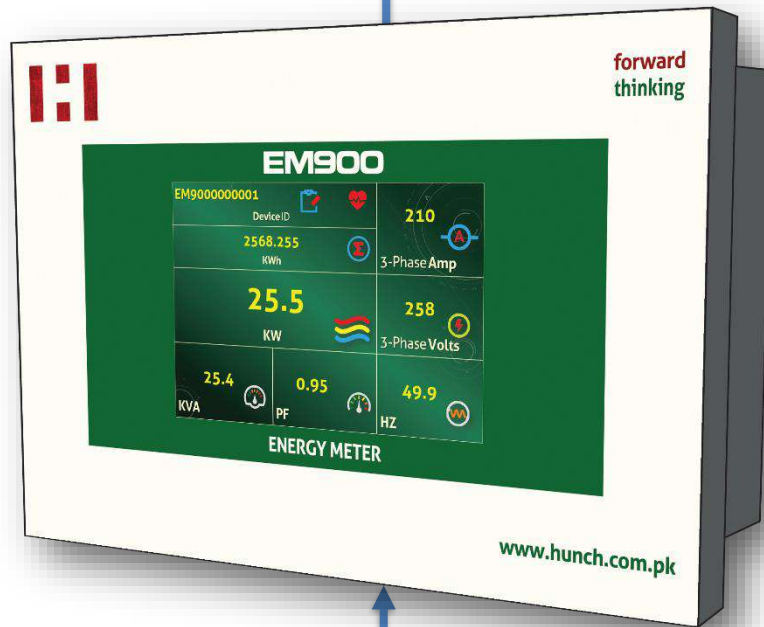
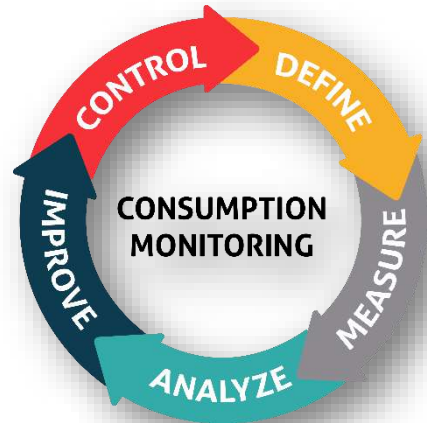


Energy Meter

EM900



brief features

The EM900 is an intelligent solution for accurate consumption & measurement of electric energy consumed by an Industry, or an electrically powered device.

One of the key advantages of the EM900 Energy Meter is its exceptional performance stability across diverse operational environments. Whether encountering fluctuations in voltage, varying loads, or different power factors, this meter excels in maintaining accuracy and consistency. Its robust design and adaptable functionality make it well-suited for a broad spectrum of applications across residential, commercial, and industrial settings, facilitating informed energy management decisions and compliance with regulatory standards.

The intelligent EM900 use advanced dual core MCU and TFT color touch screen for display multiple parameters. Web enabled intuitive and easy-to-use menu for monitoring, configuration and diagnostics. Changing parameters Meter ID, Baud Rate, Stop Bit, Parity and CT Ratio can be done from TFT color display. Modbus RS485 option can be used to connect with any PLC or SCADA.

applications customers

APPLICATIONS

For application in industrial and commercial Energy Meter Monitoring

- Energy Meter Panel
- Power Plants
- Grid Stations
- Commercial Buildings
- Manufacturing Plants
- Renewable Energy Systems

CUSTOMERS

Industrial and commercial sectors, such as:

- Chemical processing
- Textiles
- Power plants
- Steel rerolling mills
- Pharmaceuticals
- Bulk customers (housing societies)
- Sub metering
- Hotels

technical specifications

FEATURES

The EM900 telemetry system with latest CPU with forward-thinking algorithms and web server function modules makes it more user friendly.

Informative

EM900 has 4.5" TFT color HMI touch screen display. User can monitor and setup all the parameter from:

- Local HMI with Admin Account
- Smart phone/Laptop any using web browser.
- Remote server

Password: 2 Level of passwords restriction

- SSID
- Admin Account

Display Housing

- Operating temperatures: 0~70 °C
- RH: 0~90%
- UPVC IP 65 water proof
- Size: 160mm X 115mm X 75mm
- Wall mounting

Easy To Use

- Operation can be done within minutes. Connect the field instrument with pre made wiring harness. Keep it online and configure it by using local App and get the data on online remote server.

Setup

- Calibration, Configuration: From 4.5" TFT color HMI touch screen display.

SPECIFICATIONS

Power Supply: 9~24 V DC, 5 W

Password: 2 Level of passwords restriction

- Admin Account
- SSID

EEPROM:

Data retention 20,000 records (100 B/Record)

CPU:

- Dual core up to 240 MHZ
- Flash RAM: 4 MB

Backup power:

5~7 Hours with Li-ion battery (Optional)

Transmission: User programmable

- Interval: 1~60 Minutes
- Method: Using Mosquito broker via MQTT
- Protocol: MQTT

Configuration:

- Remote: Could server using MQTT protocol

Database: Mongo DB API development

Communications:

3 types of communications available

- Modbus RS485 (Master)
- Wi-Fi for Web Server
- GSM/GPRS 2G/3G (Optional)

Environmental:

- Operating: -10~65 °C
- Storage: -40~85 °C
- Relative humidity: 10~90%

Connections:

- PCB: Removable screw terminal blocks
- Terminal block: Wire size: 0.5~0.7 mm
- Field connections: Wiring harness 3 meters

Embedded Energy Meter:

- Kilo Watt Hour
- Kilo Watt
- 3 Phase Voltage
- 3 Phase Ampere
- Kilo Volt Ampere
- Power Factor
- Frequency

Warranty: 1 year after delivery

wiring connections



Terminal block connections for Energy Meter.

- RS485 A = A
- RS485 B = B
- UN = Neutral
- UC = L3
- UB = L2
- UA = L1
- $\left. \begin{array}{l} IC \rightarrow CI \\ IC^* \rightarrow CO \end{array} \right\} C3$
- $\left. \begin{array}{l} IB \rightarrow BI \\ IB^* \rightarrow BO \end{array} \right\} C2$
- $\left. \begin{array}{l} IA \rightarrow AI \\ IA^* \rightarrow AO \end{array} \right\} C1$

display screens

User friendly color Touch industrial grade display, which is displaying all important required parameters.



STARTUP SCREEN

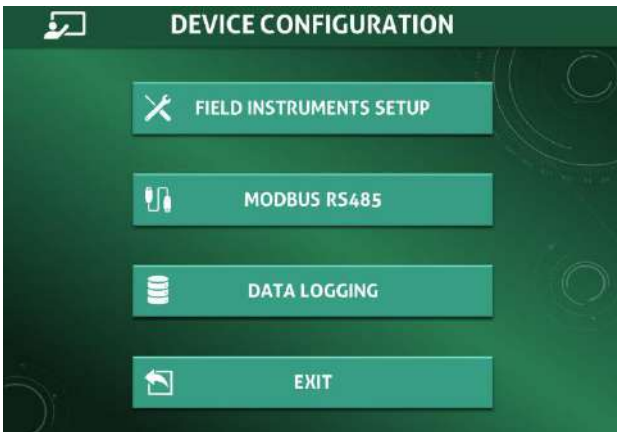
EM900: Energy Meter



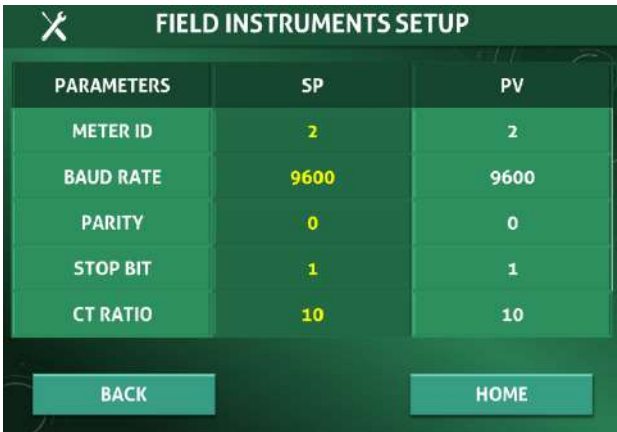
MAIN SCREEN
Display parameters:
 Meter ID
 Kilo Watt Hour
 Kilo Watt
 3 Phase Voltage
 3 Phase Ampere
 Kilo Volt Ampere
 Power Factor
 Frequency



Login Screen
 Password: 77xx

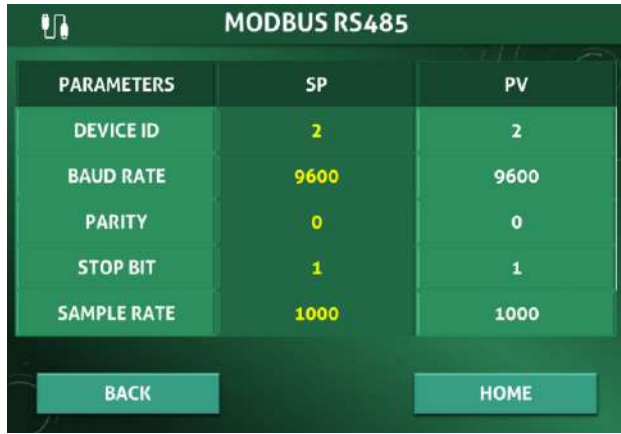


Setting Screen
Display parameters:
 Field Instruments Setup
 Modbus RS485
 Data Logger



Field Instruments Setup Screen
Display parameters: (PV → Previous Value; SV → Set Value)
 Device ID
 Baud Rate
 Parity
 Stop Bit
 CT Ratio

EM900: Energy Meter



Modbus RS485 Screen
Display parameters: (PV → Previous Value; SV → Set Value)
 Device ID
 Baud Rate
 Parity
 Stop Bit
 Sample Rate

communication Modbus tags

CONFIGURATION

EM900 has built-in Wi-Fi module. There is no need of any special data communication hardware or software, an end user can easily configure it by using Touch Screen Display.

DATA LOGGING

Furthermore, EM900 has comprehensive feature of data transferring of its tags to local or cloud server by using its built-in Wi-Fi module in Salve mode through HTTP/MQTT. By using feature end user can log the data to its local or remote server for online monitoring and reporting purpose.

MODBUS RS485

EM900 has built-in Modbus RS485 module, therefore, end user can get the data to PLC, DCS, SCADA, OPC server or any data communication module/software.

Standard Modbus tags detail is as under for communication.

DEFINE NAME	TYPE	ADDRESS	
Meter ID	Swapped long	0X02	Function code: 03 or 04 Register type: Holding register
Kilo Watt Hour	Swapped long	0X04	
Kilo Watt	Swapped long	0X06	
3 Phase Voltage	Swapped long	0X08	
3 Phase Ampere	Swapped long	0X0A	
Kilo Volt Ampere	Swapped long	0X0C	
Power Factor	Swapped long	0X0E	
Frequency	Swapped long	0X10	

EM900: Energy Meter

mounting instructions

For proper reliable data, Energy Meter should be installed properly.



forward thinking

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