



CORROSION MITIGATION INSTRUMENTATION  
2828 FM 758, NEW BRAUNFELS, TX 78130 TEL: (830) 253-5621

## PRODUCT INSTRUCTIONS

### MODEL CPV- 4 VOLTMETER

**IMPORTANT NOTE: Do not use this instrument in an explosive environment.**

The Model CPV-4 Digital Cathodic Protection Voltmeter is used for measuring D.C. potentials between a reference electrode and a structure.

#### 1. UNPACKING

Check all components against packing list. If damage has occurred in shipment, file a claim with the carrier immediately. If it is necessary to contact your supplier or the manufacturer concerning damaged or missing items, be sure to include all the information, such as serial number, purchase order number, and invoice number. This will assure you of obtaining proper and expeditious service.

#### 2. PREPARATION OF HALF-CELL

Please note that in most cases the half-cell is shipped dry, and must be properly charged with distilled water before operation.

#### 3. OPERATION WITH HALF-CELL ELECTRODE ATTACHED

- A. Remove protective vinyl cover from end of half-cell electrode.
- B. Place ceramic end of half-cell in contact with moist earth.
- C. Connect test lead from negative terminal on instrument to the structure.
- D. Observe and record meter reading. Note: No switch to push for taking reading once the voltmeter has been turned on.

#### 4. DIFFERENCES BETWEEN METHODS OF CONNECTION

The Model CPV-4 has a connection for the half-cell to screw into the back of the voltmeter. When using this option, the half-cell is connected to the Positive (+) side of the voltmeter. A test lead is then connected between the Negative (-) post of the voltmeter and the structure.

This setup is used by many companies and technicians, as a "good" read, for instance 0.85v, is displayed as a positive number. Many companies and technicians like to use positive numbers in recording reads. Also, an analog meter may not display a negative reading, so companies or technicians who have both digital and analog meters have standardized using this method.

However, there are some groups that teach a different connection method. NACE International and Peabody's Control of Pipeline Corrosion, for example, both suggest connecting the Negative (-) terminal to the half-cell, and the Positive (+) to the structure. This would then change the polarity of the reading, so that the same reading as given in the previous example would then be displayed as -0.85v.

To connect the Model CPV-4 CP Voltmeter using the NACE / Peabody method, do not screw the half-cell into the voltmeter. Use both lead cables provided, connecting the Red (+) cable between the structure and the Positive (+) terminal on the voltmeter, and the Black (-) cable between the half cell and the Negative (-) terminal on the voltmeter.

Web: [www.tinker-rasor.com](http://www.tinker-rasor.com)

E-mail: [Info@tinker-rasor.com](mailto:Info@tinker-rasor.com)

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### 5. OPERATION WITHOUT HALF-CELL ELECTRODE

Use same as any standard voltmeter for measuring D.C. potentials.

### 6. BATTERY TEST AND REPLACEMENT

Battery has a shelf-life, and needs replacement when the display shows LOW BATTERY. (On older models numerals begin to flash on and off)

See photo below for battery replacement.

- Remove the four screws on the front panel.
- Remove the front panel, be mindful of the wires connecting the front panel to the chassis.
- Replace the 9 volt battery with equivalent. T&R #010-007.
- Reverse the steps to return the instrument back to operational status.



### 7. WARRANTY

Warranty is on workmanship and material for 90 days from date of purchase. Warranty does not cover transportation or damages beyond normal wear and tear.

### 8. NON-WARRANTY REPAIR POLICY

Tinker & Rasor will repair any repairable past-warranty Model CPV-4 (instrument only) for a charge not to exceed 50% of current list price for a period of three years from date of sale.



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### 9. SHIPPING INSTRUCTIONS

All instruments being returned for repair should be sent PREPAID to either address below:

Ship Via Courier (UPS, FedEx, DHL, etc)

Tinker & Rasor  
ATTN: Repairs  
2828 FM 758  
New Braunfels, TX 78130

Please include the following when sending in a repair:

- The nature of the problem with the instrument.
- Purchase order number use when the instrument was bought.
- Serial number of the instrument
- Your return delivery address. Where you want the instrument sent back to.
- Contact person to speak to authorize any repairs
- Contact person's phone number, and fax number if needed.

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