

SmartMon^Q Energy

[HS-EXTM / HS-EXTE]

Quick Start Guide

Prior to configuration:

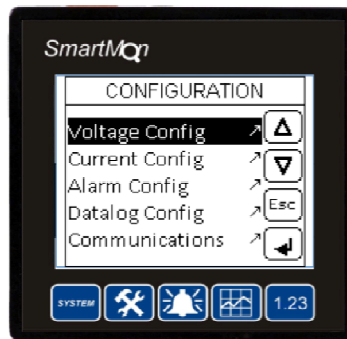
1. Reference document TDS0911, which provides instructions on the installation and wiring of the SmartMon Energy.
2. Physically install the SmartMon unit per TDS0911. For a Smart QSG0911Mon unit purchased in a factory fitted enclosure, install the enclosure in its permanent location.
3. Mount the CT's and/or optional PT's, wiring them to the SmartMon per TDS0911.
4. Ensure that the appropriate power is provided to the SmartMon. For a SmartMon unit purchased in a factory fitted enclosure, provide 120Vac for power. For a SmartMon unit purchased as a stand-alone unit, 10-30Vdc is appropriate control power.
5. Apply power to the SmartMon, which will display its initial splash screen upon power-up.

SmartMon Energy Function Keys



- System/Home – When pressed until a double-beep, this button toggles between two screens which summarize the current energy data. When pressed and held for 3 seconds, the system screen is displayed - where time may be set, removable media exchanged, etc.
- Configuration – where operational parameters are set for the unit (CT Ratios, PT Ratios, Alarm levels, etc).
- Alarms – toggles between current alarms (Alarm Summary) and past alarms (Alarm History)

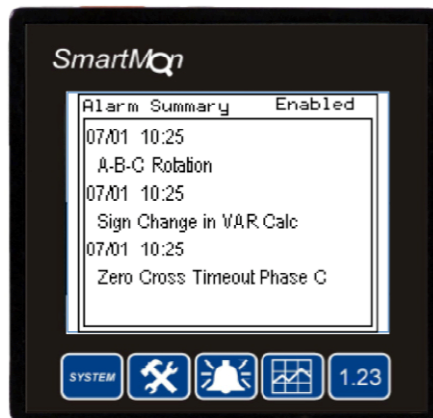
- Trend Charts – pressing this key multiple times cycles between a variety of trend charts for the main energy values (kW, V, A, pF, etc.) over time
- Numeric Data – pressing this key multiple times cycles through displays indicating current energy values numerically, as well as the minimum and maximum levels, and the date/time those levels were achieved



Steps to Configure the SmartMon Energy:

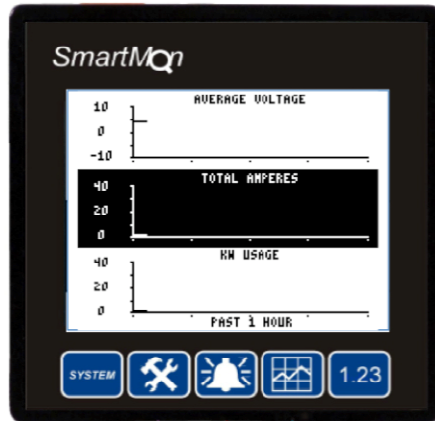
1. After applying power, the SmartMon will go through a startup sequence, and then display its splash screen for 5 seconds.
2. To initiate configuration, press the CONFIGURATION key. This displays the CONFIGURATION menu. Most parameters on the SmartMon are configured using a menu system. The menu is navigated as follows:
 - Highlight a selection using the UP/DOWN arrow keys or by touching the selection.
 - Once the desired selection is highlighted, pressing the Enter softkey will either:
 - i. Navigate to a sub-menu, or
 - ii. Bring up the pop-up keypad, to allow editing of a parameter value.
 - Values may be edited from the pop-up keypad as follows
 - i. For a numeric field, simply key-in the value using the number keys and Enter.
 - ii. To exit from the pop-up keypad without entering a value, press the Escape key.
 - You can “back out” of any menu item, as well as the Configuration Menu itself, using the Esc key.
3. Configuration Menu Items. The following items are accessible from the Configuration Menu:
 - Voltage Config
 - Current Config
 - Alarm Config
 - Datalog Config
 - Communications
4. Voltage Config. The following items can be configured from the Voltage Config menu item(s):
 - PT ratios for each phase. A ratio of 1.00:1 indicates a 480V direct input.
 - Nominal Voltage (expected voltage)
 - High Voltage Alarm
 - Low Voltage Alarm
 - High/Low Alarm Delay (amt of time value must exceed setpoint prior to Alarm enunciation)
 - Zero-cross Timeout (amt of time without a zero-cross prior to Alarm enunciation)
5. Current Config. The following items can be configured from the Current Config menu item(s):
 - CT ratios for each phase. A ratio of 1.00:1 indicates a 5A input.
 - Full-load Current (expected current)
 - Advanced Setup
 - i. CT Phase Compensate for each phase (number of degrees to adjust each phase +/-)

- High Phase Current
 - Low Phase Current
 - High Total Current
 - Low Total Current
 - High/Low Alarm Delay (amt. Of time value must exceed setpoint prior to Alarm enunciation)
6. Alarm Config. The following items can be configured from the Alarm Config menu item(s):
- Alarms Enabled/Disabled (no alarms will be logged while this is set to the default of disabled)
 - Low Power Factor
 - High kW Alarm
 - Delay Above Alarms
 - High 5-min Demand
 - High 15-min Demand
 - High kWh Today
 - High kWh This Month
 - Voltage Alarms (High, Low, Alarm Delay, Zero-Cross Timeout)
 - Amperage Alarms (High & Low Phase, High & Low Total, High/Low Alarm Delay)
7. Datalog Config. The following item(s) can be configured from the Datalog Config menu item(s):
- Datalog Enabled/Disabled. No datalogging to removable memory (microSD) will take place while this parameter is set to the default of disabled.
 - Datalog Frequency. The elapsed time period before new data values are logged. Initially fixed at 1 Minute.
8. Communications. This screen allows the RS-232/RS-485 Modbus port (MJ2) to be configured, as well as the Modbus/TCP Ethernet port (LAN) to be configured. There are also indication LEDs on this screen to indicate activity and status.
9. **Note:** You cannot navigate to another display/screen until exiting from the Main Configuration Screen using the ESC key.



Viewing Alarms on the SmartMon Energy (ALARMS)

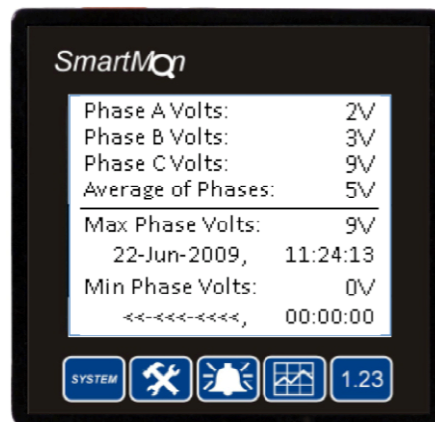
Pressing ALARMS on the SmartMon displays the Alarm screen. From here, the current alarms (Alarm Summary) and historical alarms (Alarm History) may be viewed, and cleared if desired. When current alarms are active, and not acknowledged, they flash. To Ack and/or Clear an alarm, touch the Alarm Summary or Alarm History window on the screen, which will bring up the Alarm Viewer. From the Alarm Viewer, you can choose to view but take no action (Press Esc), clear/ack an individual alarm (highlight the alarm, Press Clr or Ack), or clear/ack all alarms (Press Clr All or Ack All).



Viewing Trends on the SmartMon Energy (TRENDS)

Pressing TRENDS repeatedly will cycle through the available trends. The following seven trend screens are available:

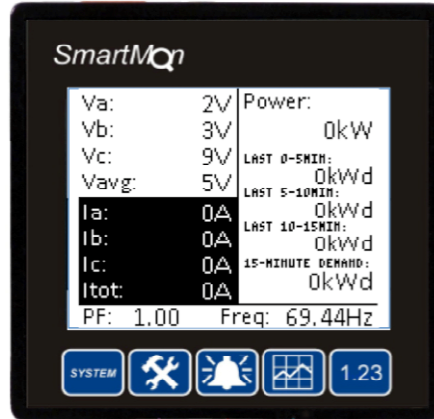
- Volts, Amps, and kW – for the last hour
- Volts, Amps, and kW – for the last 24 hours
- Volts, Amps and kW – for the past week
- Volts, Amps and kW – for the past 30 days
- Power Factor – for the past hour, 24 hours, and week
- Power Factor – for the past 30 days
- Frequency – for the past minute, hour, and 24 hours



Viewing Numeric (Min-Max) Data on the SmartMon Energy Plus (NUMERIC)

Pressing NUMERIC on the SmartMon displays the Instantaneous Values, as well as Minimum and Maximum Values for several energy parameters. The Minimum and Maximum values are date and timestamped as well. The following screens are accessible:

- Voltage (A, B, and C phases) – Instantaneous and Min/Max
- Current (A, B and C phases) – Instantaneous and Min/Max
- kW, kVA & kVAR – Instantaneous and Max
- Power Factor – Instantaneous and Min & Frequency – Instantaneous and Min/Max
- Reset Screen – resets Min/Max for all Energy Parameters



Viewing Live Energy Data on the SmartMon Energy (HOME VIEW)

Pressing HOME VIEW on the SmartMon, until a double-beep is emitted, toggles between two screens with live energy data. The following parameters are displayed on these two screens:

Screen #1

- Volts Phase A, Phase B & Phase C (V, numeric)
- Volts Average (V, numeric & analog gauge)
- Current Phase A, Phase B & Phase C (A, numeric)
- Current Total (A, numeric & analog gauge)
- Instantaneous Power (kW, numeric)
- Rolling Demand, 60-second updates (kWd, numeric) [0-5 min, 5-10min, 10-15min]
- 15-minute Demand, 60-second updates (kWd, numeric)
- Power Factor (numeric)
- Frequency (Hz, numeric)

Screen #2

- Volts Average (V)
- Current Total (A)
- Instantaneous Power (kW)
- 24Hr. Average Power (kW)
- Month Peak (kW)
- 15-minute Demand, 60-second updates (kWd)
- Energy Consumed Today, Total, and This Month (kWh)
- Apparent Power, Month (kVAh)
- Reactive Power, Month (kVARh)
- Date and Time



Accessing/Viewing Logged Energy Data (.CSV format) from Removable Memory

The SmartMon Energy automatically logs energy data to its 2GB removable memory card every 1 minute. This data is stored in a spreadsheet & database compatible format (.csv). Every day at midnight, new .csv files are started for each log. The following logs can be found in the root directory of the SmartMon:

- OVERVIEW folder. Each daily OVERVIEW log file contains the following data columns, with rows of new data every one minute:
 - Date
 - Time
 - Vavg
 - Itot

- kW
 - kVA
 - kVAR
 - PF
 - Hz
 - kWh Today
- PHASES folder. Each daily PHASES log files contains the following columns, with rows of new data every one minute:
- Date
 - Time
 - Va
 - Vb
 - Vc
 - Vavg
 - Ia
 - Ib
 - Ic
 - Itot

There are two primary ways to access the datalog files from the Removable Memory card. The simplest is to remove the memory card, copy the files to a computer, and then replace the memory card in the SmartMon. If using this method, the user has over an hour to complete this process before any data is lost.

The second method is to access the files using EnvisionFX software. For more details on this software and this process, contact Horner APG.

SmartMon Status Screen

By pressing the System button, and holding it down for 3 seconds, a Status screen displaying a variety of status info is shown. This includes the current time, current date, as well as the Program & firmware information for the SmartMon unit. By touching the current time or current date fields allow them to be edited from the pop-up keypad.

TECHNICAL SUPPORT

For assistance and manual up-dates, contact Technical Support at the following locations:

North America:+

(317) 916-4274

www.heapg.com

Europe:

(+) 353-21-4321-266

www.horner-apg.com

