

# Model UI - Instant Off Sensor



## Typical Applications

- Conduct instant off potential measurements on all underground structures including:
  - Pipelines
  - Aboveground storage tank bottoms
  - Underground storage tanks
- Measure relative changes in electrolyte resistivity.

## Features

- Can be used with both sacrificial and impressed current cathodic protection systems
- No interrupters needed at the rectifier
- Small sensor area will not distort cathodic protection current field

## Description

The **Model UI** probe is designed to come to the same potential as the steel used for buried structures such as pipelines and tanks. An important feature of this sensor is that the exposed area of the probe is similar to that of a holiday in the coating on the structure. This prevents any distortion of the CP current field. Probes with a large exposed area or separate coupons electrically tied to the structure require significant amounts of current to polarize them to the structure potential. In the case of a sacrificial system where anode output is fixed by soil resistivity, this large current demand can adversely affect cathodic protection of the structure.

**Model UI** Instant Off Sensors are fitted to EDI underground references at time of manufacture. The reference should be installed 1 to 3 feet ( $\frac{1}{4}$  to 1 m) from the structure and surrounded with the same backfill that surrounds the structure. The probe should be pushed into the backfill so that it is within 6 inches (15 cm) of the reference. At the test station, a shorting bar is placed between the sensor terminal and the structure terminal. Normal potential readings are made between the reference and sensor terminals with the shorting bar connected. The instant off potential is measured between the reference and sensor terminals as the shorting bar is disconnected.

## electrochemical devices, inc.

**Sales office:** P.O. Box 355; Belmont, MA 02478-0003  
**Tel:** 617-484-9085      **Fax:** 617-484-3923  
**Main office:** P.O. Box 31; Albion, RI 02802-0031  
**Tel:** 401-333-6112      **Fax:** 401-333-9724

*U Series*  
*Underground*  
*Reference*  
*Electrodes*



Model UI Instant Off Sensor is a 9/64in Ø x 2 in (3 mm Ø x 50 mm) steel rod permanently attached to the reference electrode. It can be added to either our standard bagged or reduced diameter underground reference electrodes. It is specified by the addition of the letter I to the first group of the model number (e.g. UL becomes ULI). Other dimensions and features of the reference electrode are as shown on the respective data sheets or drawings.

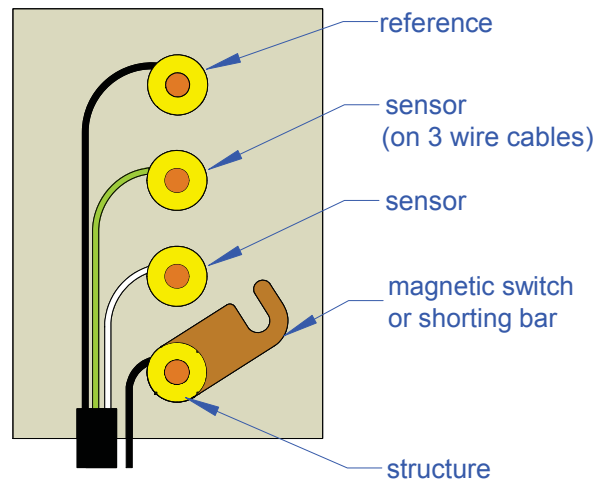
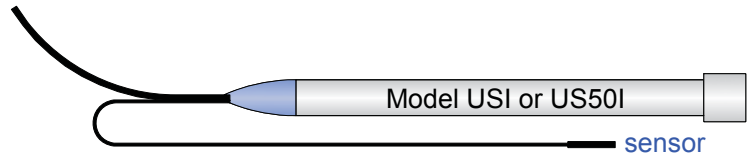
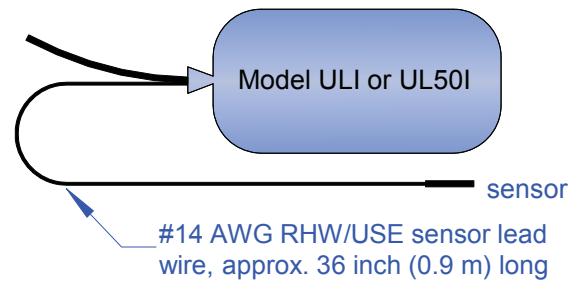
The electrode can be terminated with either a two wire cable, specified as 2Wnnn, or a three wire cable, specified as 3Wnnn. nnn refers to the cable length in feet. With both terminations, black wire connects to the reference and white wire connects to the sensor. Three wire cables provide a green wire also connected to the sensor. Conductors on both cables are #16 AWG.

Install by placing the reference electrode as directed; it should be surrounded by the same backfill as the structure. The sensor is pressed into undisturbed backfill within 6 inches (15 cm) of the cotton bag on the reference.

Make regular potential measurements between the reference and the sensor with the shorting bar closed. Make instant-disconnect measurements between the reference and the sensor as the shorting bar is opened.

This sensor can also be used as the working electrode for a three electrode linear polarization test, or as one electrode for semi-quantitative resistivity measurements on soil between the electrode and structure.

Note: A magnet operated switch such as EDI Model UI-MS can be used to simplify making instant-disconnect measurements.



## Instant Off Sensor

SCALE	NONE
DRAWN BY	FJA
DATE	04 AUG 2010
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**electrochemical devices, inc.**  
PO Box 31, Albion, RI 02802 401-333-6112

www.edi-cp.com  
info@edi-cp.com

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