

# PM130EH+ DUAL OPERATION MULTI-FUNCTION METER AND TRANSDUCER

- Panel mounted Multi-Function Meter
- Power quality analysis
- Optional four analog outputs
- Serial RS485 for MODBUS, DNP3 and IEC– 60870-5-101
- Accuracy class 0.2S and 0.5S

## MULTIFUNCTION METERS AND TRANSDUCERS

Many electrical panels require Multi-Function Meters for local display of parameters as well as electrical transducers to provide analog signals (4-20mA) to DCS.

At present MFM is installed on the panel front. Transducers are used for providing analog signals to DCS. Multiple transducers (one for each parameter) are used for providing analog signals for KW, KVAR, KVA, V and I.

Transducers are mounted in separate chamber in the panel, thus increasing size of the panel.

CT VA burden also increases as per the transducers used.

There is significant increase in cost of the panel by use of transducers. This cost includes — cost of transducers, cost of panel, cost of wires and labor charges.

Panel mounted, four quadrant Satec MFM PM130EH+ provides all required electrical parameters with accuracy class 0.2S or 0.5S.

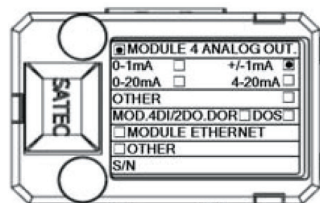
It can also provide four analog outputs for required parameters thus saving all additional expenses incurred in installing additional transducers.



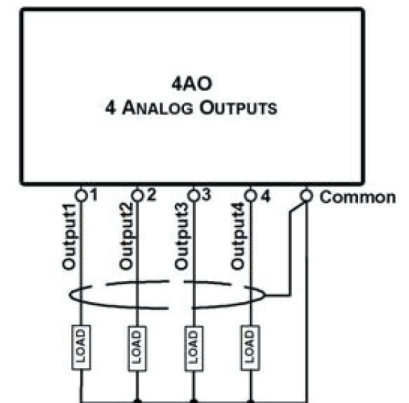
PM130EH+



Satec MFM PM130EH+ with plug-in Analog Output Module



ANALOG OUTPUT (AO) TERMINALS



## PM130EH+ ANALOG OUTPUTS

Optional analog output module is available for PM130EH+. This module provides four analog outputs. See figure-1 below for analog output module connection diagram.

PM130EH+ will provide display of all the electrical parameters and also provide analog outputs for four parameters which can be selected at site by the user.

All parameters are also available via the serial RS485 communication port.

This dual functionality will result saving on all hardware and cabling required for installation of separate transducers. Panel size can also be reduced. Thus reducing overall cost of the panel while meeting all requirements.

## PM130EH+ ANALOG OUTPUTS

Following options are available for analog output module while placing order for the same.

- $\pm 1$  mA
- 0-20mA
- 0-1 mA
- 4-20mA
- 0-3mA
- $\pm 3$  mA
- 0-5 mA
- $\pm 5$  mA.

## CONFIGURE PM130EH+ ANALOG OUTPUTS

Each analog output can be configured for parameter and range.

Following parameters can be selected for analog outputs :

- Real time voltage
- Real time current
- KW
- KVAR
- PF
- PF Lead
- PF Lag
- Hz
- KW Import Accumulated demand
- KW Export Accumulated demand
- KVAR Import Accumulated demand
- KVAR Export Accumulated demand
- KVA Accumulated demand

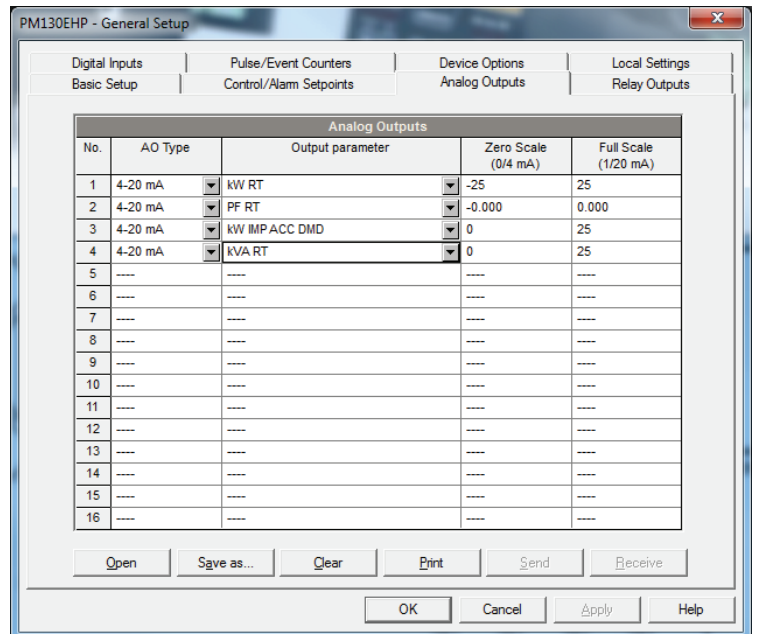


Figure-2: Configure PM130EH+ Analog Outputs

Configuration screen for analog outputs is shown in figure-2.

Output scale range can also be set for each analog output based on selected parameter. All analog outputs are updated on cycle to cycle basis.

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

44DI+2DO ● 12DI+4DO ● Four Analog Outputs ● 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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