MULTIPLE USERS— SINGLE METER PM130EH+

Innovative Electronics For You

APPLICATION NOTE –2

PM130EH+

M.B. Control & Systems Pvt. Ltd.

- *Two communication ports*
- *Serial RS485 for MODBUS, DNP3.0 and IEC– 60870-5-101*
- *Multi master Ethernet port—five master support over Ethernet port*
- *Communication protocols over IP port —, MODBUS over IP and IEC– 60870-5-104*
- *Accuracy class 0.2S and 0.5S*

MULTIPLE USERS FOR METERS

With requirements of Smart Grid, multiple users require different parameters from feeder and grid meters.

SCADA application requires instantaneous parameters—V, I, KW, KVAR etc. from the meters. These parameters are transmitted to SCADA center via RTU at sub-station. Energy accounting departments are more interested in energy parameters—KWH, KVARH, Hz etc.

Many times there are different communication channels for each user. Hence multiple meters are installed on the same feeder/ grid to meet requirement of each user department.

This results in more complex wiring, more hardware, more panel space and more investment in hardware.

Transmitting all required parameters via RTU results in increase in number of tags in RTU (which may again result in high cost of RTU) and increase in communication bandwidth of RTU system.

Panel mounted, four quadrant Satec MFM PM130EH+ provides all required electrical parameters with accuracy class 0.2S or 0.5S. It can have two RS485 / RS232 serial ports or one serial RS485 and one Ethernet port. This enables multiple users to read parameters from same meter.

PM130EH+ COMMUNICATION WITH MULTIPLE USERS

Satec MFM PM130EH+ has option for multiple communication ports.

Following options are available for communication ports:

Com Port-1: RS485

Com port-2: RS485 or RS422 or RS232 or Ethernet

Following protocols are available in PM130EH+:

For Serial Ports : MODBUS RTU, MODBUS ASCII , DNP3.0, Profibus or IEC-60870-5-101

For Ethernet Port : MODBUS RTU, DNP3.0 or IEC-60870-5-104

Ethernet port supports multi-masters. Up-to five masters can be connected to the meter PM130EH+ simultaneously for MODBUS over IP.

Each port can be configured independently for communication parameters and communication protocol at site. This enables multiple masters to communicate with PM130EH+ and get the parameters required by them using their protocol. Since all users can request only required parameters from PM130EH+, they can optimize their data requests and usage of communication channel

All additional hardware required due to multiple meters for same feeder is not required.

Satec MFM PM130EH+ with additional plug-in Serial port / Ethernet Interface Module

CONFIGURE PM130EH+ SERIAL PORTS

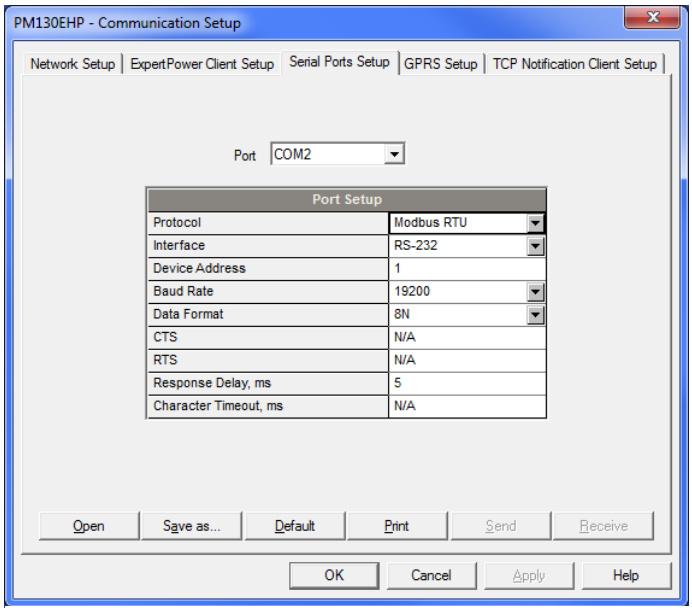

Figure-1: Configure PM130EH+ serial port-2

PM130EH+ is supplied with one default serial RS485 port. One additional serial port—RS485, RS422 and RS232 can be added to the meter. PM130EH+ is supplied with PAS software which can be used for configuration of all meter parameters. Meter can also be configured using its front panel keys. See figure-1 below for configuration of serial port via PAS software.

Following options are available for selection of second communication port interface : - RS232, RS-422, RS485 , Dial-up Modem, Ethernet, Profibus and GSM/ GPRS.

Serial port can be configured for communication speed from 300 to 115,200 bps.

Following communication protocol can be selected for serial ports:

1. MODBUS RTU
2. MODBUS ASCII
3. DNP3
4. IEC-70870-5-101

CONFIGURE PM130EH+ ETHERNET PORT

Configuration screen for configuration of Ethernet port is shown in figure-2.

Set the required Ethernet communication parameters.

Following protocol can be set for the Ethernet port:

1. MODBUS over IP : Can support up-to five masters simultaneously.
2. IEC-70870-5-104 : Supports one master. Following features are provided for the protocol.
   - Cyclic transmission of class-2 analog parameters.
   - Single and double inputs
   - Single and double outputs
   - Counters with freeze
   - Spontaneous reporting of events.
   - Clock synchronization

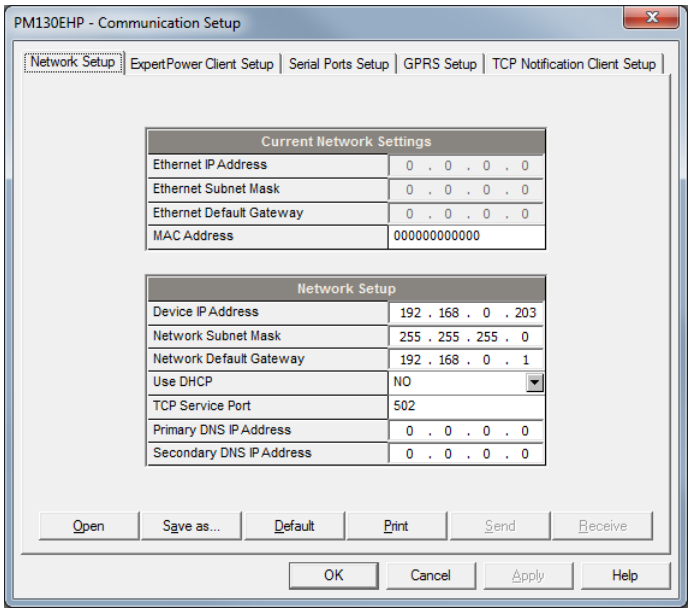

Figure-2: Configure PM130EH+ Ethernet Port

ADD ON MODULES AVAILABLE WITH SATEC MFM PM130EH+ (OPTIONAL)

4DI+2DO • 12DI+4DO • Four Analog Outputs (4-20mA) • TOU • RS232/RS485 Communication Port • Ethernet Communication Port• Profibus Communication Port • GPRS Modem

COMMUNICATION PROTOCOLS AVAILABLE WITH SATEC MFM PM130EH+ (OPTIONAL)

MODBUS RTU over serial • MODBUS RTU over TCP • Profibus DP • DNP3.0 • IEC-60870-101 • IEC-60870-104

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