

## 190787 Immersible Copper Sensor Instructions

### 1.0 OPERATION

The immersible copper sensor is designed for direct in-tank monitoring of electroless copper and microetch solutions. The sensor is compatible with WCU series controllers only; it is NOT compatible with Walchem W-10 series controllers. By monitoring the copper content directly in the solution, control lag and hydraulic problems are eliminated.

The sensor is constructed such that a constant path length exists between the fiber optic light guides. The ends of these light guides should NEVER be moved or adjusted. If moved, a two-point calibration is required. The solution between the guides absorbs light at specific wavelengths in proportion to the copper concentration. In order to avoid a shift in calibration caused by condensation, the sensor lid should NEVER be removed!

### 2.0 INSTALLATION

The immersible sensor is provided with a mounting plate and 20 feet of cable. Extension cable is available if the sensor cannot be placed within 20 feet of the controller. Maximum cable length is 80 feet.

While positioning of the sensor is not particularly sensitive to the tank layout, the following suggestions are given to aid installation:

- Do not place the sensor beside heaters; if solution flow stops, the polypropylene guard may melt.
- Do not immerse the entire sensor, or the cable.
- Place the sensor where the loads of parts will not strike it.
- Place the sensor in an area of good solution movement, but not directly in the path of any air agitation.
- Mount the sensor securely to the rim of the tank using the holes provided. If the tank is rimless, use a block to provide the support for the mounting plate.

Attach the cable's connector to the WCU controller. The connector is keyed, do not force!

#### *Calibration of a New Sensor*

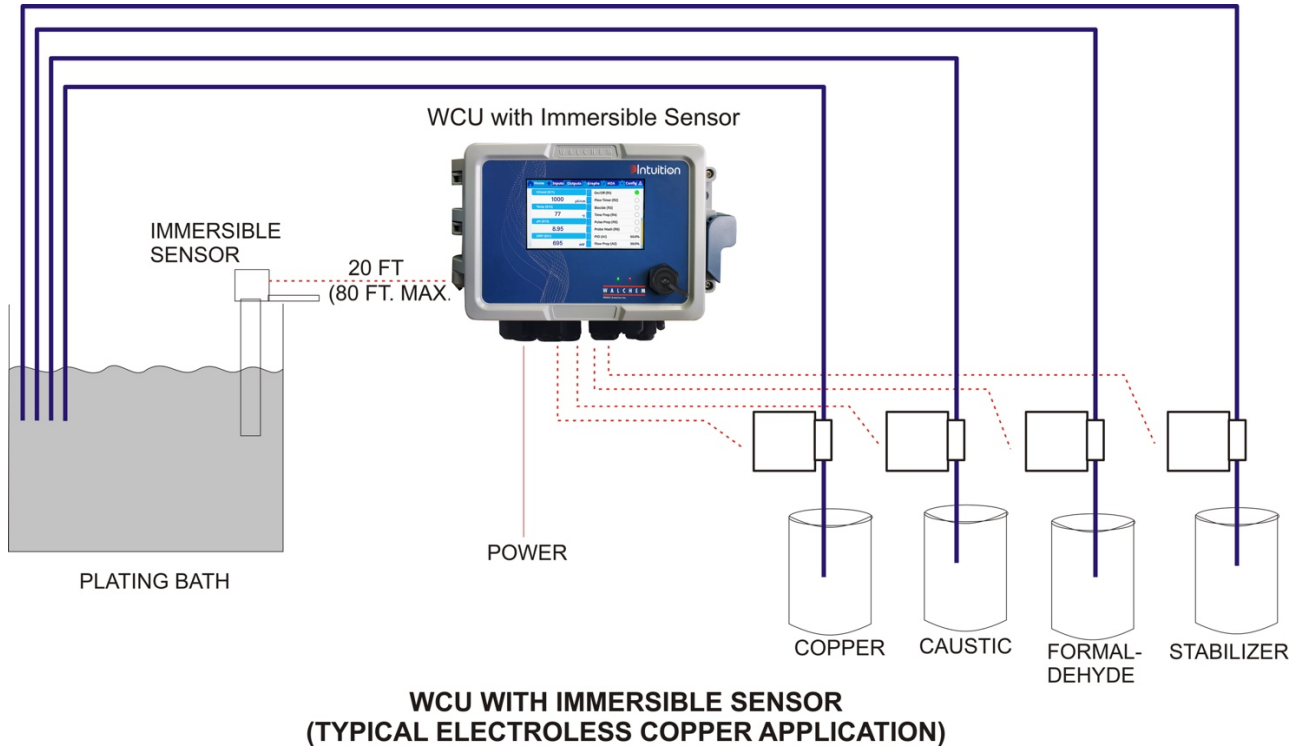
A two-point calibration in water and sample must be performed through the controller if the sensor is a replacement to the original or the original sensor was sent back to the factory for repair. This is called New Sensor Setup in WCU310 and 410 models, or Water/Sample Calibration in WCU600 models.

A one-point calibration (WCU310 or WCU410) or Calibration Offset (WCU600) should be sufficient for a sensor/controller combination has already been calibrated with both water and sample.

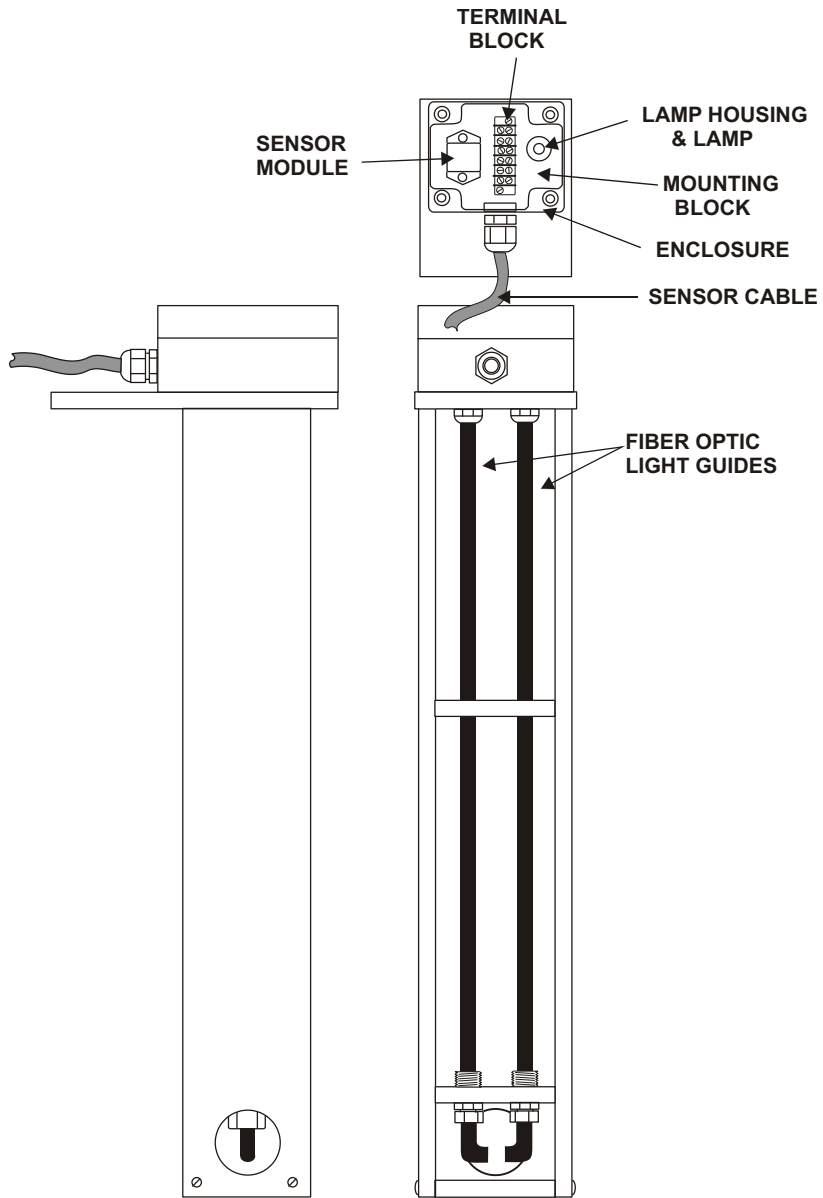
Refer to the WCU controller Instruction Manual for additional information.

### 3.0 MAINTENANCE

The sensor should be examined periodically for signs of plate-out or other coatings on the clear surfaces of the fiber optic light guides. To avoid scratching the sensitive surfaces, chemical cleaning is preferred over mechanical cleaning methods. Plate-out should be removed using nitric acid, or a persulfate or peroxide/sulfuric etch. Field repairs of the sensor should not be attempted. Call your distributor in order to arrange for factory service. Expedited service is available at no extra cost.



Note: To prevent calibration shifts due to condensation forming on the fiber optic light guides inside the cover of the sensor, DO NOT remove the sensor's cover for any reason!



P/N 190787 WCU310 Series Immersible Copper Sensor