



## Model UC-BDG – Underground CP Coupon

The Model UC-BDG Underground Cathodic Protection Coupon is designed to minimize IR-Drop error in measurements made with CP current on. With this unit the amount of IR-Drop error included in a current-on measurement is negligible and, therefore, can be ignored in routine measurements. Since many factors contribute to the magnitude of IR-Drop error at any particular site, it is recommended that each installation be evaluated separately.

### Installation

1. Remove the yellow protective label covering the steel coupons and place the coupon assembly in a position reasonably close to the structure being monitored. Be sure to orient the coupon assembly vertically with the protective plastic cap at the top. Place local soil around the coupon as backfill; make sure no rocks larger than a centimeter in diameter are within a centimeter of the metal plates. Tamp the backfill to ensure it is in good contact with the coupons.
2. Remove the protective plastic cap from the top of the coupon assembly. Cement a 2 inch PVC coupling to the top of the assembly using PVC cement. Cement a 2 inch PVC riser pipe to the coupling. Note: if a different size riser is preferred, replace the coupling with an appropriately sized PVC reducer.
3. Fill the riser with either screened local soil or a slurry consisting of 25% bentonite and 75% sand or fine fill. A reduced diameter reference electrode, such as an EDI Model US, can be placed in the riser pipe prior to filling. If this is done, then the riser fill must consist of the bentonite slurry.
4. Complete the installation by capping the top of the riser pipe as desired. One of the two wires from the coupon is to be connected to the structure through an interruptible shunt. The other coupon wire is connected to a meter when making potential measurements.



### Measurements

In order to minimize IR-Drop error in potential measurements, all such measurements must be made with either a permanent reference electrode contained in the riser pipe or a portable reference electrode contacting the riser fill. In some areas, it may be necessary to moisten the fill to increase its conductivity to an acceptable level. To determine the amount of IR-Drop error, first measure the potential of the coupon with the shunt wire connected to the structure. Then determine the IR-Drop error by disconnecting the shunt from the structure and note the instantaneous voltage drop. In most installations the instantaneous voltage drop (IR-Drop error) will be sufficiently small that it can be neglected in future measurements.

## WHEN QUALITY COUNTS ...

At EDI, we design all our products to meet the needs of the corrosion industry. Our products are easy to install and provide consistent quality and value to the purchaser.

Every reference electrode we produce has a unique serial number and is individually tested to ensure proper operation. The serial number and the QC test result are recorded on the yellow tag attached to the wire. Detach the tag and keep it with other installation records for this job.

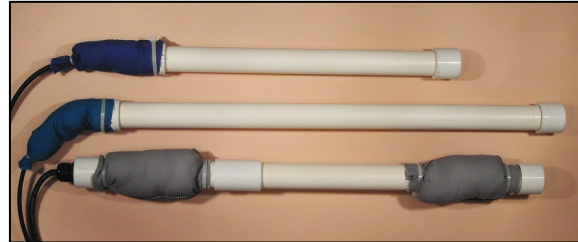
**Installation and usage instructions** for this product are on the other side of this page. Please review them and follow them carefully to ensure that you receive the long-term reliable performance we have designed into this product. Thank you for selecting products from

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**Reduced diameter reference electrodes for installation in test station risers.**



### **SlimLine™ Reduced Diameter Underground References**

- Featuring Cu/CuSO<sub>4</sub> or Ag/AgCl reference elements
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- Special dual element version available with packaged zinc plus a Cu/CuSO<sub>4</sub> or Ag/AgCl reference element
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Products ▶ U Series**

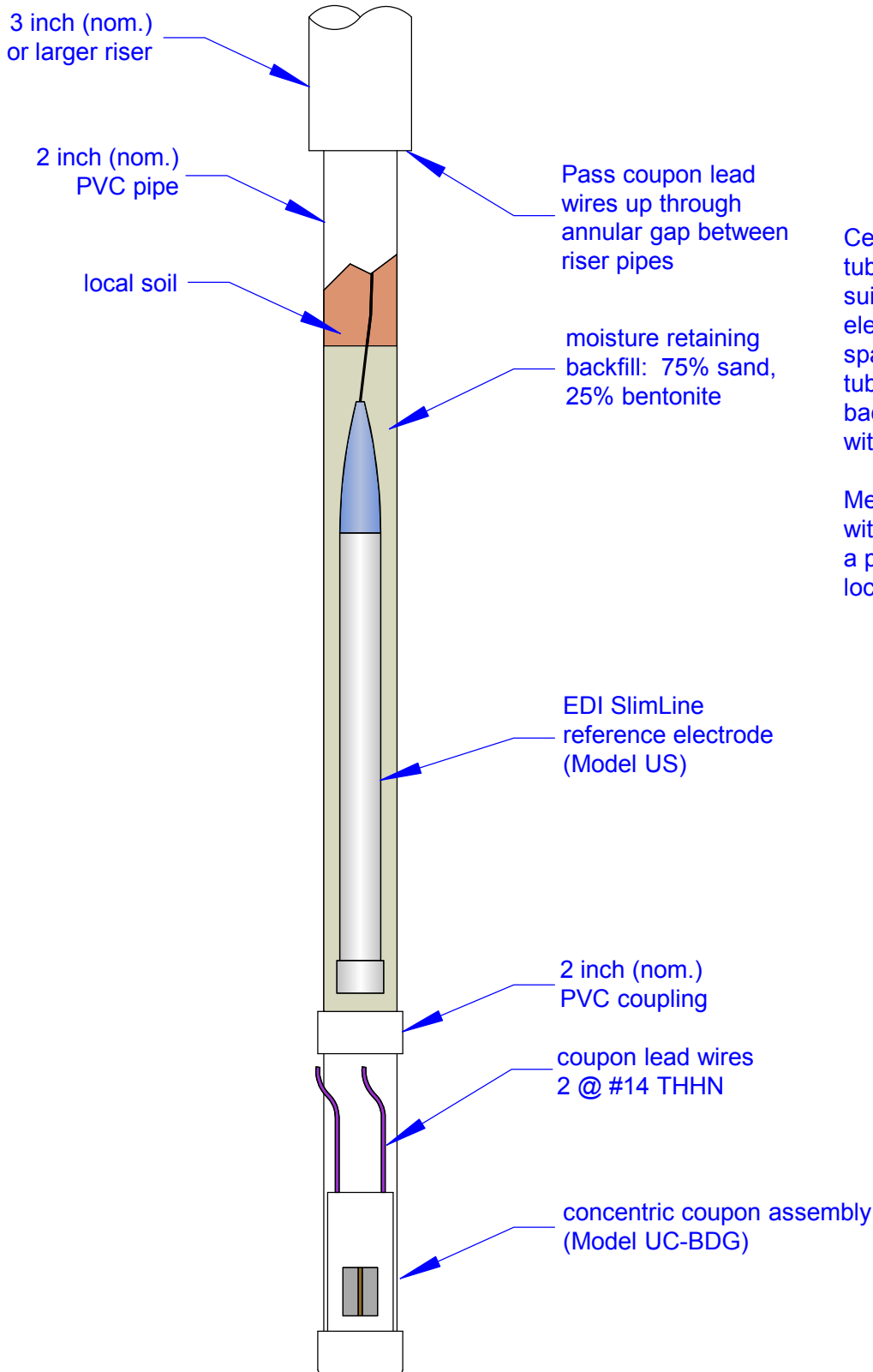
**Get a maintenance-free portable reference electrode from the leader in reference electrode technology.**



### **Model IT - Permanent Portable Reference Electrode**

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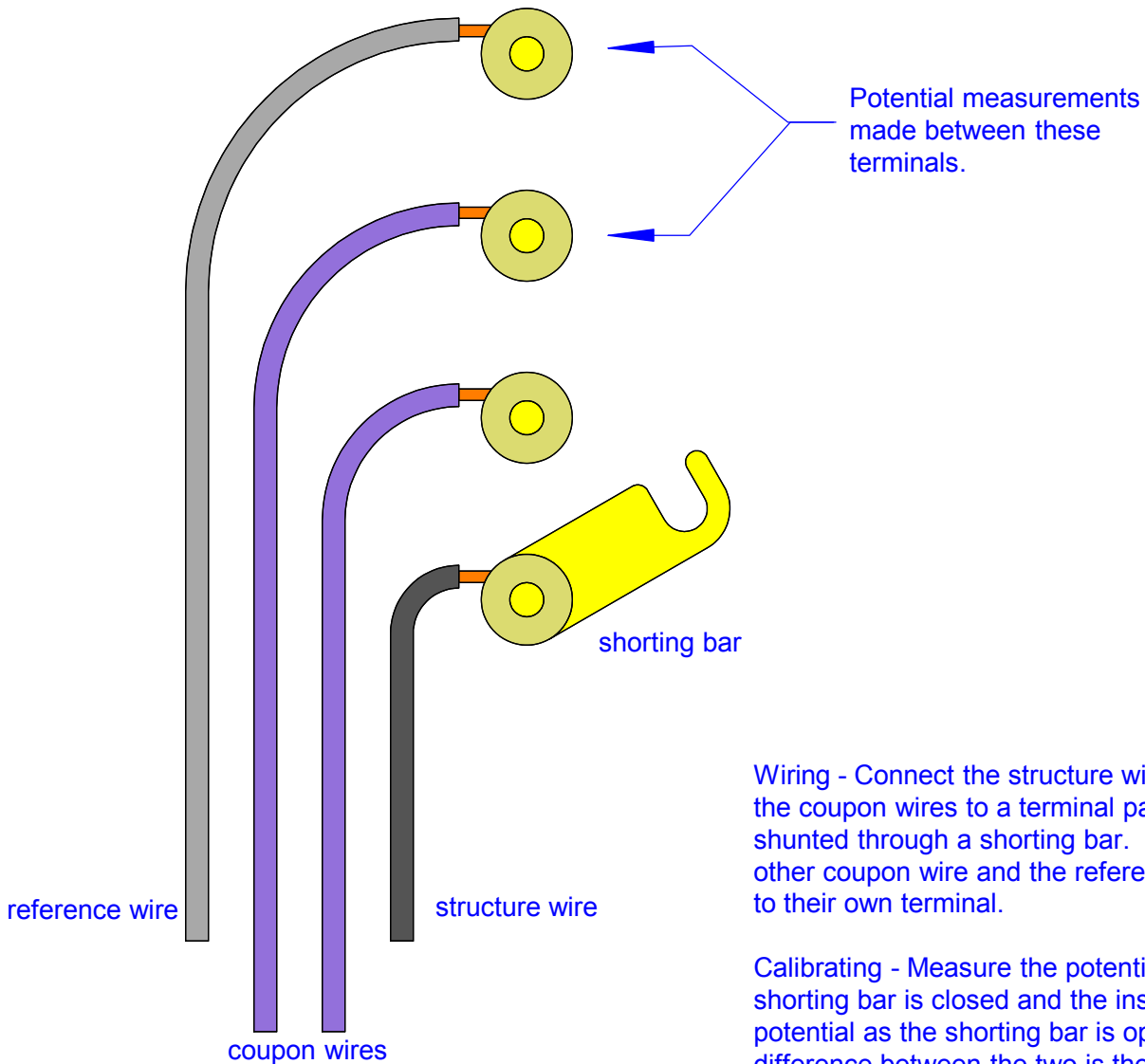
Cement a PVC coupling and riser tube to coupon housing. Place a suitable reduced diameter reference electrode inside the riser tube. Fill space between reference and riser tube with a moisture retaining backfill; wet with potable water. Top with screened local soil.

Measurements may be made either with the permanent reference or with a portable reference placed on the local soil in the riser tube.

## Installing a Permanent Reference in Coupon Riser

SCALE NONE

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Wiring - Connect the structure wire and one of the coupon wires to a terminal pair that can be shunted through a shunting bar. Connect the other coupon wire and the reference wire each to their own terminal.

Calibrating - Measure the potential when the shunting bar is closed and the instant-disconnect potential as the shunting bar is opened. The difference between the two is the offset potential; this should be recorded. This offset potential will usually be less than 10 millivolts.

Measurements - Measurements can be made with the shunting bar closed. In most cases, the offset potential will be sufficiently small that it can be neglected.

## Wiring connections - Concentric CP Coupon

SCALE NONE

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