EFA – NetWeb SERVER

General features:

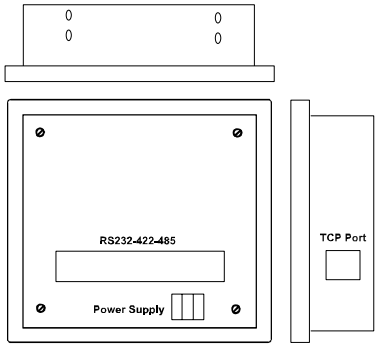
Easy connection of a serial device to an Ethernet TCP/IP network.
On the serial port there are supported the most popular protocols of PLCs, regulators, inverters etc., such as:

- Siemens S5/S7
- Allen Bradley
- Schneider
- GE Fanuc
- Omron
- Mitsubishi
- Matsushita
- Hitachi
- ABB
- and many others ...

Net Web Server was designed combining EFA's long experience in developing lots of control device drivers for its operator panels, with the AnyBus® technology by HMS, world leading company for industrial communication interfaces.
It allows the coupling of any serial device with RS232/RS422/485 or TTY (current-loop) interface to an Ethernet TCP/IP network.
Hence, Net Web Server allows to recover and exploit all those devices not designed to be attached to a TCP/IP network and that should be integrated in a SCADA or data collecting system.
To perform efficiently this job, the Net Web Server cyclically asks for all required variables on the serial unit in order to keep tags alive and ready to be sent on the TCP/IP side. On the other side, up to now, the Open ModBus/TCP protocol is placed on the Ethernet TCP/IP stack, other protocols will follow in the future.
Because ModBus/TCP is a standard and royalty-free protocol, the Net Web Server can be work together with, more or less, any SCADA (e.g. Citect).
Net Web Server is easily configurable by means of WinFly software package available for the configuration of the whole family of FLY Operator Panels. WinFly provides the user a graphical environment to configure the data that the gateway must exchange between the serial device and the network.
Furthermore, WinFly allows the user to download the specific driver for a particular device (see the driver list available) and configure all the registers or I/O points which must be sent to the Ethernet TCP/IP network. The user can define up to 256 tags to be exchanged with the serial device connected to NS-0P1, for each tag the user can decide if it can be a read only Tag or a read/write Tag.
The IP address of the NWS can be freely and easily configured using the same WinFly configuration tool and it will be displayed at NWS start-up time in order to give a check.

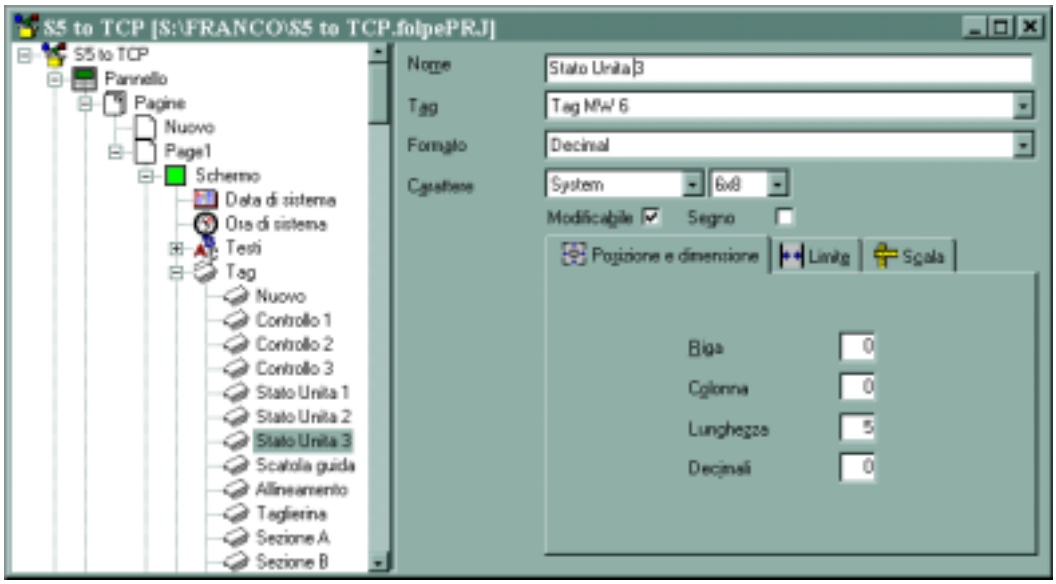
General Features and overall dimensions:

Feature	Figures
N° of exchanged tags	Up to 256
Serial port	RS232, RS422, RS485, TTY
TCP port	RJ45
Display	2 rows x 16 char. (only for diagnostic)
IP Level	IP65F
Supply	24VDC +/- 5%
Consumption	2 W
Operation temperature	0 ÷ 50 Celsius degree
Humidity	5% - 95%
Weight	0,5 kg
Mechanical dimension	130 x 120 x 45 mm (W x H x L)



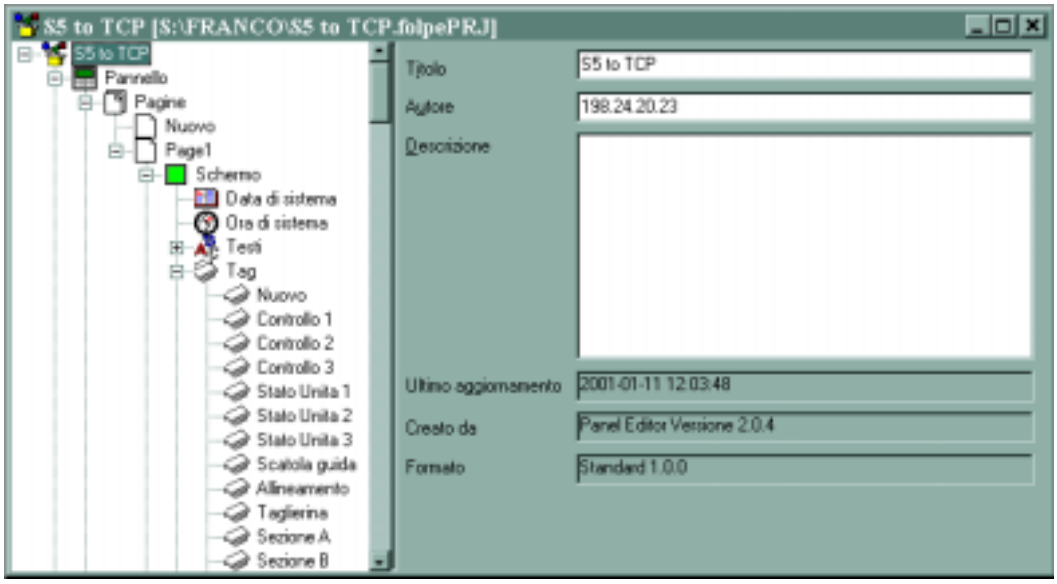
Configuration of the exchanged tags

In order to define which tags are to be read and written toward the serial port, it will be necessary to build up one single page using WinFly configuration software. Hence, first of all it is required to create a tags dictionary in the PLC section, then it's enough to create a page and to instance all needed tags following the order in which Modbus/TCP will addresses them. Only pay attention to instance first word tags (8 or 16 bit word, 32 bit word are not supported) and then all bit tags.
As result, we will obtain a tag list as shown in the figure below. Note that each tag could be defined 'Modifiable' o not.



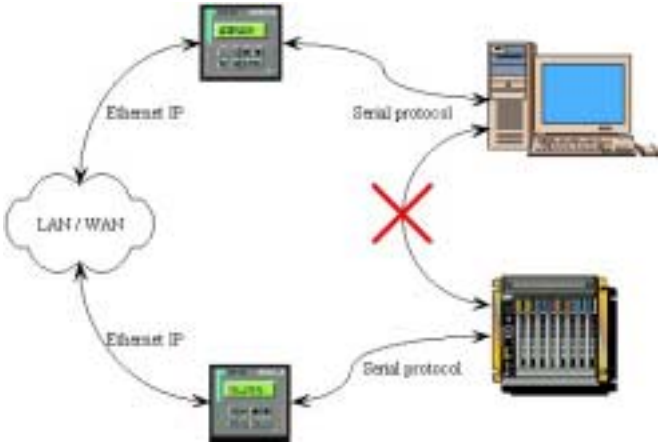
ModBus/TCP notes.

The IP address assignment is done simply through the insertion of it in the 'Author' field. In this way, IP address will appear when the Net Web Server is powered up allowing an easy check.
Valid ModBus/TCP addresses are supplied on two separated area. From 30001 to 30256 it is always supplied values coming from the serial port, while from 40001 to 40256 it is possible to write values to send on the COM port.



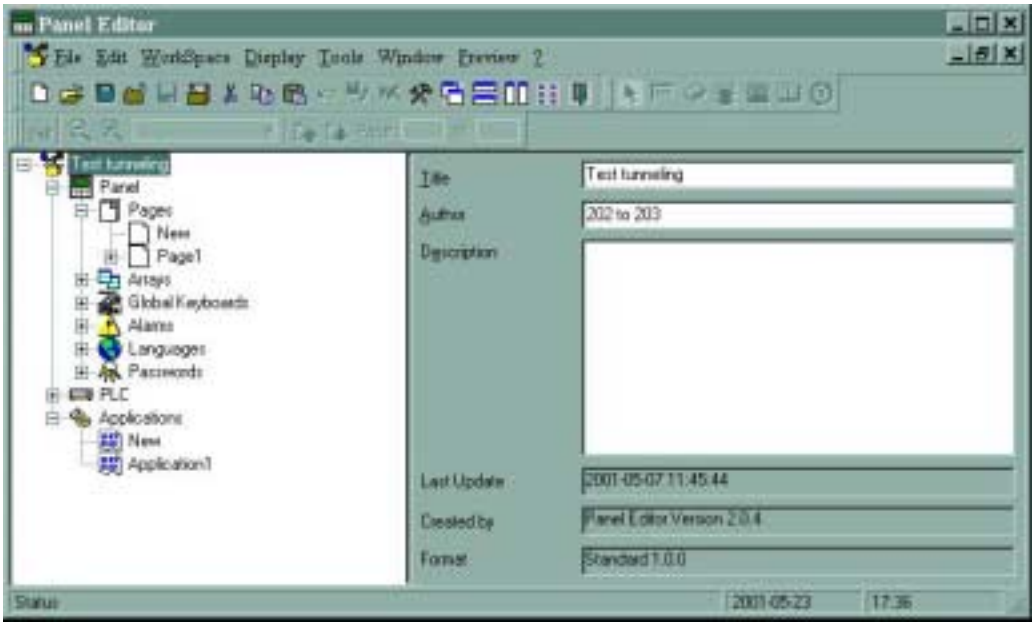
'IP Tunnelling' driver

Net Web Server also supports 'IP tunnelling' mode, that means two Net Web Server are able to put virtually any protocol over UDP/IP stack without the need to develop any custom driver.
In this way it's possible to take 2 serial communication units and made them Ethernet units with absolutely no change on both parts. Each 'Net Web Servers' sends to the other one any message coming from the serial port and, in the same time, it's able to send on the COM port every message coming from the Ethernet port.
In short, each Net Web Server acts as a sophisticate Physical Layer translator, without the need to decode the serial protocol. This allows to support particular proprietary protocols for which are not possible or convenient to create a specific communication driver.



'IP Tunnelling' configuration.

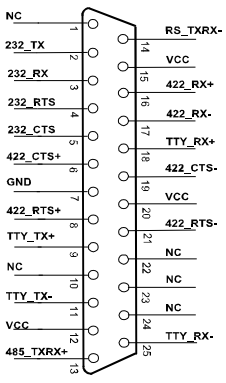
Because of no tags are seen by the Net Web Server on this configuration, only IP addresses (local and remote) are to configure onto WinFly. Note that in this case IP address configuration regards only the last number. Complete IP address is 192.168.0.xxx (standard intranet address), where xxx is defined in the 'Author' filed for both Net Web Servers. Just mind to exchange local and remote address between the two application regarding the two Net Web Server.



Multi-standard COM port pin out.

RS-232			RS-485		
2	TX	Transmit Data	13 - 16	TXRX	Tsm/Rcv Data
3	RX	Receivet Data	14 - 17	TXRX-	Tsm/Rcv Data
7	GND	Signal Ground	7	GND	Signal Ground

RS-422			TTY		
13	TX+	Transmit Data +	9	TX+	Transmit Data +
14	TX-	Transmit Data -	11	TX-	Transmit Data -
7	GND	Signal Ground	7	GND	Signal Ground
16	RX+	Receive Data +	18	RX+	Receive Data +
17	RX-	Receive Data-	25	RX-	Receive Data-



Note: In case of RS485 connection pin 13 must be shorted with pin 16 and pin 14 must be shorted with pin 16.