Specifications

General: 
- Display Character Size: 9/16”
- Input Voltage Range: 80-249V AC*
- Maximum Power Consumption: 1.00W**
- Dimensions: Height 2.431” (61.75mm)
- Physical: Resolution: 0.1Hz
- Range: 80-249V AC*

Power measurement: For example, if the AC line was processed inside the meter and scaled to a transformer (CT). The CT is a toroidal transformer (doughnut shaped). The AC line to be measured is passed through the center of the CT. The CT has a full current rating of 150 Amps and when 150 Amps flows in the primary of the generator it will produce 1 Amp through the secondary of the CT.

Safety: 
- **WARNING:** Flashing included instruction in basic electrical skills
- Use a full discussion of AC monitoring and use is beyond the scope of these instructions. The topics mentioned below may be used as a guide, but should not be considered comprehensive.

3. **Special Warning** 
   - Turn off all AC sources before terminating either end of wires #1 and #3, which supply both power and voltage sensing. Models that have the ability to measure both power and voltage sensing. This approach simplifies installation. Supplies both power and voltage sensing. In 120 Volt systems you may disconnect it from where it is terminated, for example, at a circuit breaker. Slide the wire through the center of the CT and re-connected. Only pass one conductor through the CT. In 120 volt systems you may pass the neutral conductor through the CT. In 240 Volt systems you must use one, or the other conductor for currents through the CT. Try to pick the line with the most load. Do not use the neutral conductor to monitor current in a 240/3 or four wire system, since in a balanced system the neutral current should be zero.

NOTE: The sleep mode is a simple power saving feature. If there are no button presses for 10 minutes the alarm will go to sleep. The button is accessed during the button for 2 seconds will access the MENU and while in the MENU mode, pressing it is used to set or store the displayed value to memory.

4. **Power measurement:** 
   - All models require the same connections to power the meter. Meters with the voltage function use these same connections for voltage sensing. The terminals on the back of the unit are labeled red and black. Ungrounded line voltage conductors which feed the meter should be connected with the appropriate voltage rating for the application. If it is not possible to ensure that there are no exposed parts at line voltage when the fuses are removed, never make electrical contact with the fuse holder itself. Place the fuse in an insulated holder and press with a 0.25 to 0.5A helps protect the meter against premature failure and the wiring against shorts.

The wiring from the AC source should be short and as close as possible to the meter and scaled to the main AC distribution circuit breaker.

Physical:
- Voltage Measurement: 80-249V AC
  - Resolution: 0.1V AC
  - Accuracy (% of Readings) 0.2% of reading, 2.0% of full scale
- Current Measurement: 150A max
  - Resolution: 0.00399A AC RMS
  - Range 1: 10-150A AC RMS
  - Accuracy (% of Reading) 2.0% of full scale
- Power Measurement: Range 1 (10kW) 0-999.9W
  - Range 2 (10kW) 0-10.49kW
  - Accuracy (% of Reading) ±0.5%

Sleep mode is a simple power saving feature. If there are no button presses for 10 minutes the alarm will go to sleep. The button is accessed during the button for 2 seconds will access the MENU and while in the MENU mode, pressing it is used to set or store the displayed value to memory.

To access the Sleep mode, hold the button for 2 seconds to access the MENU. Use the button to select the Scan mode. Use the button to select the desired value. For example, press the button to scroll until 1/16 in is displayed. Press the button to select the High Current Alarm.

Three Button Models

- The arrow buttons have two functions. Normally they change the display between Volts, Amps, Watts and Power (menu) function use these same connections for voltage sensing. When in the MENU mode they are used to navigate through the functions or adjust the values.

The center button has three functions. Normally it is used to display the following function. Using the button for 2 seconds will access the MENU and while in the MENU mode, pressing it is used to set or store the displayed values.

- Hold for 2 seconds to access the MENU
- Press to select a menu or to set memory.

Low Voltage Alarm - Volt

When the voltage is less than 30V AC or DC, the meter will display LOW VOLTAGE and output an alarm.

Scan Mode - (ON)

The Scan mode will automatically display the current Amperes, Watts, Volts, Hz, Phase, and Power factor simultaneously.

Upon power up the meter goes through a self test sequence which lights all the function LEDs.

Use the arrow buttons to select OFF or ON (Default OFF). Press the button to save the selection to memory.

WARNING: The 8247 Multimeter can be set to generate alarms based on high current, low voltage, and high voltage.

- Set the meter to display current (Ampere) using the arrow buttons. The function LED will be on. Hold the button for two seconds to access the MENU. Use the arrow buttons to scroll until OFF is in the display. Press the button to select the current function.

- Use the arrow buttons to select OFF or ON (Default OFF). Press the button to save the selection to memory and continue.

The present setting will appear in the display (default OFF). This setting is acceptable, press the button or wait for 15 seconds and the meter will revert to normal operation. Otherwise use the arrow buttons to select the desired value. For example, press the button and hold the button to scroll until up to 28.0 Ampere.

The present setting will appear in the display (default OFF). This setting is acceptable, press the button or wait for 15 seconds and the meter will revert to normal operation. Otherwise use the arrow buttons to select the desired value. For example, press the button and hold the button to scroll until up to 115 Volts.
Set the meter to display voltage using the ↓arrow buttons. The function LED will be on. Hold the ↑ button for two seconds to access the MENU. Use the ↓arrow buttons to scroll until AL is in the display. Press # to select the High Voltage Alarm.

The present setting will appear in the display (Default 130.0). If the set point is acceptable, press the ↑ button or wait for 15 seconds and the meter will revert to normal operation. Otherwise use these three actions to select the desired value. For example, press and hold the right ↑ button to scroll up to 250 Volts.

Press the ↓ button when the desired set point is displayed and the new value will be saved to memory. Two short beeps will let you know you have successfully set the new value and the meter will revert to normal operation.

Acknowledging an Alarm

The alarm system is capable of recognizing more than one alarm condition at a time. If more than one alarm is set, the meter will continuously check for each alarm condition. If an alarm condition occurs while in scan mode, or while displaying a different parameter, the display will shift to the alarm status.

If an alarm occurs, the audible alarm will sound and the display will alternate between the type of alarm and the measured value. Silence by pressing the ↓ button. Display will alternate between the alarm condition and the measured value.

Every 5 minutes the alarm will go four beeps and display the alarmed parameter. This will continue until the alarm condition is cleared, or the alarm function is turned off, or the set point changed.

If in Sleep Mode an alarm will "wake up" the meter and it will function as above. After 10 minutes of no acknowledgment it will re-enter the Sleep mode. Every 5 minutes it will give four audible beeps and display the alarmed condition. The display will show the value for 30 seconds before returning to sleep mode.

If a second alarm condition occurs while the first alarm condition is still active, it will also have to be acknowledged to stop the alarm sound. The meter will continue to display the most recent alarm condition. If that alarm condition is cleared by values returning to normal, the meter will not indicate the status of prior acknowledged alarms. Once you have acknowledged alarms, check all parameters periodically or reset scan mode to be sure you are aware of all conditions.

Displaying the Code Revision

For customer service convenience, all models are able to display the revision of software installed in the meter. To accomplish this, press the software revision for meters with a single button, press and hold the center ↓ button. To see the revision on meters with three buttons, press and hold the two ↓ arrow buttons. In either case, the power-up test will be performed and the software revision will be displayed.

Displaying on this product. Any repaired or replacement product will be warranted in accordance with this warranty, for a period of three years from the date of first purchase. Warranty Registration

Blue Sea Systems is committed to exceptional customer service. Please allow us to serve you better by registering your product online at http://blueseas.com/go/warranty-registration. If you would prefer to register your product by fax, please call (360) 738-8230 or Toll Free in the USA and Canada (800) 222-7177 for a fax-ready Warranty Registration card.

Wire by Wire Instructions

Use 16 AWG for all meter wiring. All models require connections to terminals #1 and #3. Terminals #4 and #5 are used for PN 8238 and PN 8247 only.

Wire to terminal #1 (Neutral or L1 for 240V AC systems) Connects terminal #1 of the meter to the AC Neutral for 240 Volt AC systems. For 240 volt AC systems the wire is connected to L1, supplying one leg of the 240V AC. When used in a 240 volt AC system this wire must be fused with a 0.5A fuse in a holder with appropriate rating.

Terminal #2 is not used.

Wire to terminal #3 (L1 or L2 for 240V). This wire and wire to terminal #1 supply power to the meter. Voltage is measured off these wires as well. This wire must be protected by a 15A fuse rated at 5A. Both the fuse and fuse holder must carry the appropriate voltage rating.

The wires to terminals #4 and #5 must be a twisted pair to avoid electrical system noise which will affect the accuracy of current measurement. These may be twisted by hand or by using an electric drill motor, or twisted pair wire may be purchased from most electrical supply companies. Wires to terminals #4 and #6 provide the neutral wire (generated by current flow in the primary wire passing through the CT) to the meter for current measurement.

NOTE: The wire from the CT do not have polarity indicated. The polarity does not make a difference for current measurement. The neutral wire is measured off these wires as well. If the power number is zero while the appareance number does not equal zero, reverse the CT leads.

Wire to terminal #4 (Current Transformer Sense). This is one of the sense leads from the CT. It must be a twisted pair with the wire to terminal #5. If this wire is carrying a continuous 50mA under full load and may have intermittent currents two or three times higher. It must be securely connected under terminal #4 on the back of the meter.

Wire to terminal #5 (Current Transformer Sense). This is the other sense lead from the CT. It must be a twisted pair with the wire to terminal #4, and it must be securely connected to terminal #5 on the back of the meter.

Terminal #6 is not used.

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