, email, PPP server or port function (see p. 118). If these standard functions are enabled at the same time as the IEC 60870 protocol, the reaction time and performance of the FP Web functions may slow down.**
- **If the 9-pin RS232C port is set up for IEC60870-5-101 communication, MEWTOCOL communication can take place. The IEC60870 polling from the central station must be stopped before MEWTOCOL communication can be used. MEWTOCOL commands are sent directly to the PLC. This version only allows short (standard) MEWTOCOL commands.**

Perform the following steps to disable extended MEWTOCOL commands for FPWIN Pro:

◆PROCEDURE

1. Locate file "NAiS_MewPLC.DAT" under C:\Program Files\NAiS MEWNET
2. Open "NAiS_MewPLC.DAT" with a text editor, e.g. Notepad
3. Find the section for your PLC, e.g. [FPSIGMA] or [FP2]
4. Set the parameter EXTCMD=0 to zero
5. Save changed file "NAiS_MewPLC.DAT"
6. Restart FPWIN Pro

16.1.1 Details of the IEC 60870 configuration: modem and multipoint settings

■ **Multipoint with FP Modem-EU or FP Modem-56k**

- Line parameter: half duplex 1200bps (independent of the RS232C baud rate)
  - communication via V.23 mode 2 norm via twisted pair cables
  - terminator: see manual of FP Modem-EU or FP Modem-56k
- Modem setup: initialization with PC and terminal program
  - set all DIP switches of the modem to OFF and connect to the PC
  - set the terminal to 1200bps, 8 data bits, parity ODD and 1 stop bit (see note 1)
  - Use the terminal to reset the modem to AT&F&W
  - store the settings of RC232 format (see note 1)
  - AT*W=1200,8,O,1
  - set modem DIP switch 2 to ON
- Connect the modem to RTI (RTU) via the standard modem cable 1:1
- RS232C signal (PC mode): DCD shows status line, i.e. line is busy
- RTS initializes sending: CTS after RTS means OK to send
- Settings for **RTI** (Lian98 from Ver 1.0.1.2 onwards):
  - baud rate, data bits, parity, stop bits set to same values as the modem (see notes)
  - timeout 280ms minimum
  - modem: half duplex
  - transmission: unbalanced
- Settings of **RTU** (IEC Communicator):
  - baud rate, data byte, parity, stop bits set to same values as the modem (see notes)
  - handshake: RTS/CTS
  - mode: Multipoint-party line

◆**NOTE**

1. **Parity even and a baud rate other than 1200bps are only available from FP Modem-EU firmware version 1.23 onwards (use ATi3 to display the version), or use the FP Modem-56k instead.**
2. **The same baud rate is recommended for RTI and RTU.**
3. **Multipoint communication with the FP Modem-EU and FP Modem-56k is compatible with standard industrial multipoint units.**

■ **Multipoint with C-Net adapter**

- Line parameter: half duplex RS485
  - baud rate: format as RS232C (up to 19200bps)
  - terminator: see manual of the adapter used
- C-Net adapter: AFP8536 is tested only
  - no handshake is used
- RS232C cable from AFP8536 to RTI / RTU:
  - AFP8536: 9-pin RS232C female
  - RTI/RTU: 9-pin male IBM PC standard

AFP8536	PC
pin 2 ---- pin 2	
pin 3 ---- pin 3	
pin 7 ---- pin 5	
bridge: pin 4 -- pin 5	bridge: pin 7 -- pin 8
bridge: pin 8 -- pin 9	bridge: pin 4 -- pin 6

- Settings for **RTI** (Lian98 from Ver 1.0.1.2 onwards):
  - baud rate 19200bps
  - data bits, parity, stop bits set to same values as RTU
  - timeout 200ms minimum
  - modem: full duplex
  - transmission: unbalanced
- Settings for **RTU** (IEC Communicator):
  - baud rate 1200bps
  - data bits, parity, stop bits set to same values as RTI
  - handshake: NONE
  - mode: RS232C

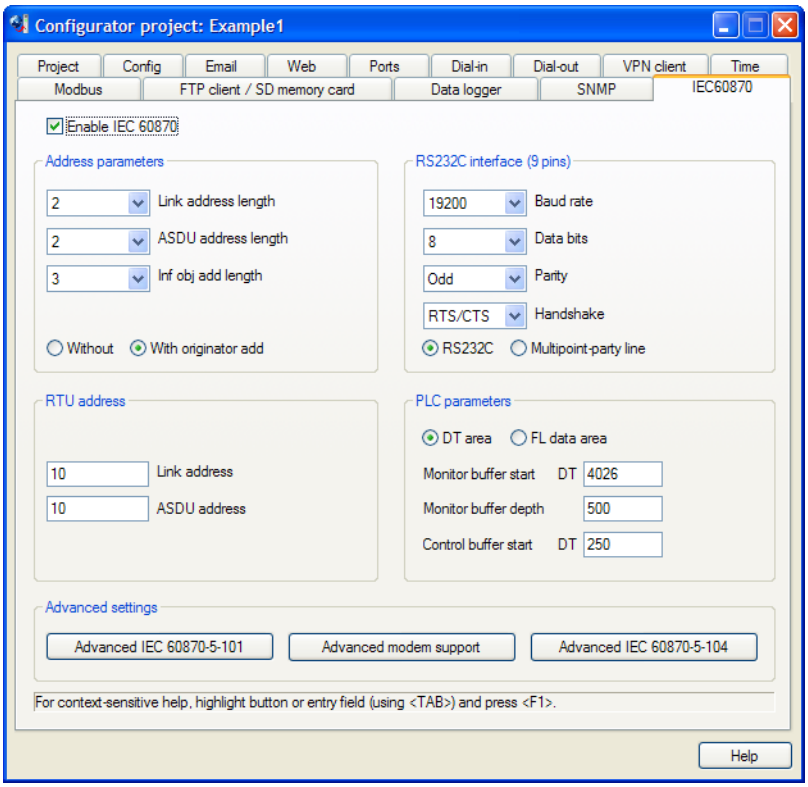
■ **Optimized IEC60870 multipoint modem handling**

The optional RTS delay timing for optimized multipoint modem RTS control can be determined in the MEW60870.INI file.

- MP_WAIT=50: Wait time in ms; Wait this long before activating RTS (between the data packets)
- MP_LEAD=130: Lead time in ms; Actvate RTS for this time period before sending the data.
- MP_HOLD=20: Hold time in ms; After sending data, wait this long before deactivating RTS.

16.2 Parameters for IEC 60870

Open the "IEC60870" tab in the Configurator to make your settings.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

16.3 IEC 60870 library for control FPWIN Pro

To use the IEC 60870 functionality of the FP Web-Server, a library for Control FPWIN Pro is delivered with your Installation CD. For details, refer to the online help of the Library. Click [Start] -> Programs -> Panasonic-EW SUNX Control -> FPWIN Pro Libraries -> FPWIN Pro IEC60870 Library 2 -> M_IEC60870.chm to open the online help for the FPWIN Pro Library.

Please find the library "M_IEC60870_LIB.sul" for FPWIN Pro with the respective examples and the description of the interoperability that came on your installation CD. IEC 60870 functionality is only enabled when both the library **and** the Configurator are set up accordingly. It does not matter whether the Configurator or the library is installed first.

Chapter 17

SNMP functions

17.1 Overview of SNMP on the FP Web-Server

General Information on SNMP

Simple Network Management Protocol (SNMP) is a UDP-based network protocol. It is used mostly in network management systems to monitor network-attached devices for conditions that warrant administrative attention. In typical SNMP use, one or more administrative computers called managers have the task of monitoring or managing a group of hosts or devices on a computer network. Each managed system executes, at all times, a software component called an agent which reports information via SNMP to the manager.

Essentially, SNMP agents expose management data on the managed systems as variables. The protocol also permits active management tasks, such as modifying and applying a new configuration through remote modification of these variables. The variables accessible via SNMP are organized in hierarchies. These hierarchies and other metadata (such as type and description of the variable) are described by Management Information Bases (MIBs).

FP Web-Server implementation

The SNMP agent allows the SNMP manager to transfer data to and from FP Web-Servers via Ethernet using SNMP version 1 protocol. The FP Web-Server serves as an SNMP agent.

◆**NOTE**

SNMP versions 2 and 3 are not currently supported.

Commercially available SNMP manager tools can be configured to read values specified by their SNMP Object Identifiers (OIDs), which are defined in the MIB file (Management Information Base) of the target device. The FP-WEB2 MIB file specifies the OIDs to use. Panasonic Electric Works has its own Enterprise ID 396. The MIB file is fixed and is supplied by PEWEU on the CD for the FP Web Configurator Tool. A selection of standard MIB-2 OIDs are supported to allow interaction with popular network management packages.

◆**NOTE**

- **The SNMP requests "**Get, GetNext, Set**" and the asynchronous** Trap **information from the agent to the SNMP manager are supported.**
- **The following standard SNMP data types can currently be displayed: IpAddress, DisplayString, Counter, INTEGER, OCTET_STREAM, TIMER_TICKS, Gauge, String, ObjectID.**
- **The SNMPv1 protocol does not support Floats.**

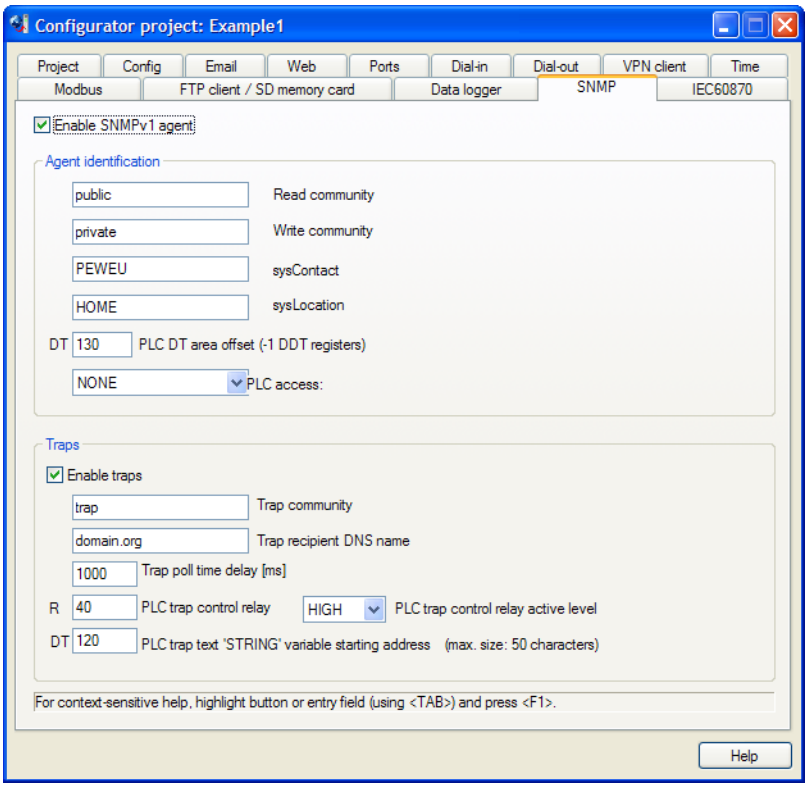
The current version of the SNMP agent can send SNMP traps. The following trap types are currently supported:

- Cold Start Trap
- Authentication Failure Trap
- Enterprise Specific Trap:
  - PLC relay controlled Trap (specific trap number 1)
  - RS232C Communication Down Trap (specific trap number 2)
  - RS232C Communication Up Trap (specific trap number 3)

SNMP Traps make use of the String data type in addition to the Integer type since they include text messages.

17.2 Parameters for SNMP

Select the "SNMP" tab to make your SNMP settings.



For context-sensitive help, highlight the button or entry field (using <Tab>) and press <F1>.

Chapter 18

Additional information

18.1 Contents of the CD and auxiliary programs

You will find the following folders on the CD:

Folder	Subfolder	Comment
FP Web Configurator		Configurator Setup including examples for http and FPWIN Pro
FP-Web Documents		Various documentation, Manuals
FP-IEC60870 Library		Setup of FPWIN Pro IEC 60870 library, examples and documentation of inoperability
FP WEB IP Address Configurator		Tool for configuring the IP address for the FP Web unit
HttpDataLogger		Reads Web-file with PLC Data and saves it as formatted files on disk of local PC
Other Tools	COM_IP	RS232C to Ethernet Redirector
	Flash_Plugin	Required to display Flash grafics in the HTML help
	RS232C_TCP Redirector	Redirector using two COM Ports
	PPP-Cable	PPP Connection via Null Modem Cable plus driver for the FP Modem-EU (now supports all versions of Windows NT) and the FP Modem-56k
	TCP_Server_Client	Visual Basic and C++ examples for programming a TCP server or client application for windows.

◆NOTE

Please pay attention to possible license regulations!

18.2 Description of the HTML examples

The following examples supplied with the installation of the FP Web Configurator Tool show in a simple way the HTML functions of the FP Web-Server and may be used as source material for advanced projects. All examples for editing can be found in the installation directory of the FP Web-Server under "Program Files/ Panasonic-ID SUNX Control/ FP Web Configurator 2/ Example..". All examples are saved as "read-only" projects. If these examples are changed, the project has to be saved (Save As..) in a different location.

REFERENCE

For a detailed description of each example, please refer to the online help under the keyword "Example" and the respective number of the example.

18.3 PLC connection, cable drawings, modem

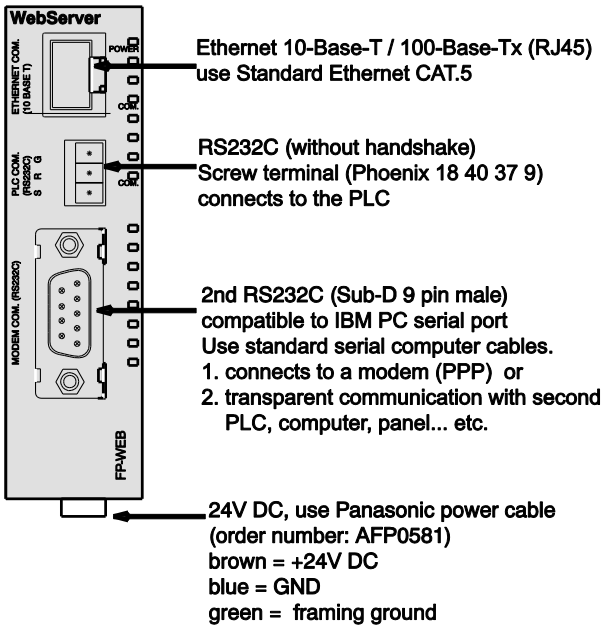
◆**NOTE**

Please also see the installation sheet " FPWEB_Server_Leaflet" supplied with your FP Web-Server for important notes, cables and installation.

To connect and wire to an Ethernet, please refer to "Setup of an Individual Ethernet LAN (see p. 192)".

18.3.1 PLC connection

Cables for the FP Web-Server:

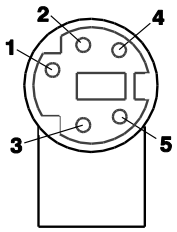


Note: The green wire MUST be connected to FG!

18.3.2 Cable drawings and modem

The possible cables for connecting the FP Web-Server to a Panasonic PLC:

Tool port FP-X/-e/0/-Σ/-M/2/2SH using cable AIGT8192



FP Web-Server Screw Terminal 3-pin	PLC Tool port Sub-D male 5-pin	Description
G	1 (brown)	G (GND) = System ground
R	2 (red, white)	R (RXD) = Receive data
S	3 (orange, green)	S (TXD) = Transmit data

COM port FP1/-M/2/2SH/10SH, SDU FP2/3 using cable AIP81842

FP Web-Server Screw Terminal 3-pin	PLC COM. Port Sub-D male 9-pin	Description
G	7 (brown)	G (GND) = System ground
R	2 (red, white)	R (RXD) = Receive data
S	3 (orange, green)	S (TXD) = Transmit data
	4	
	5	

COM port FP-e/FP0

FP Web-Server Screw Terminal 3-pin	PLC COM. Port Screw Terminal	Description
G	SG/G	SG/S (GND) = System ground
R	SD/S	RD/R (RXD) = Receive data
S	RD/R	SD/S (TXD) = Transmit data

COM1, 2, 4 modules FP-X/FPΣ

FP Web-Server Screw Terminal 3-pin	PLC COM1/4 Screw Terminal	PLC COM2 Screw Terminal	Description
G	SG	SG	G/SG (GND) = System ground
R	SD	S1	R/RD/R1 (RXD) = Receive data
S	RD	R1	S/SD/S1 (TXD) = Transmit data
	RS	only COM1	
	CS	only COM1	

G (GND) = System Ground

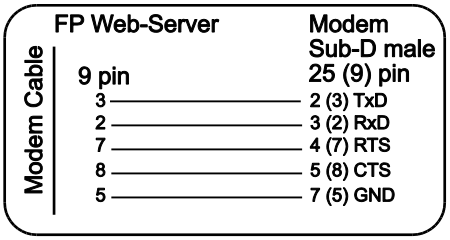
R (RxD) = Receive Data

S (TxD) = Transmit Data

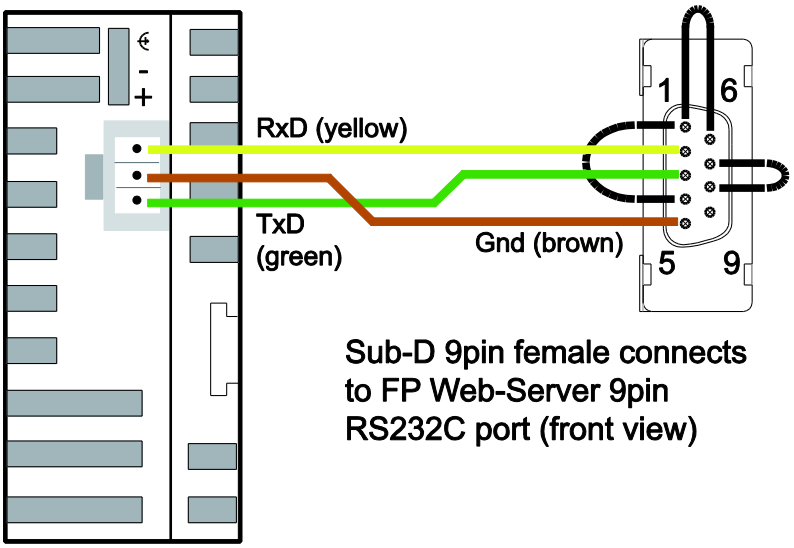
The 3-pin screw terminal is from Phoenix: Phoenix product: MC1,5/3-ST-3,5 Order number: 18 40 37 9

PPP server with modem:

Use a standard computer/ modem cable to connect the FP Web-Server to a modem:



For the FP ISDN 64k or FP Modem 14.4 (both available from PEW Germany) use the following cable:



PPP server without modem:

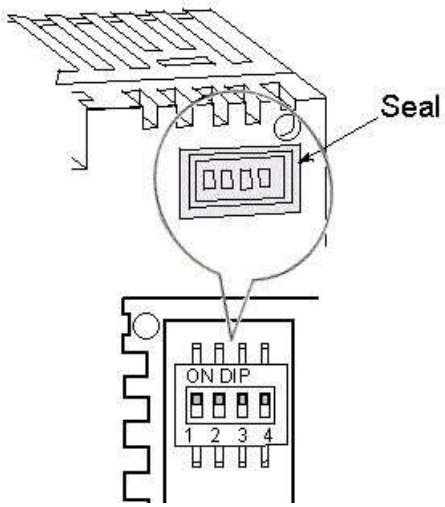
Use a null modem cable to connect the FP Web-Server directly to a computer:

- A minimum, self-made adapter can be built by using two female connectors and 9-pin SUB-D connectors. The wiring should be as follows: 2-3; 3-2; 5-5. (This is the minimum number of wires required.)
- Or use a standard null modem adapter with full 25-pin, female RS232C connectors on both sides to create a connection between the FP Web-Server (with 25/9 adapter) and the computer's COM port.
- The full wiring of a standard 25-pin null modem adapter should be as follows: 1-1; 2-3; 3-2; 4+5-8; 6-20; 7-7; 8-4+5; 20-6.

18.3.3 DIP switches

Upon delivery, the DIP switches of the FP Web-Server are set to ON (factory setting). To distinguish between hardware type 1 and hardware type 2, please refer to hardware version (see p. 21).

Type 1: FP-WEB



Remove the seal to change the DIP switch settings.

DIP1: MEWTOCOL port

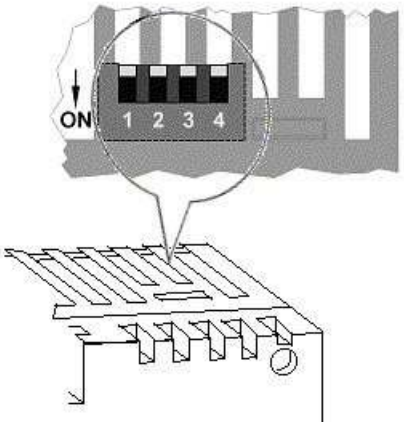
DIP2: HTML write to PLC

DIP3: Second transparent port

DIP4: ON

Type 2: FP-WEB2

☞ Switch the power OFF before changing the DIP switches.



The DIP switches are located inside the housing underneath the top ventilation slots.

Use a screw driver to change the DIP switch settings without removing the housing.

☞ ◆**NOTE**

- **The DIP switches can only switch OFF a function that has been enabled (i.e. activated) in the Configurator before. If a function has not been enabled in the Configurator, the DIP switch has no function!**
- **The DIP switch settings are read by the FP Web-Server every second, i.e. the FP Web-Server recognizes DIP switch changes automatically and does not need to be restarted.**

18.3.4 LEDs

	Name	FP WEB	FP WEB2
			
①	**Power**	**OFF**: unit is not connected to power supply **ON**: unit is connected to the 24V DC (and internal DC converters are OK)	
②	**Ethernet link/activity**	**OFF**: no network connection (no Ethernet cable) **ON**: unit is connected to the Ethernet network (without data traffic) **Blinking**: data traffic detected on the network (LED 50ms off for each reception)	
③	**Ethernet link**		**OFF**: no network connection (no Ethernet cable) **ON**: unit is connected to the Ethernet network
④	**Ethernet activity**		**OFF**: no data traffic on the network **Blinking**: data traffic detected on the network (LED is ON during data reception)
⑤	**PLC COM.**	**OFF**: the FP Web-Server unit is not communicating with the PLC **ON**: during communication with the PLC (MEWTOCOL via serial interface)	

18.3.5 Clearing passwords

To reset the unit i.e. clear the password and the configuration of a FP Web-Server, carry out the following steps:

◆PROCEDURE

1. Press [FIND] and select the appropriate FP Web-Server by double-clicking

   To select another unit, refer to the online help under Select from List of Units Found.

2. Press [INITIALIZE] to send the firmware and base configuration to the unit
3. Press [SEND] (and optionally activate the "Web files" check box) to transfer the new configuration to the unit

4. If requested, enter user name and password

   If you have forgotten the password, clear the password with DIP switch 4. For further questions, please contact your local Panasonic provider (see p. 205).

18.4 IP and TCP/IP

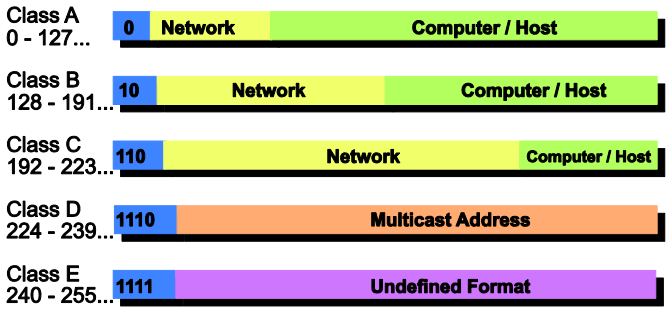
Every Ethernet participant must have an individual IP address. This address may not be used a second time in the same network. The IP address consists of 4 numbers (any 0 to 255). The first numbers define the network address, the other numbers define the participant's address.

The Internet Address:

To be independent from the medium as well as the platform, one should not adjust the addressing of a single bus system when specifying the communication system. The concept of the Internet is based on one's own address, i.e. the Internet address. The Internet address is comprised of 32-bits and is divided into a network part and a participant's part. While the Ethernet address is displayed hexadecimally, for the most part, the decimal notation is normally used for the Internet address. Every byte is represented by its decimal value. Valid address specifications are numbers between 0 and 255.

Example:	0011 1001 /	0011 1101 /	111 0010 /	0001 1001
would be displayed as:	57.	61.	242.	25

Therefore, special address conventions have been agreed upon:



The following recipient's addresses are fixed:

- 255.255.255.255. broadcast "to all"
- Network address = 0 "the own network"

Computer:

For information of the TCP/ IP installation on a Windows computer refer to the online help under TCP/ IP Setup for Configurator/Browser Operations via LAN.

FP Web-Server:

The IP address of the FP Web-Server can be fixed or it can be allocated dynamically by a DHCP-Server. For more information refer to the online help under DHCP or Fixed IP Address.

The following two decisions can be made to set up the IP configuration of the FP Web-Server:

A) In a "self set-up" network (see p. 192) (e.g. with only one hub) the fixed IP addresses can be assigned by yourself.

In many cases a class C network is used. The network is identified by 3 numbers. The participants (Computers, Units, FP Web-Server...) are distinguished by the last number (1 to 254), e.g. 192.168.206.1 to 192.168.206.254.

In case this network is connected to a second network via a gateway (e.g. the computer for configuration might be in this network), the gateway address also needs to be specified, e.g.:

Computer in x.y.206.z Network with Netmask 255.255.255.0, using the x.y.206.1 Gateway.

FP Web-Server in x.y.60.z

The network should have the following settings:

- IP Add=x.y.60.31
- Netmask=255.255.255.0
- Gateway=x.y.60.1

B) In case the FP Web-Server should be connected to an existing network, the following data must be asked from the network administrator:

- Is there a DHCP-Server in the network? If NOT:
- IP address: Which fixed IP address can be assigned to the FP Web-Server?
- Netmask: How is the network address set up (length of the network address and/ or the participant's address)?
- Gateway: What is the gateway's IP address? (0.0.0.0 if there is no gateway to be used).

REFERENCE

For more detailed information refer to the online help under the keyword "TCP/ IP Setup for Configurator/Browser Operations via LAN".

18.5 Setup of an individual Ethernet LAN

If no connection to an existing Ethernet network is used, you will find a couple of helpful remarks in the following paragraph.

Private email server:

For using the email functions in such a "mini-network", an Email-Server has to be installed on the (or on one of the) computer. For example, on the Panasonic Ethernet exhibition board the Email-Server "1st Class Mail Server 2.0" by "1cis.com" was used successfully. For further information, refer to Details on the Email-Server (see p. 61).

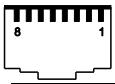
Following two different Ethernet cables are used:

1. Direct 1:1 connection:

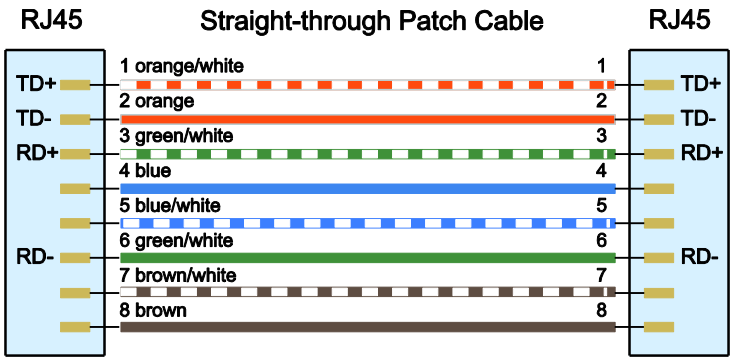
   In the following example, only one computer should be used for carrying out the configuration of one or several FP Web-Servers:

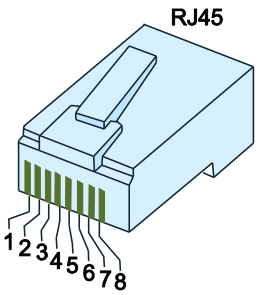
If only one computer (with Ethernet card) should be connected with one FP Web-Server peer-to-peer, a crossover-cable can be used between the computer and the FP Web-Server. Please use the following pin allocation for setting up a cable for connecting two Ethernet network interfaces (hubs, cascading, FP Web-Server to computer, etc.):

- Ethernet (10-Base-T / 100-Base-Tx) use Standard Ethernet CAT.5 Crossover Cable:

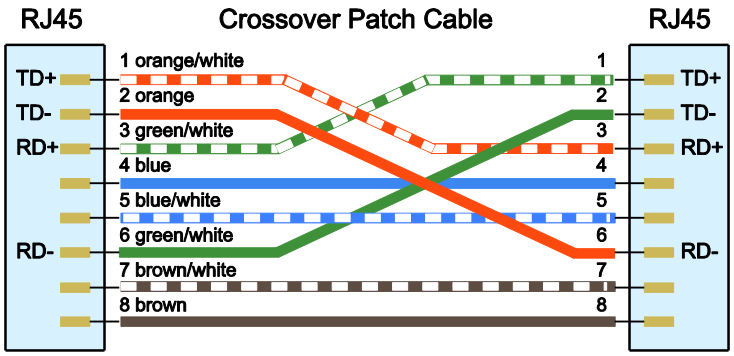


Ethernet 10-Base-T / 100-Base-Tx Crossover Cable	
RJ45 #1 Pin	**RJ45 #2 Pin**
1TX_D1+	3RX_D2+
2TX_D1-	6RX_D2-
3RX_D2+	1TX_D1+
6RX_D2-	2TX_D1-





8-pin RJ45 Connector (8P8C)



2. Standard network connection:

   If more than one FP Web-Server should be connected with one (or several) computer, a hub or switch has to be used as a star coupler. A standard Ethernet 10BaseT hub can be used as a star coupler. When using a hub, you can use standard Ethernet twisted pair cables along with it.

Hub or switch?:

If the IP address (and/or the data rate 10/ 100 MBPS) are not modified very often, a switch might increase the performance of the network in comparison to a hub:

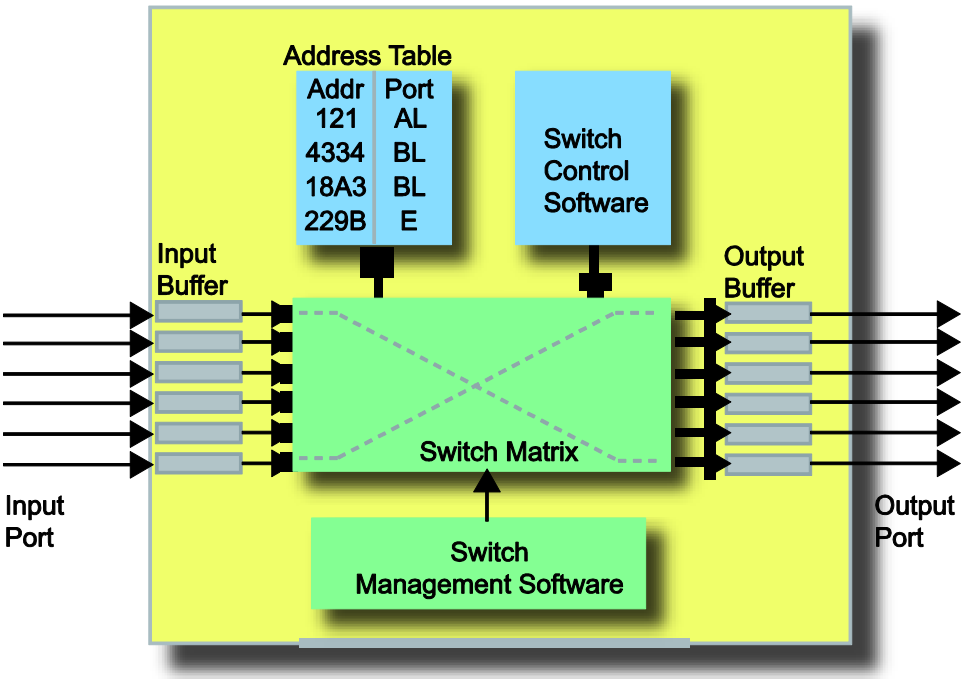
A switch is an intelligent unit with which you can subdivide the Ethernet in sub-segments that are widely independent from each other. You can imagine it as a kind of switch matrix. If a piece of information should be transferred to another segment, the switch automatically establishes the respective connection. The other segments are not concerned by this data transfer and can be run in parallel operation mode. With the help of switches you can cut the likelihood of collisions drastically or even eliminate them totally (e.g. in the extreme case of a "totally switched" network).

Unfortunately, the case that several stations want to send a message to the same recipient cannot be defused by a switch. It has to be mentioned though that this special case cannot be controlled with the conventional, deterministic bus system either.

A switch receives a data package on one side. Based on the destination address, the unit decides via which output bus the message should be forwarded. You have to differentiate between switches that receive whole messages at once, analyze them and forward them afterwards ("Store and forward"), and other switches that are toggle controlled by the hardware as soon as the recipient's address is defined ("Cut through"). Of course, the latter ones are somewhat faster.

The price for this ideal way to avoid collisions has two aspects to consider:

First, switches are not cheap. There is a lot of processing effort behind them. Second, the effective wiring of the bus system is abandoned again and one returns to the traditional peer-to-peer connection. Consequently, the wiring effort is increased significantly.



For generalities on TCP/ IP also refer to IP and TCP/ IP (see p. 190).

18.6 Preinstalled passwords and safety instructions

User name and password can be preset in the Configurator project.

Overview of the preset passwords:

Service	User Name:		Password:	
	Factory	Default	Factory	Default
Telnet	tel	user	tel	user
FTP	ftp	user	ftp	user
PPP	ppps	user	ppps	user
HTML Pages and PLC Data	web	user	web	user

The use of capital letter or small letters in the user name and passwords are not analyzed, i.e. the user name and password check are not case sensitive. User name and password should have 1 to 9 characters. Only ASCII characters are allowed. Do not use umlauts or Japanese characters.

Exception:

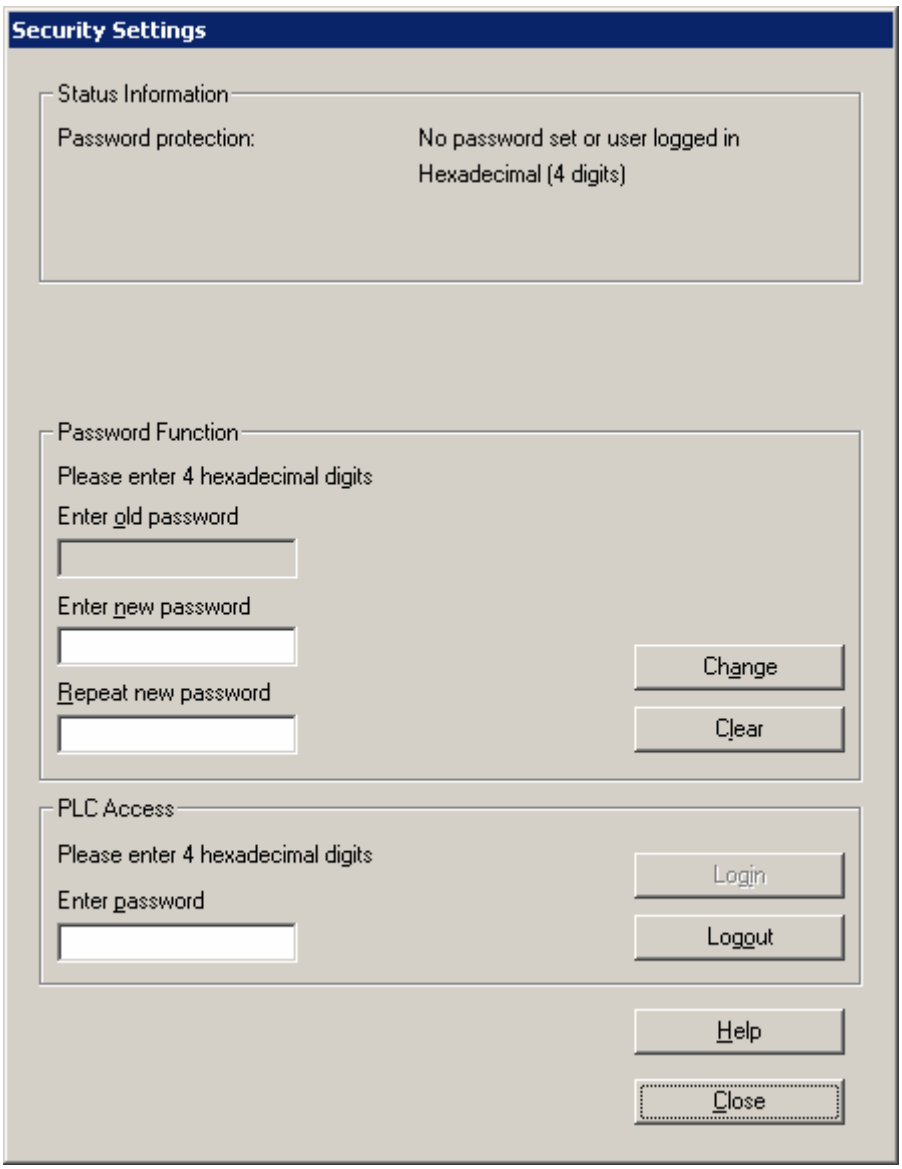
For a remote dial-up connection (PPP connection) only lower case letters are to be entered for the password on the client's side. For further information, also see control buttons/user name and password.

To clear all passwords (and the complete configuration), see clearing passwords (see p. 188).

◆**NOTE**

1. **Always change the password. Leaving the default password can cause security problems. For the definition of the user name and the password, see also password protection in the online help under the keyword "User Name and Password".**

2. **The password of the PLC can be adjusted with the help of FPWIN Pro via** Online → Security Settings



18.7 Troubleshooting

◆NOTE

Some functions of the unit can be disabled with the function upload configuration with security options. This can cause some error messages if you try to change the configuration afterwards. Please check the security options (or reset (see p. 188) the unit) if you discover problems in following situations:

- Unit is not listed with [Find] function
- Unit cannot be selected for configuration
- Unit does not accept new IP via UDP configuration
- No files can be transferred to the unit
- Unit cannot be restarted

18.7.1 Network communication problems

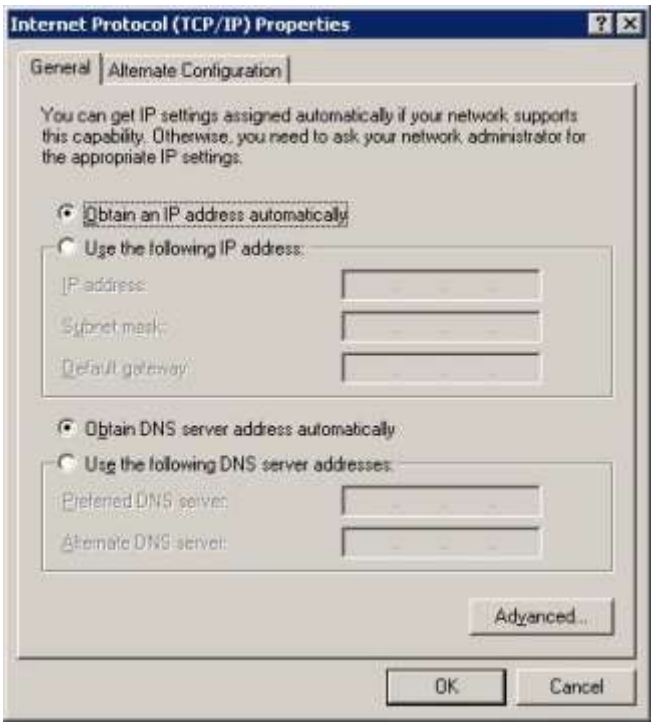
If you have problems with the FP Web ConfiguratorTool finding ([Find]) and selecting (double-click) an FP Web-Server unit, please check the network settings.

If an automatically generated IP address setting is to be used

Make sure that the computer and the FP Web-Server's configuration is set up to use a DHCP server.

◆ PROCEDURE

1. Under "Settings / Network Connections", open the properties dialog of the computer's Ethernet/LAN card
2. Open the „Internet Protocol (TCP/IP)" properties dialog
3. Verify that the option button „Obtain IP address automatically" is set



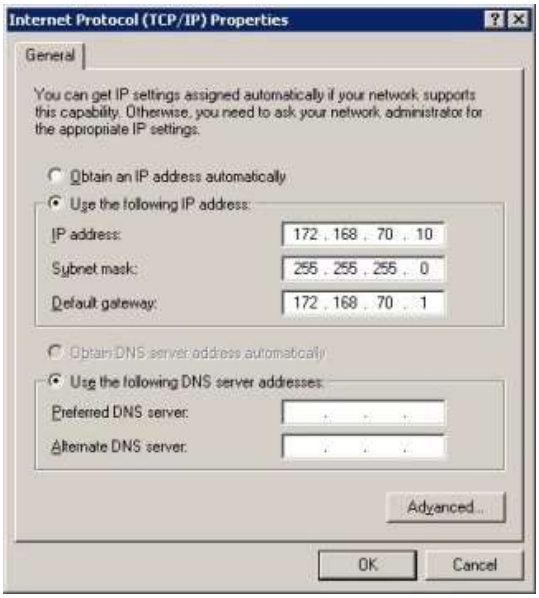
4. Verify the FP Web-Server configuration in the FP Web-Configurator Tool under „Config"

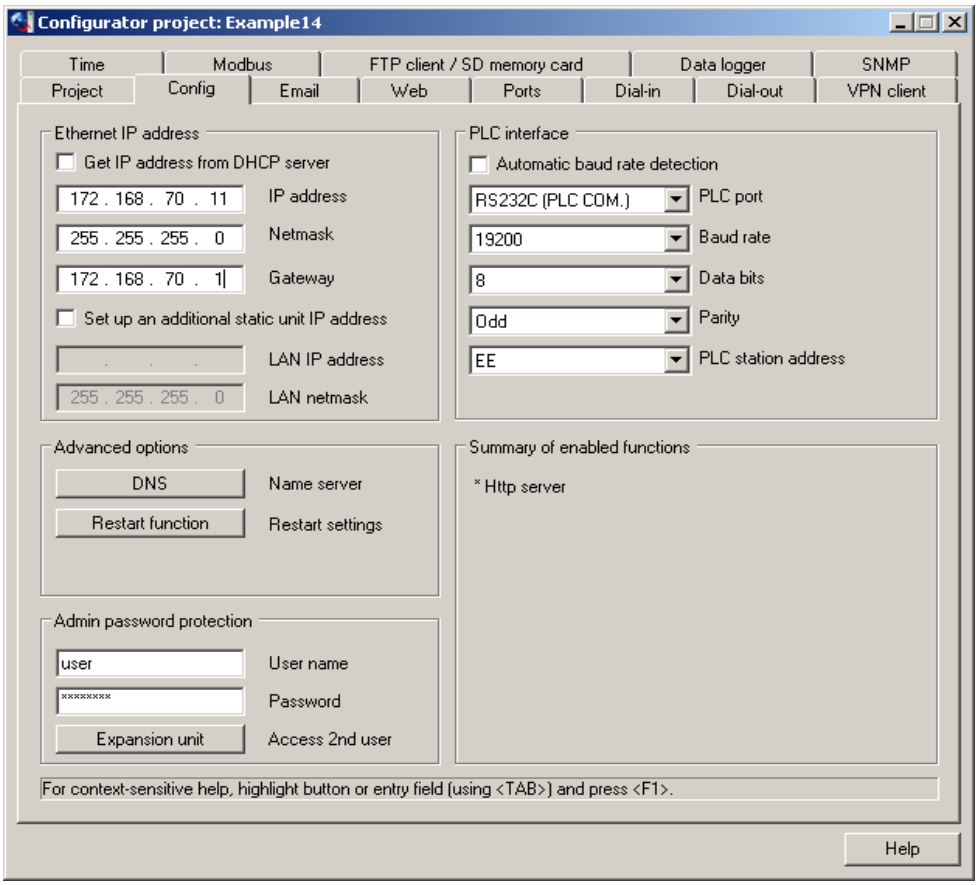
If a static IP address setup should be used (private network or cross-over cable)
Check the IP address settings of your computer and the FP Web-Server configuration.

◆PROCEDURE

1. Under "Settings / Network Connections", open the properties dialog of the computer's Ethernet/LAN card
2. Open the —Internet Protocol (TCP/IP)” properties dialog

   The —Subnet mask” setting should be the same as with your FP Web-Server configuration. Also the left part of the —IP address” (identified by the 255 value in the subnet mask) should be identical to the FP Web-Server configuration. However the right part of the computer's and FP Web-Server's —IP address” should be different.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 172 . 168 . 70 . 10
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 172 . 168 . 70 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel


Configurator project: Example14
Time
Modbus
FTP client / SD memory card
Data logger
SNMP
Project
Config
Email
Web
Ports
Dial-in
Dial-out
VPN client
Ethernet IP address
Get IP address from DHCP server
172 . 168 . 70 . 11
IP address
255 . 255 . 255 . 0
Netmask
172 . 168 . 70 . 1
Gateway
Set up an additional static unit IP address
LAN IP address
255 . 255 . 255 . 0
LAN netmask
PLC interface
Automatic baud rate detection
RS232C (PLC COM.)
PLC port
19200
Baud rate
8
Data bits
Odd
Parity
EE
PLC station address
Advanced options
DNS
Name server
Restart function
Restart settings
Summary of enabled functions
* Http server
Admin password protection
user
User name
****
Password
Expansion unit
Access 2nd user
For context-sensitive help, highlight button or entry field (using <TAB>) and press <F1>.
Help

18.7.2 Problems finding an FP Web-Server unit or unable to send configuration

If with FP Web Configurator Tool, you cannot:

- find ([Find]) or select (double-click) an FP Web-Server unit
- send the configuration ([Send])
- send an HTML file ([Send File])

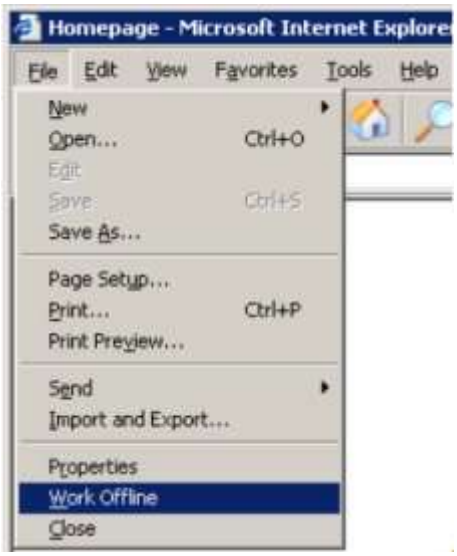
try the following:

a. Disable the Windows firewall on your LAN connection

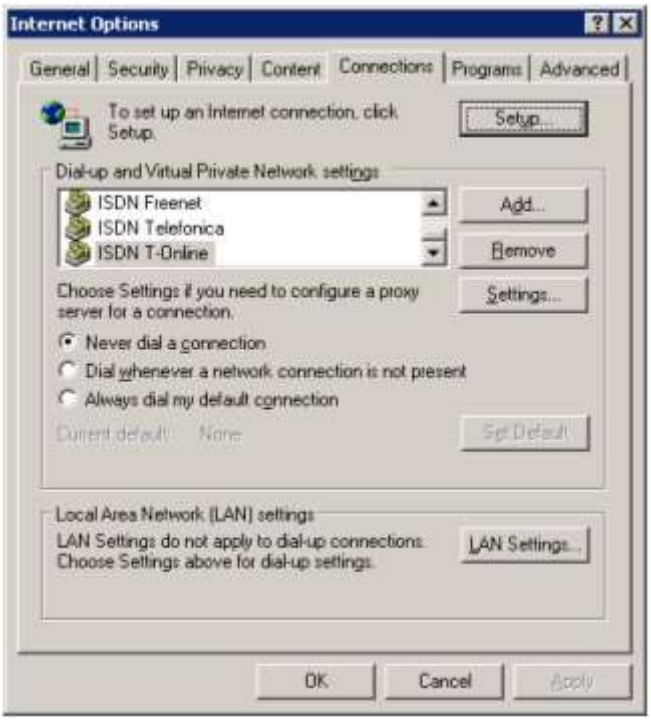
   For this go to "Settings / Network connections" and open the properties of the Ethernet/LAN card. Under "Advanced" disable the firewall function.

b. If [Send] or [Send File] does not work

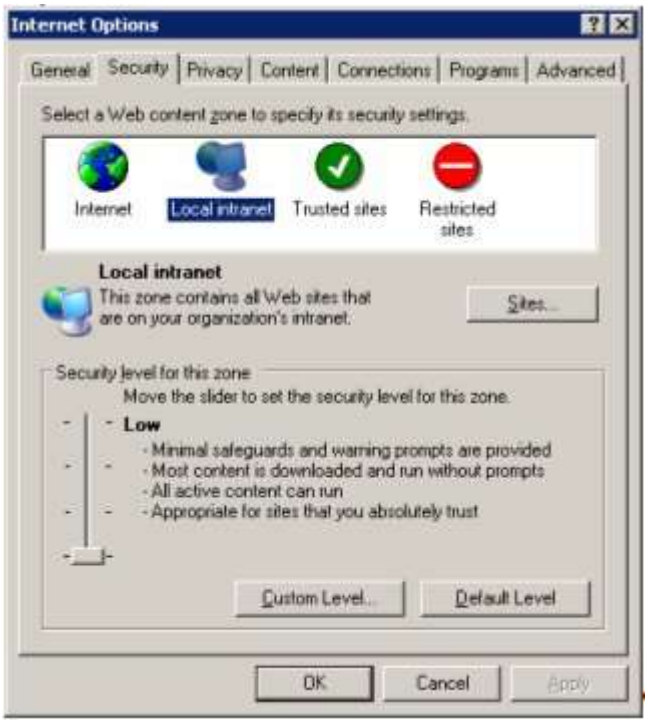
You receive an error message: "The computer is disconnected from the network". Start the Internet Explorer, open "File" menu and remove the checkmark at "Work Offline".



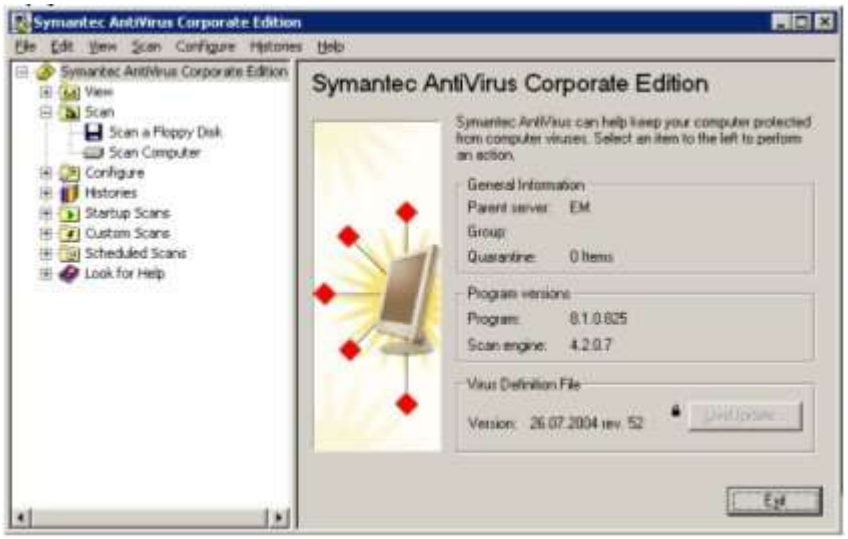
c. Start the Internet Explorer, open menu "Tools / Internet Options / Connections" and select "never dial a connection". Verify that there are valid settings in the sub-dialog "LAN Settings".



d. Reset all Windows and Internet-Explorer security settings for a test.



e. Disable all additional firewall and security software packages. Especially disable virus scanner and spy software blocker for a test.



f. Use the latest FP Web Configurator Tool version.

g. Edit the file "tool.ini" at "C:\Program Files\ Panasonic-EW SUNX Control\FP Web Configurator2" with Notepad. Change [FTP] PASSIV=1 from 0 to 1. And then test function again.

h. Uninstall all recently installed Windows security updates and patches for a test.

18.7.3 Panasonic hotline

Should you have any problems, we would like to assist you as fast and effectively as possible.

If you have questions on the FP Web-Server that cannot be clarified with the documentation accompanying the product, please call your sales office:

Europe

Austria:	02236 / 2 68 46	info.pewat@eu.panasonic.com
Benelux:	0499 / 37 27 27	info.pewswe@eu.panasonic.com
France:	01 / 60 13 57 57	info.pewswef@eu.panasonic.com support.pewswe@eu.panasonic.com
Germany:	08024 / 648-748	info.peweu@eu.panasonic.com
Ireland:	01 / 4 60 09 69	info.pewuk@eu.panasonic.com
Italy:	045 / 67 52 711	info.pewit@eu.panasonic.com
Scandinavia:	46 / 8 59 47 66 80	info.pewns@eu.panasonic.com
Spain:	91 / 3 29 38 75	info.pewes@eu.panasonic.com
Switzerland:	041 / 799 70 50	info.pewch@eu.panasonic.com
United Kingdom:	01908 / 23 15 55	info.pewuk@eu.panasonic.com

North & South America

USA:	1 908 / 464 3550	Automation@us.pewg.panasonic.com

Asia

China:	800-820-3096 (Toll-free Number)	http://pewc.panasonic.cn/ac/c/salesnetwork/ http://pewc.panasonic.cn/ac/c/salesnetwork/
Korea:	82-2-2052-1050,1052	http://pewkr.panasonic.co.kr/ http://pewkr.panasonic.co.kr/
Taiwan:	886-2-2581-6020	http://panasonic-denko.co.jp/ac/e/salesnetwork/globalnetwork/ http://panasonic-denko.co.jp/ac/e/salesnetwork/globalnetwork/
Hong Kong:	852 / 2956 3118	http://panasonic-denko.co.jp/ac/e/salesnetwork/globalnetwork/ http://panasonic-denko.co.jp/ac/e/salesnetwork/globalnetwork/
Japan:	0120-394-205 (Toll-free Number)	http://panasonic-denko.co.jp/ac/j/ http://panasonic-denko.co.jp/ac/j/
Singapore:	+65 / 635 92128	pewapfa@sg.pewg.panasonic.com

In case you find any errors in this documentation or cannot find important information, please do not hesitate to contact our department of technical documentation at techdoc.peweu@eu.panasonic.com

Please also see the Configurator setup CD (start the setup) for further information on addresses of Panasonic distributors or visit Panasonic's website.

You can help us by having the following data at hand:

- Your product's **serial number** and **version number**. Both numbers are printed on the original disks. The version number is also indicated in the **System Menu** => **About Configurator** menu item.

- The **version numbers of MS-Windows and MS-DOS** which are installed on your computer.
- The type of **hardware** you are using.
- The exact **wording of any message that appears on your screen**.
- **What happened** and **what did you do** when the problem occurred?
- How did you attempt to solve the problem?

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Record of changes

Manual No.	Date	Description of Changes
ACGM0151END	August 2001 March 2002	First European Edition Update of First European Edition: Optimized Graphics Corrected Errors
ACGM0151V1.1END	Sept. 2002	Complete update in accordance with hardware version 1.2
ACGM0151V1.2END	Oct. 2002	Changed pictures of configuration examples on pages 9-14 to 9-16
ACGM0151V1.3EN	July 2003	Complete update in accordance with software version 1.3. For details on the new information, see the section new in this version.
ACGM0151V2.0END	Oct. 2004	Complete update in accordance with software version 2.0. For details on the new information, see the section new in this version 2.0 in the online help.
ACGM0151V2.1END	Aug. 2005	Complete update in accordance with software version 2.1. For details on the new information, see the section new in this version 2.1 in the online help.
ACGM0151V2.2END	Dec. 2006	Complete update in accordance with software version 2.11. For details on the new information, see the section new in this version in the online help.
ACGM0151V3EN	May 2010	Complete update in accordance with software version 2.2. For details on the new information, see the section new in this version in the online help.
ACGM0151V3.1EN	Dec. 2010	Complete update in accordance with software version 2.21. For details and version history, please refer to the online help topic "New in this version".
ACGM0151V4EN	October 2011	Complete update in accordance with software version 2.23. For details and version history, please refer to the online help topic "New in this version".
ACGM0151V4.1EN	December 2011	Complete update in accordance with software version 2.231. For details and version history, please refer to the online help topic "New in this version".
ACGM0151V4.2EN	May 2012	Complete update in accordance with software version 2.4. For details and version history, please refer to the online help topic "New in this version".
ACGM0151V5EN	Jan. 2013	Complete update in accordance with software version 2.5. For details and version history, please refer to the online help topic "New in this version".

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▶ **Hong Kong**	**Panasonic Electric Works (Hong Kong) Co., Ltd.**	RM1205-9, 12/F, Tower 2, The Gateway, 25 Canton Road, Tsimshatsui, Kowloon, Hong Kong, Tel. (8520) 2956-3118, Fax (0852) 2956-0398
▶ **Japan**	**Panasonic Corporation**	1048 Kadoma, Kadoma-shi, Osaka 571-8686, Japan, Tel. (06)-6908-1050, Fax (06)-6908-5781 http://panasonic.net
▶ **Singapore**	**Panasonic Electric Works Asia Pacific Pte. Ltd.**	101 Thomson Road, #25-03/05, United Square, Singapore 307591, Tel. (06255)-5473, Fax (06253)-5689

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