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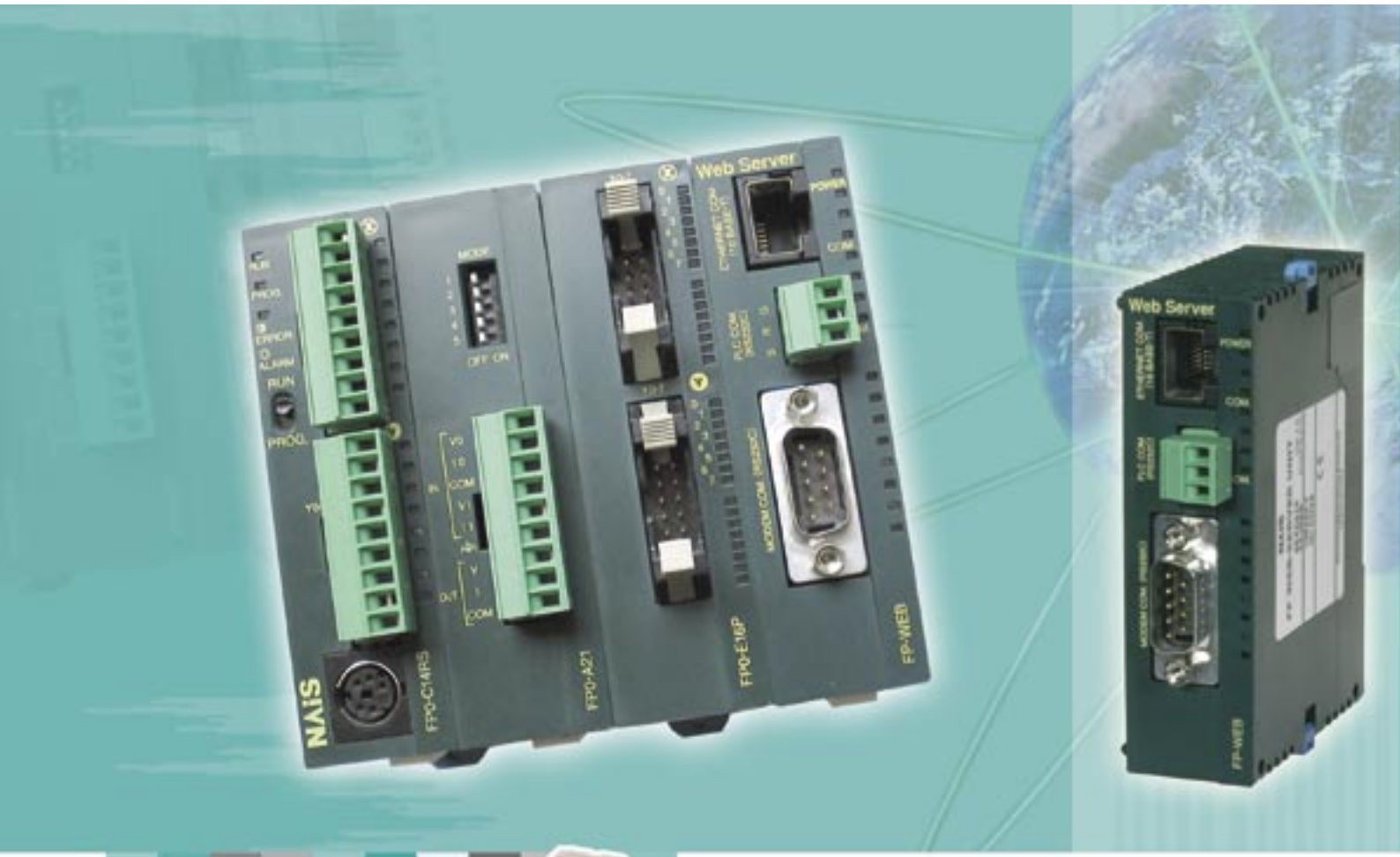
ideas for life



Progammable Logic Controllers

Ethernet and web products for automation

Panasonic ... the new name for NAiS

10/2004

Ethernet / Web products

Overview

Ethernet technology opens up new application opportunities in remote control engineering, linking the office to the factory. Wherever a network exists, operational and production data can be shared, benefitting engineer and plant manager alike. The engineer can communicate with a machine, regardless of where he happens to be. The plant manager is kept up-to-date on productivity, as well as up and down times of the system.

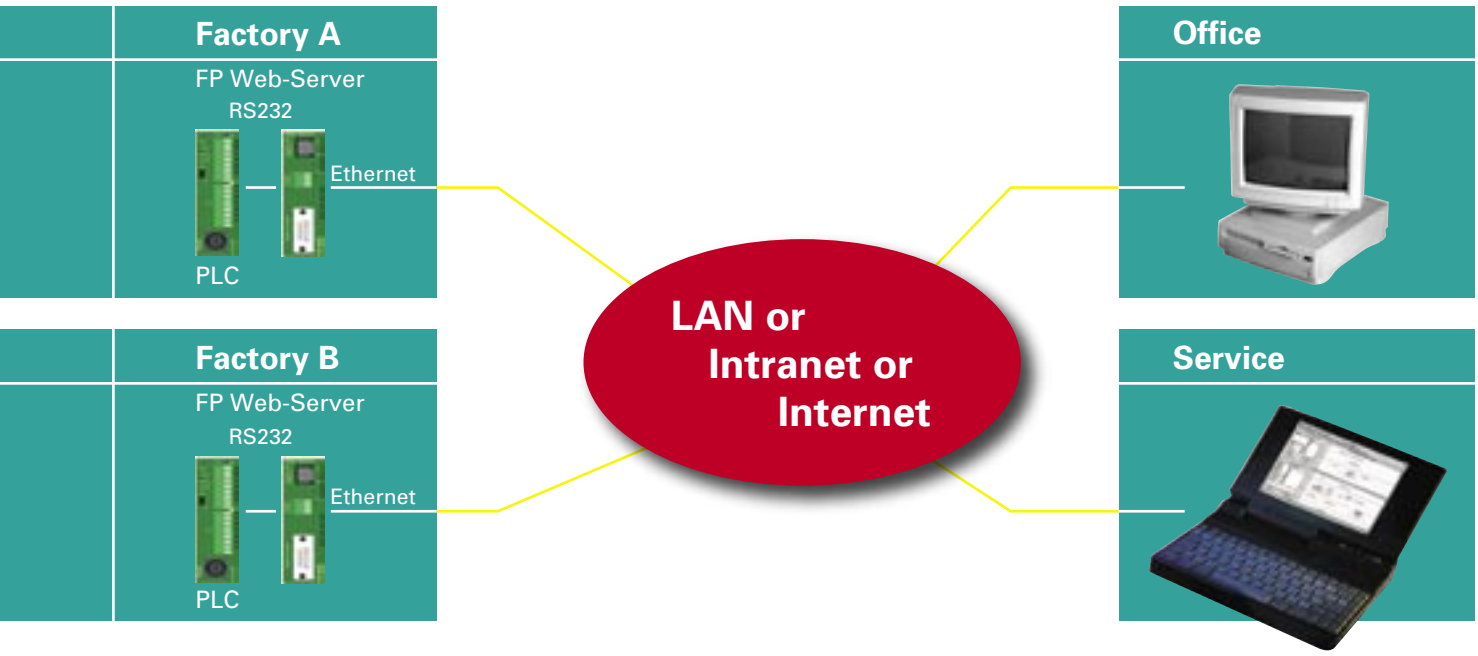
➠ Page 4 **FP Web-Server**

Ethernet with standard TCP/IP protocol is now universally available. The new Matsushita FP Web-Server brings together all FP-series controllers with the Ethernet and opens up all the possibilities this new technology entails.

➠ Page 9 **FP2 ET1 only for FP2 Series**

In addition, for FP2/FP2SH-series controllers, Matsushita provides a high-end ET LAN module for particularly fast communication via Ethernet.

Worldwide Communication for Matsushita PLCs



FP Web-Server

Advantages and Highlights

Worldwide communication

With the Internet becoming ever more popular and information being exchanged daily via email, customers are increasingly requesting central monitoring of on-site PLCs via the Web.
With the FP Web-Server, you can connect any Matsushita PLC (including the world's smallest PLC, the FP0) to the World Wide Web or Intranet via Ethernet or modem. The FP Web-Server features Ethernet 10 Base-T connectivity, PPP mode (Point-to-Point Protocol), email, HTML web pages and FTP. It works as an interface between an Ethernet LAN or WAN network and the FP-series PLC. No changes to the PLC programs are necessary: simply assign an IP address and connect the PLC to the FP Web-Server via the serial RS232C interface. A standard browser, e.g. Microsoft Internet Explorer, can be used for access at the PC. You can easily configure your FP Web-Server with the FP Web Configurator Tool, which is available separately.

FP Web-Server advantages:

- uses existing Intranet, saves wiring
- uses standard browser, saves Scada software
- remote control
- remote monitoring
- remote programming
- alarm information via email

FP Web-Server main features

Web-Server

- PLC data presented as HTML pages
- deliver XML files **new!**
- Access via standard Internet browser
- HTML entry field for PLC data change
- Optional password protection

Email

- PLC can send email: 4 sets of texts and email addresses. PLC can prepare email addresses and various texts, which can include PLC data.
- Email via LAN email server or Internet dialup via modem
- PLC defined or pre-stored mail text
- Email with PLC data attachments

Email application examples:

- ➨ Alarm conditions can be emailed to a PC, PDA or GPRS/UMTS mobile phone.
- ➨ An operator can trigger a bit to send an email for help to the appropriate maintenance person.
- ➨ In case supplies become low, an email can automatically place an order to replenish them.

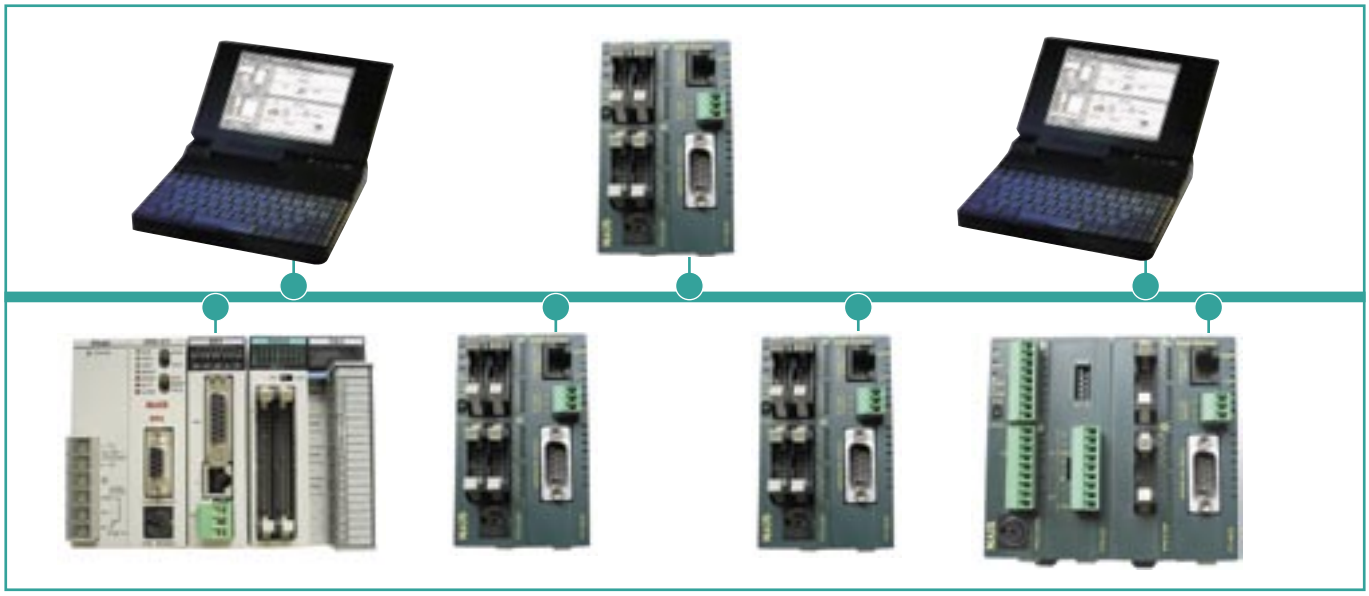
RS232C Port Server

- Ethernet ⟷ RS232C conversion (MEWTOCOL)
- Transparent RS232C data tunnelling via Ethernet
- With Ethernet, PLC programming can be performed with FPWIN GR or FPWIN Pro.
- Ethernet Data Acquisition: PCWAY, the add-in software for Microsoft Excel, or CommX (ActiveX control) can exchange PLC data via Internet or Ethernet. The MEWTOCOL OPC Server provides a standard interface between FP-Series PLCs and various SCADA/HMI Software also via Ethernet.
- Transparent port communication via UDP. For Multipoint PLC-PLC communication.

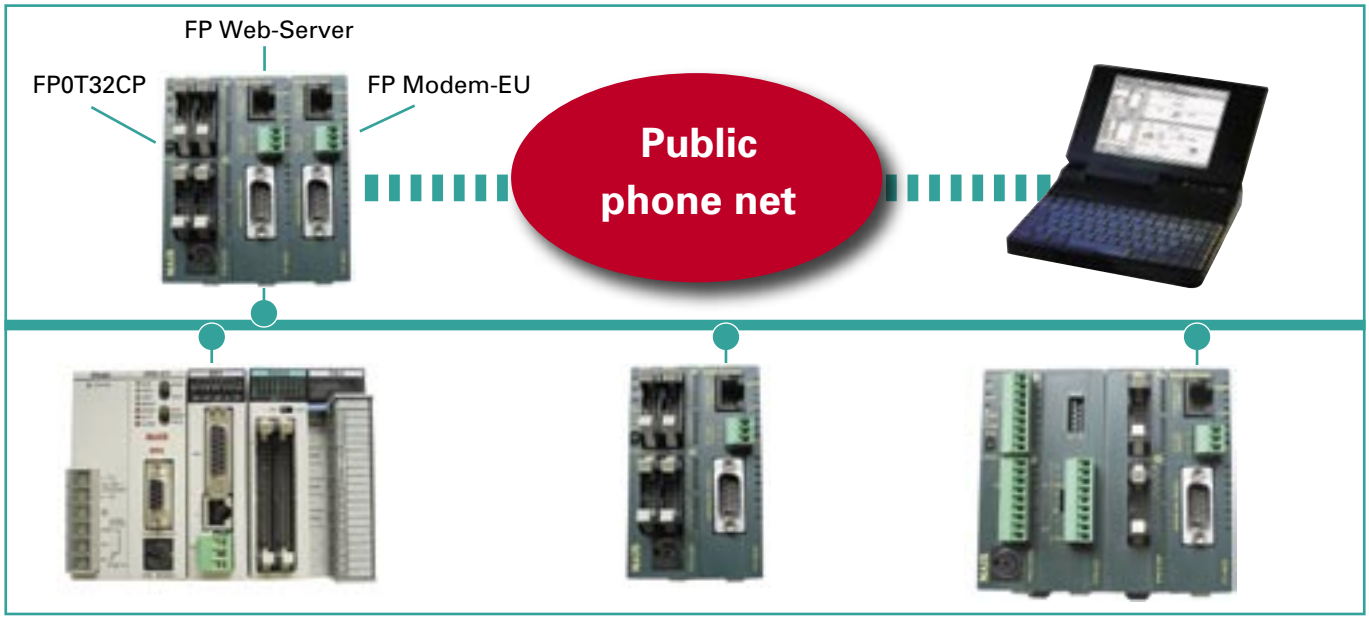
Ethernet / Web products

Matsushita's Ethernet Concept

Ethernet LAN or Intranet.
PCs can easily access multiple PLCs



Using an FP Modem-EU connected to the FP Web-Server's modem interface, you can remotely access all PLCs in the LAN.



FP Web-Server

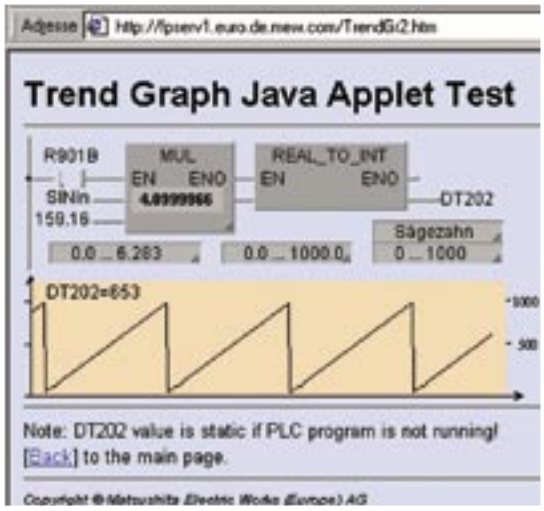
Highlights and Features

Modem / Ethernet gateway

- The FP Web-Server can be dialled up via modem for local or network access. In PPP (Point-to-Point Protocol) mode, a PC can dial via modem to access a web page, PLC program or an internal network of PLCs.
- One remote gateway for multiple FP Web-Servers in a local Ethernet network
- Remote password handling

Modem Internet Dialup

- Internet Dialup with modem, GSM, ISDN or GPRS for sending emails



Continuous mobile Internet connection via GPRS (General Packet Radio System)

The FP Web-Server can handle continuous Internet online connects:

- A GPRS unit can be used to dial up the Internet and stay online for HTTP access.
- An email is generated to inform the central station about the actual Internet IP address.

Java applet functions library **new!**

Java applets for rapidly changing PLC data display in HTML pages

Network time protocol NTP **new!**

A central network time server can be used to synchronize a PLC's real-time clock.

IEC 60870-5-101 and IEC 60870-5-104 telecontrol protocol

Based on the same hardware as the FP Web-Server, safe and easy telecontrol with FP-Series PLCs using the wide-spread IEC 60870-5 telecontrol standard is possible. Thus remote process stations can easily be linked to supervisory control systems or telecontrol main systems. The IEC60870 Communicator supports both IEC 60870-5-101 communication via RS232C or modem and IEC 60870-5-104 communication via Ethernet in one module.

IEC 60870-5-101 RTU: FT1.2 / Unbalanced + Balanced

For serial communication with a compatible central station.
Industrial standard interfaces: RS232C, MultiPoint (Modem), RS485 (C-Net adapter)
Plus modem dialup functions: Modem, ISDN Adapter, GSM Module

IEC 60870-5-104 RTU: APDU length 253

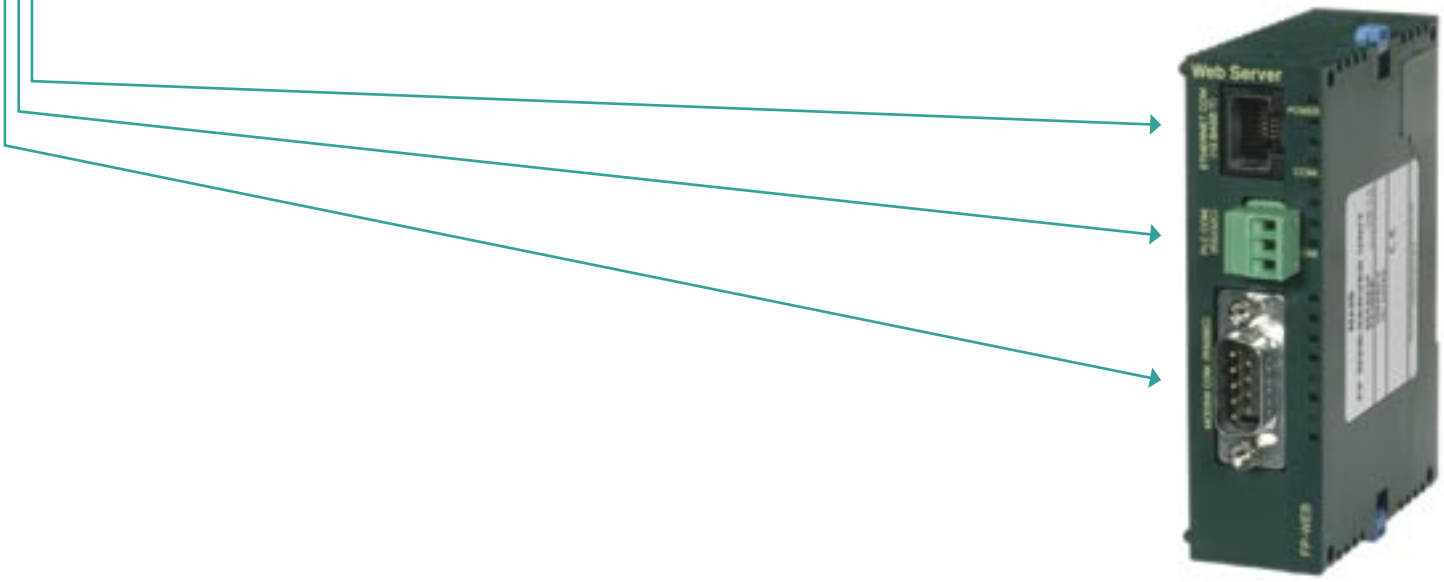
For Ethernet network communication with a compatible central station.
Serial IEC 60870-5-101, backup communication automatically enabled if no TCP connection is established.
Industrial standard interfaces: TCP/IP via Ethernet
Plus modem dialup functions: TCP/IP via PPP remote dialup connection

FP Web-Server

Technical Data FP Web-Server

The FP Web-Server's 3 interfaces

- 10BaseT (RJ45, twisted pair) – connects to the Ethernet at 10 Mbit/s
- RS232 (screw terminal) – connects to the PLC at 1200 to 115.2 kbit/s
- RS232 (SUB-D 9 male) – connects to a modem (PPP)



Protocols	TCP/IP, UDP/IP, SMTP, PPP, NTP, FTP, TELNET, HTTP, MEWTOCOL-COM
Number of browsers	Up to 64 browsers can be connected to one FP Web-Server
Number of emails	4 predefined in FP Web Flash memory
	1 programmable in PLC DT memory as ASCII
Number of email addresses	4 predefined in FP Web flash memory, 1000 addresses in PLC DT memory, assuming an average of 32 characters are used per email address and that an FP0-T32CP is used, which has 16K word memory.
Number of PLC per unit	Two PLCs can be connected
	3-pin port (port number: 9094)
	DB9 port (port number: 9095)
IP address	DHCP or manually set by software
Security	Password and DIP switch
Operating power	24VDC, 75mA (max)
Dimensions	25 x 90 x 60 mm (W x H x D)
LEDs	Power, COM Ethernet connection, COM data exchange
Flash memory	512 KBytes
Standards fulfilled	CE, UL, cUL

FP Web Configurator Tool

Quick Installation

Control FP Web configurator tool

Before use, the FP Web-Server has to be configured with the software FP Web Configurator.

This software will help you quickly set up or change following items, for example:

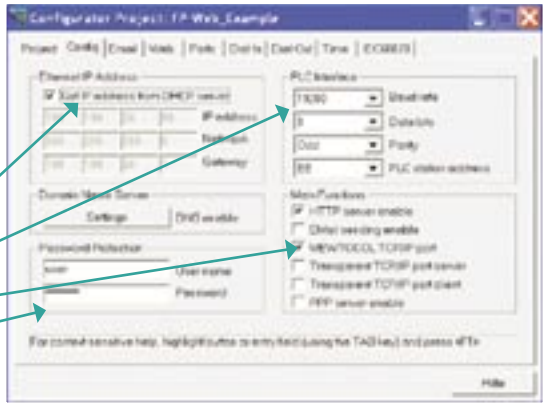
- Automatic integration of PLC data into HTML pages
- Preparation of pre-defined email addresses and texts
- Internet dialup and email server settings
- TCP/IP addresses and parameters
- Passwords and security
- IEC 60870-5 parameters and modem settings
- Modem Gateway parameter configuration
- Two RS232 port parameters and the PC's RS232 port
- Selection of the FP Web-Server functions: Web site, email sending, Modem Gateway (PPP), serial port selection

Initial start screen

Find the available nodes in the network With FIND the network is searched for all FP Web-Servers.
A list of all FP Web-Servers found is displayed.
Select the desired FP Web-Server

Configuration of the Web-Server Unit

- Set the Ethernet address
- Set the RS232 port parameters
- Select the FP Web-Server functions
- Set the password



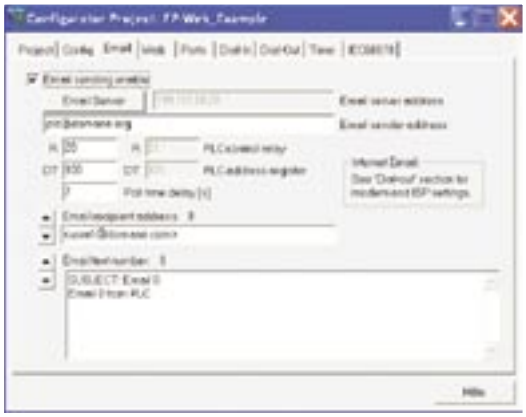
FP Web Configurator Tool

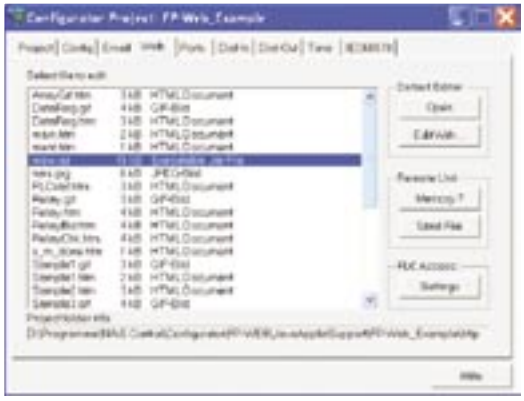
Quick Installation

FP Web-Server

Configuration of the email function

- Email server in the network IP address (from your network administrator)
- FP Web-Server email address (from your network administrator)
- If the internal relay of the PLC is ON, the email will be sent
- Address of the receiver – up to 4 pre-defined addresses can be stored
- Pre-defined email text





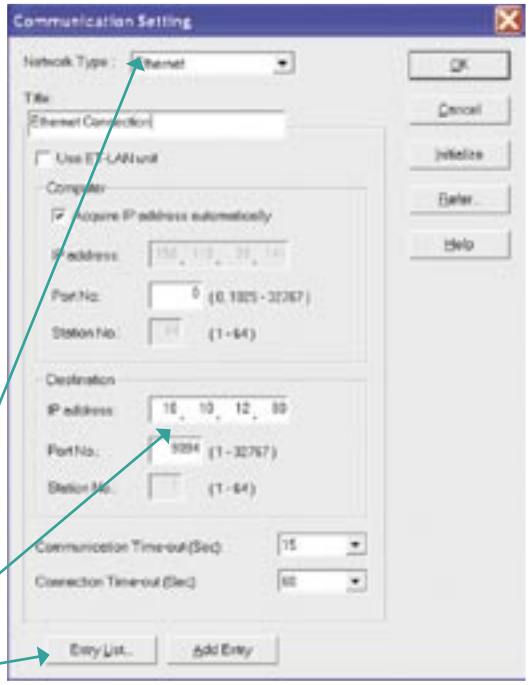
Configuration of HTML pages

- All web pages of the FP Web-Server can be created and/or edited on the computer with standard tools, e.g. Netscape Composer, FrontPage or MS Word.
- The entire website configuration can be downloaded to the FP Web-Server.

FPWIN Pro remote programming / monitoring

FPWIN Pro is the IEC 61131-3-compliant PLC programming software from Matsushita.
From a remote PC which has FPWIN Pro installed on it, you can program a PLC connected to the Ethernet network via the FP Web-Server module.

- Select the network type (Ethernet)
- Enter the IP address of the FP Web-Server
- Once in the entry list, you can select the relevant PLC again at any time



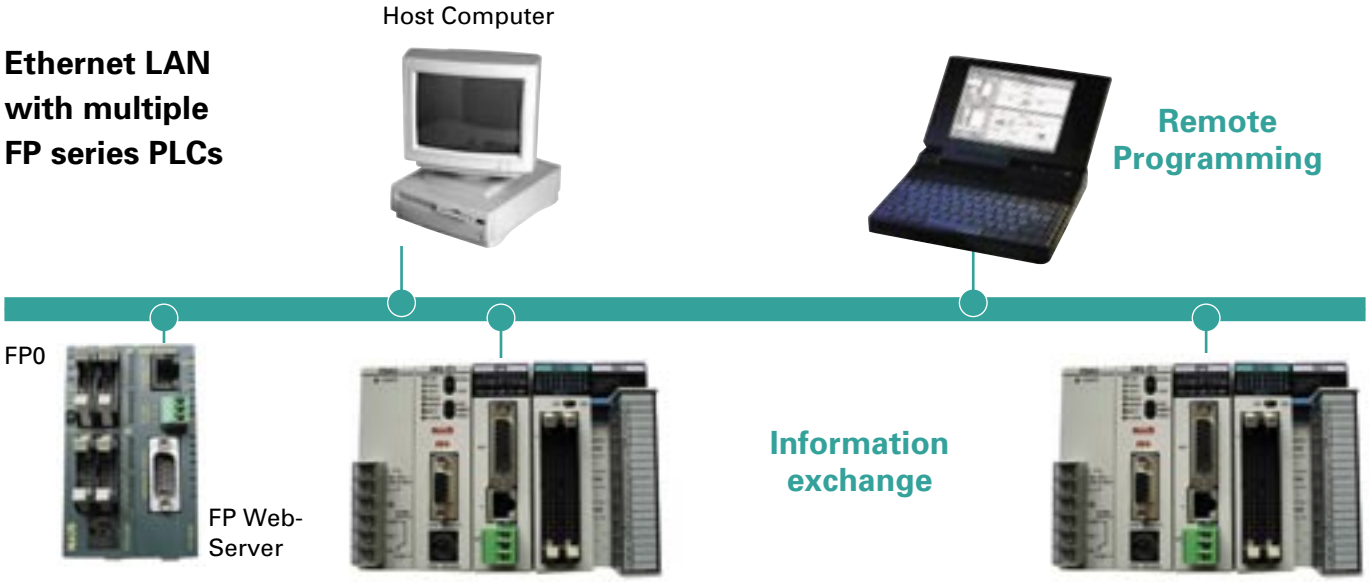
FP2 ET1

FP2/FP2SH Ethernet ET-LAN Module

ET-LAN Unit Features

- The FP2 ET-LAN module enables data exchange between different types of PLCs with a vendor independent protocol and a short processing time.
- TCP/IP establishes logical point-to-point communication between two devices and provides the basics for exchanging information among all areas of production.
- You can connect 8 ethernet connections with each other at a transmission speed of up to 100Mbits/sec.
- Configuring the ET-LAN module is easy because no external programme is needed to initialize/configure parameters for the TCP/IP connection. Settings are entered in the PLC programme and transferred to the modules.
- The ET-LAN module can also be used as a gateway between several physical networks.
- Three communication interface types are supported:
  - 10BASE5 (Ethernet using Yellow cable)
  - 10BASE-T (Ethernet using twisted pair cable)
  - 100BASE-TX (Ethernet using twisted pair cable)
- Send and receive e-mail.

Ethernet LAN with multiple FP series PLCs



Item		Description
Unit's current consumption		670mA or less
Communication interface (only 1 port can be used at a time)		10 BASE5 10 BASE-T 100 BASE-TX
Communication protocol		TCP/UPD/IP
Functions	MEWTOCOL communication	Computer Link: Max. 2k bytes Data transfer: Max. 1,020 words
	Transparent communication	Max. 6k words
	Number of connections	Max. 8 connections
	Remote programming	Max. 3 connections
Installation limitation		FP2: Max. 3 units / FP2SH: Max. 5 units

Ethernet-LAN unit
FP2-ET1

Ethernet / Web Products

Applications

SÜWAG, Germany

This energy supplier uses FP Web-Server units to control circuit breakers. Both email and HTML functionality are used.

Sewage Plant Freising, Germany

uses FP Web-Server units to control a large number of process points via Ethernet LAN.

Austria

implemented a system based on the FP Web-Server to control the public street illumination in Saalfelden, Austria. Status can be easily monitored and alarms are transferred by email.

Müller Milch, Germany

This big dairy company supervises its bottling plant for several kinds of dairy products using FP Web-Server units. Alarms and other important reports are transmitted to the process control computer.

Free Trial: Test the FP Web-Server in the Internet at http://62.180.233.51/

Ethernet / Web Products

Applications

LIDL, Portugal

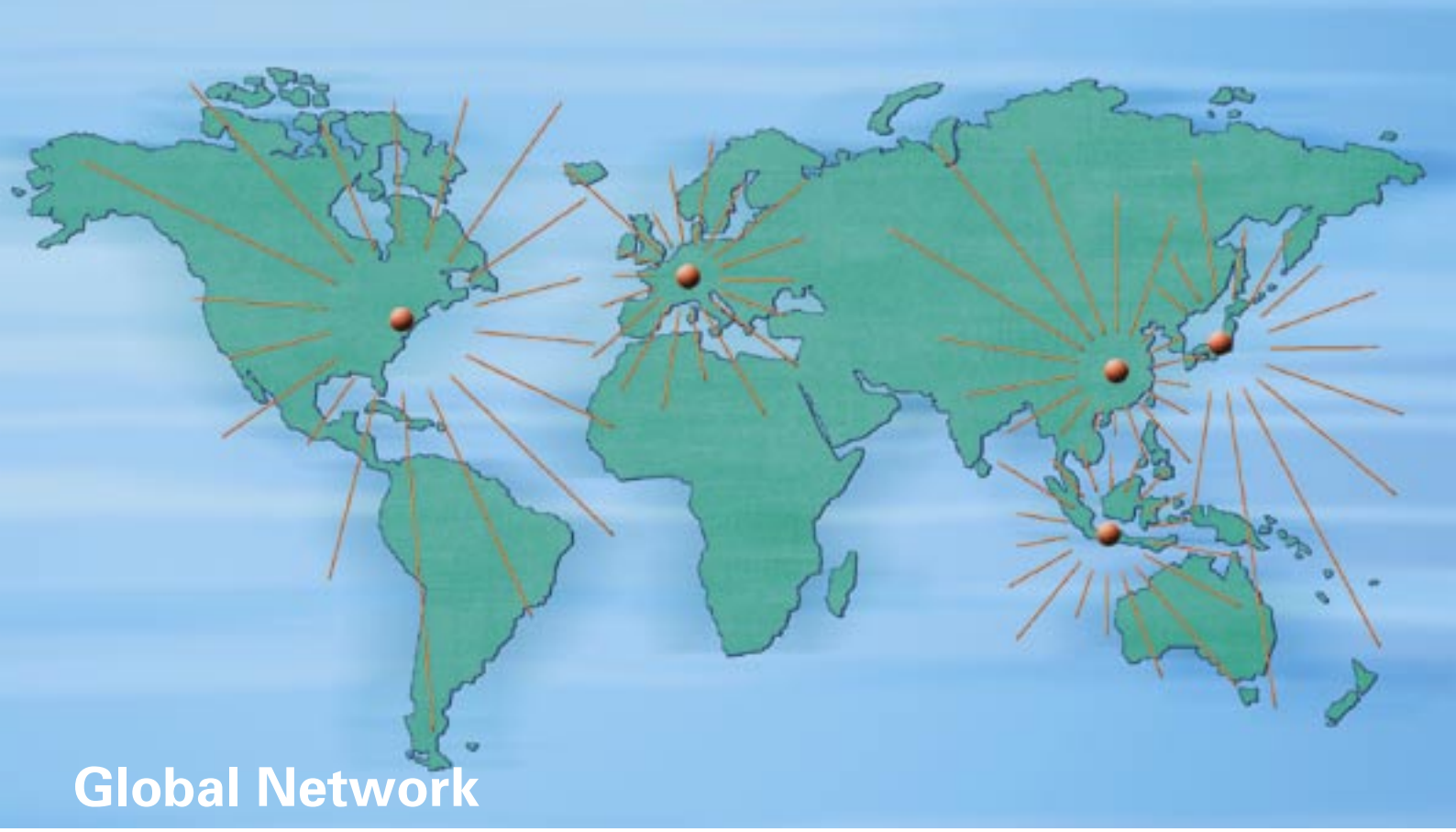
The big supermarket chain uses FP Web-Server units to supervise lighting, freezers, compacting machines, fire pumps, air conditioning and generators at every site in Portugal. Capitalizing on the existing company Intranet, installation costs were low. As in numerous other applications, reports are sent by email. Coupled with precise control by the FP0, energy savings of up to 30% have been realized!

Automatech Sp.z o.o, Poland

Implemented a remote monitoring system for ventilators and turbines at a company for metal processing. The FP Web-Server is used together with a FP0 PLC and a GPRS module for wireless TCP/IP access via mobile phone.

Golf Course in Spain

A wireless network is used to control lighting and irrigation systems on golf courses.
WAP (Wireless Application Protocol) modems are used for radio communication, and the FP Web-Server is used to provide all data for wireless TCP/IP communication.



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