

## FEATURES

- **Light switch size module displays 6 functions: Battery percent remaining, battery voltage, solar voltage, solar charge Amps, solar Amp hours, and charging status.**
- **Surface cutout or electrical box mounting.**
- **Connects with RJ-45 jack network cable to remote mounted charge controller.**
- **Operates on 12V or 24VDC battery systems.**
- **Back-lit LCD for reading in dim locations.**

## DESCRIPTION & OPERATION

The SEDM6-40 display module serves as a remote digital readout for the PVCM40D-SE2 and the PVCM40D-MPT charge controllers, the displays units and controllers ARE NOT interchangeable. The PVCM40D-SE2 charge controller contains an internal 0.0025 Ohm solar current shunt, RJ-45 display jack and associated internal wiring to provide power and signals to the SEDM6-40 display unit through a standard computer network patch cable which plugs into the RJ-45 jack on the back of the SEDM. If the wrong configuration network cable, such as the crossover type, is used then the error LED on the back of the SEDM6-40 will light indicating that the proper cable needs to be plugged in for the display to work properly.

The SEDM6-40's normal display indication is battery percent remaining and its associated LED. The select button allows the user to turn on the display's backlight, advance to the next display setting, reset the solar Amp hour accumulator, force the PVCM40D-SE2 into a charge routine to top off the battery voltage, lock display or current setting, or activate scroll mode. The SEDM6-40 will automatically switch back to the battery percent remaining display setting after 4 minutes unless the display setting lock is activated.

The backlight will come on for 15 seconds any time the select button is pushed and will stay on continuously in scroll mode.

When the charging status LED is lit green, the user can scroll down to the charging status position. The user can force the charge controller to top off the battery voltage, provided there is sufficient PV voltage to do so. By pressing the select button and holding, it will cause the display to blink the 'n\_c' one time telling the controller to go into charge mode. The LED color changes to red; then release the select button. The display will then alternate between solar charge Amps and battery voltage, switching every 10 seconds, (backlight will be on during the charging cycle), until the charge cycle is complete, at which time the display then returns to battery percent remaining. You can exit display cycle by pressing the select button.



## SPECIFICATIONS

SIZE:	2.75 x 4.5 x .75 inches, 3 ounces
MOUNTING:	Single gang electric box or surface mount
POWER:	12 to 24VDC from PVCM40D-SE2 or PVCM40D-MPT
CURRENT DRAW:	15 mA normal mode 35 mA with backlight on
CONNECTION:	RJ-45 jack to T568A or T568B Network Cat-5 patch cable
CONTROL:	Single select/ reset button
DISPLAY:	3 digit LCD to 999 or 99.9 with decimal 0.35 inch character height
BATTERY PERCENT DISPLAY:	12.8V = 100%, 11.8V = 0%, 12V system 25.6V = 100%, 23.6V = 0%, 24V system
LOW BATTERY VOLTAGE:	Detects @ 11.0V & 22.0V for 12V, 24V systems
AMP HOURS:	Displays 0 to 999 accumulated
TEMPERATURE:	0 to 50° C

## TECHNICAL SUPPORT

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**INSTALLATION INSTRUCTIONS**

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1. Complete the installation and test the operation of the PVC40D-SE2 charge control module.
2. Plug in the network cable into both the PVC40D-SE2 charge controller and SEDM6-Amp display module. Verify that all the readings work properly. Calibrate the battery voltage & solar Panel voltage readings by first measuring the battery voltage & solar panel voltage with an accurate digital voltmeter. Adjust the SEDM6-Amp's battery voltage reading to match by adjusting the (P2) potentiometer (less than 1/4 turn), on the back of the SEDM6-40 module. Adjust the SEDM6-Amp's solar panel voltage reading to match by adjusting the (P4) potentiometer (less than 1/4 turn), on the back of the SEDM6-40 module. (See diagram to the right.) Unplug the network cable on both ends.
3. Determine the mounting method to be used, surface-cutout or single gang electrical box ring.
4. For surface-cutout mounting, place the template over the desired mounting location and mark through the template the two mounting screw locations. Drill two pilot holes into the cabinet or mounting surface at the marked locations. Use a power drill to drive screws into the mounting surface before mounting the display module. Back out the screws, cut-out the template leaving the mounting screw tabs and attach the template with the screws to the mounting surface. Draw around the template on the mounting surface marking through the template around the mounting screw tabs. Carefully cut out the marked area using a saber saw or router leaving the mounting screw tabs.
5. Plug the network cable into the RJ-45 jack, after pulling it through the cutout hole. Insert the screws through the front of the module and into the holes and tighten by hand with a screwdriver. **USING A POWER DRILL TO DRIVE IN THE SCREWS THROUGH THE SEDM6-40 MODULE WILL VOID THE WARRANTY BY DAMAGING THE SEDM6-40 MODULE!!!**
6. For single gang electrical box mounting, mount the box securely and install conduit (at least 3/4 in. EMT) as desired. Route or pull the display end of the network cable into the electrical box being careful not to damage the RJ-45 plug. Plug the network cable into the back of the SEDM6-40 module and mount the module with 6-32 screws into the tabs of the single gang box. Hand tighten the screws to avoid damaging the SEDM6-40 module.

Now plug the charge controller end of the network cable into its RJ-45 jack and verify that the display is working properly. Use grease or silicone to cover the controller side of the network cable plug to avoid corrosion and fill the end of conduit.

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**USER INSTRUCTIONS**

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1. The power and signals to the SEDM6-40 display are supplied through the CAT-5 network cable connecting the SEDM6-40 to a PVC40D-SE2 charge controller.
2. The SEDM6-40 will normally revert back to displaying the continuous battery percent remaining after approximately 4 minutes from any other reading.
3. Select button operation:
  - a. Tapping or pressing the select button activates the backlight for 15 seconds. Pressing the select button to advance, resets the 15 second timer.
  - b. Pressing for 1 sec. then releasing the button advances to the next reading.
  - c. From the battery voltage display only, pressing and holding the button will advance the display automatically through each of the readings.
    - 1) If the button is released before returning to the battery voltage display, the reading will remain in that position until display times out (4 min).
    - 2) If the button is held through all readings then released after the battery voltage display, the SEDM6-40 will enter the scroll mode, advancing to the next reading every 3 seconds, indefinitely.
    - 3) Tapping the button exits the scroll mode.
    - 4) A low battery voltage condition will also exit the scroll mode.
  - d. Display lock mode is available for solar charge Amps and battery %.
    - 1) To lock display from timing out and reverting to battery % remaining, advance display to desired position then press and hold the button until the display flashes (approximately 3 seconds).
    - 2) Release button when the display stops flashing, it will remain indefinitely in that reading.
    - 3) Tapping the button while the display is flashing prevents entering the lock mode.
    - 4) Advancing to the next reading (see par. 3b) cancels the lock mode.
    - 5) Low battery voltage also cancels the lock mode.

**USER INSTRUCTIONS CONTINUED**

- e. Resetting the solar accumulated Amp hour reading to zero.
- 1) Pressing and holding the button for approximately 6 seconds will reset the display value. The display starts flashing after 3 seconds, the reading goes to zero after 6 seconds and the display stops flashing.
  - 2) Releasing the button while the display is flashing cancels the reset. The display will stop flashing, retain its current value after several seconds.
- f. Battery voltage top off - advance to charging status, display will indicate 'n\_c'.
- 1) Press and hold the select button the display will flash 'n\_c' one time, telling the charge controller to enter the charge routine. When controller enters charge mode the displays green status LED turns red. When the button is released, the display will change to solar charge Amps and shows the charging current for 10 seconds, then to battery voltage showing the battery voltage, then it alternates between them until it exits the charge routing or the select button is pressed.
4. Low battery voltage will cancel any user selections. The user can advance to any reading, but it will automatically return to the flashing low battery voltage display after 5 seconds.

**TEMPLATE FOR THE SEDM6-40**