

# AD121R INSTALLATION INSTRUCTIONS

The AD121R series of Socket Mount Ampere Demand Meters are designed to replace socket mount thermal ammeters. The stable, accurate, digitally calibrated (no mechanical adjustments) circuitry requires no calibration under normal usage, and provides high resolution data to accurately monitor a system. When used in a simple front panel only mode, the Minimum and Maximum can be displayed. When used with the FREE DEMICOMM interface software, your portable computer can download one minute resolution timestamped data, including 13 months of timestamped Minimums and Maximums. For more information see the DEMICOMM I Interface Software User's Guide.

## 1. Mechanical Requirements

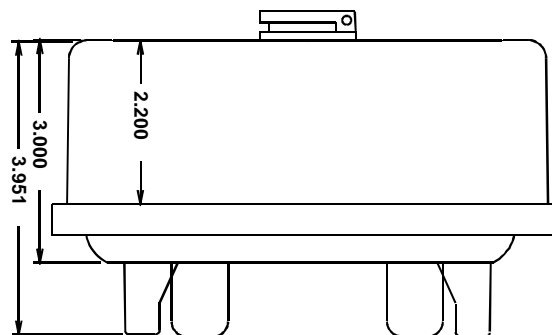
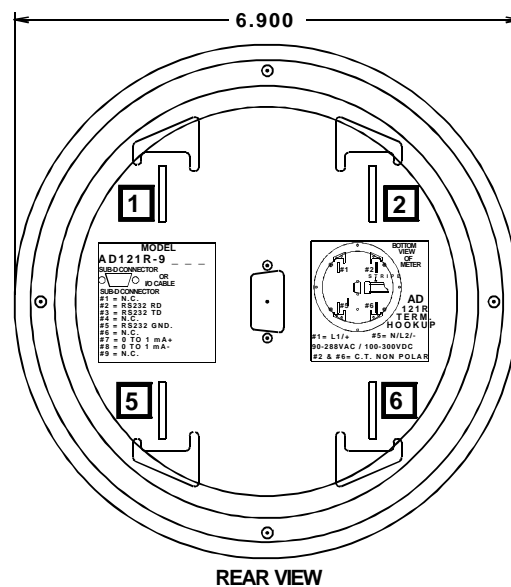
a. The meter is designed to fit into a standard meter socket.

## 2. Wiring Requirements

a. The power for operation can be either AC or DC voltage without making any changes to the meter. The standard power input voltage ranges are 90 to 290 Vac or 100 to 300 Vdc. Other DC supplies are available. The power consumption is about 2 VA. Consult the factory for more information. The socket should be wired so that the power source connects to terminals #1 and #5 on the meter. Polarity is not required.

b. The standard AC current input range is 0 to 5 Amps. Other input current ranges are available. The socket should be wired with the CT wires to terminals #2 and #6. Polarity is not required. All current input ranges have a 50% over-range ability. This means that a 5 Amp input meter will read correctly up to 7.5 Amps.

c. No batteries are used in this meter. Backup power for the Real Time Clock is stored on a very large valued capacitor inside the meter. The Clock will run for several weeks from a fully charged capacitor.



Up to 8 hours of normal operation is required to fully charge the capacitor. A 1 hour charge will keep the correct time for a day.

d. RS-232 communications is standard on all AD121R meters. The meter has a small stainless steel cover on the rear which protects the communications/SCADA output connector. A 12 inch interface cable is provided with each meter. See the DEMICOMM Software Interface Users Guide for installation instructions. A Null Modem cable is required to connect a computer to the rear

communications port. An optional front panel communications port is available which requires a special cable C9-J from the factory.

e. An optional analog output is available. When ordered with the meter, the output is available on pins 7 and 8 of the included communications and interface cable.

### 3. Setup And Operating Procedures For Front Panel Operation

The AD121R can be used as a stand-alone meter operated from the front panel only, or it can be interfaced to a computer using free powerful DOS interface software available upon request. The meter can be set up and monitored by a computer on a real time basis or accessed with a portable computer to setup or download stored information when convenient.

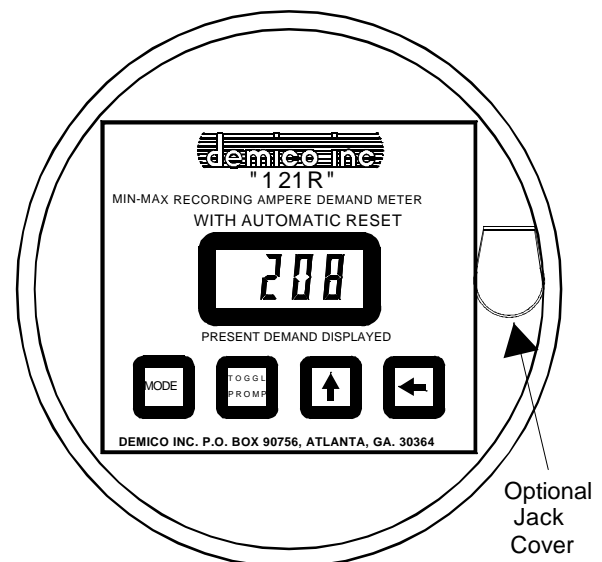
The meter has 4 sealed front panel switches which can be used to set up the meter and read the stored data available from the front panel display. All other data can be read only by a computer. In normal operation, the display shows the present logarithmic average Amperage based on the time constant selected (Ampere Demand). The meter will automatically return to normal operation from any display mode by stepping through the remaining display modes starting 60 seconds after pressing the last front panel switch. The normal operation of the meter continues to operate in the background while in any display mode.

The four front panel pushbuttons control the modes and setup. Each display mode has a corresponding alphanumeric prompt, which can be displayed at any time by pressing the "TOGGLE PROMPT" pushbutton. Pressing "TOGGLE PROMPT" while in normal operation will display a "0-A" for Display Mode "0" and Average Demand.

#### Front Panel Setup Functions

1. Press "MODE" one time and the meter momentarily displays "1-In" for Display Mode "1" and Instantaneous Amperage. Then the value of the present Instantaneous Amperage appears.

2. Press "MODE" one time and the meter momentarily displays "2-Pd" for Display Mode "2" and Peak demand. Then the value of the Peak Demand since the last reset appears. Press  $\uparrow$  once and the meter will display "L-Pd" (Last Peak demand) momentarily and then the Peak demand value before the last reset will appear.



3. Press "MODE" again while in Display Mode "2" and the meter momentarily displays "3-Ld" for Display Mode "3" and Lowest demand. Then the Lowest Demand value since the last reset appears. Press  $\uparrow$  once and the meter will display "L-Ld" (Last Lowest demand) momentarily and the Lowest Demand value before the last reset will appear.

4. Press "MODE" again while in mode 3 and the meter momentarily displays "4-rE" for Display Mode "4" and rEset. If the meter is set up through the computer software for automatic reset only, the meter cannot be reset from the front panel. When front panel reset is enabled, press  $\leftarrow$  to reset the meter. After the meter is reset, "donE" appears momentarily before returning to Display Mode "0". The Reset mode has a second function that allows the "set up parameters" and the "reset" function to be locked so that they can be displayed but not inadvertently changed. To lock or unlock these parameters, press and hold  $\uparrow$  and then press "MODE". The display returns to Display Mode "0" immediately but with the Front Panel Lock enabled. This function can be reversed by repeating the operation.

5. Press "MODE" again while in Display Mode "4" and the meter momentarily displays "5-Sc" for Display Mode "5" and Scale. Then the present C.T. Scale appears. At this time the C.T. scale can be changed by pressing  $\leftarrow$  to select the digit to change. The selection is made by pressing  $\leftarrow$  and observing the decimal points move as the switch is pressed. The right digit is selected when the decimal is to the left

of the digit, the two center digits are each selected when there is a decimal on each side of a digit and the left digit is selected when the decimal is to the right of the digit. When the digit you wish to change is selected, press  $\uparrow$  until the desired number is present. Press "MODE" to store the new scale and display the next mode.

6. Press "MODE" again while in Display Mode "5" and the meter momentarily displays "6-Co" for Display Mode "6" and Time Constant. Then the present Time Constant appears, and can be changed in the same manner as outlined in #5.

7. Press "MODE" again while in Display Mode "6" and the meter momentarily displays "7-nu" for Display Mode "7" and Meter Identification number which is assigned by the owner and can be used for identifying data downloaded through a computer or from manual front panel readings. Then the present Meter Number appears, and can be changed in the same manner as outlined in #6.

8. Press "MODE" again while in Display Mode "7" and the meter momentarily displays "8-CL" for Display Mode "8" and CLock. Then the present 24 hour clock setting (hh:mm) appears, and can be changed in the same manner as outlined in #6.

8. Press "MODE" again while in Display Mode "7" and the meter momentarily displays "8-CL" for Display Mode "8" and CLock. Then the present 24 hour clock setting (hh:mm) appears, and can be changed in the same manner as outlined in #6.

9. Press the mode switch again while in Display Mode "8" and the meter momentarily displays "9-dA" for Display Mode "9" and dAte. Then the present date (mmdd) appears, and can be changed in the same manner as outlined in #6.

Pressing "MODE" again returns to Display Mode "0".