

## INSTALLATION, OPERATION AND INSTRUCTION MANUAL

### **Level-Trac** Model LT-502 Water Level Indicator Probe Manifold

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Note: This document should be reviewed in its entirety prior to installation of equipment.

## 1. Operating Principle

The Quest-Tec Level-Trac LT-502 probe manifold is simple device to provide a means of remote water indication, when used with conductivity/resistivity based control unit. The probe manifold is designed to be piped in as a manifold on a steam drum or other pressure vessel.

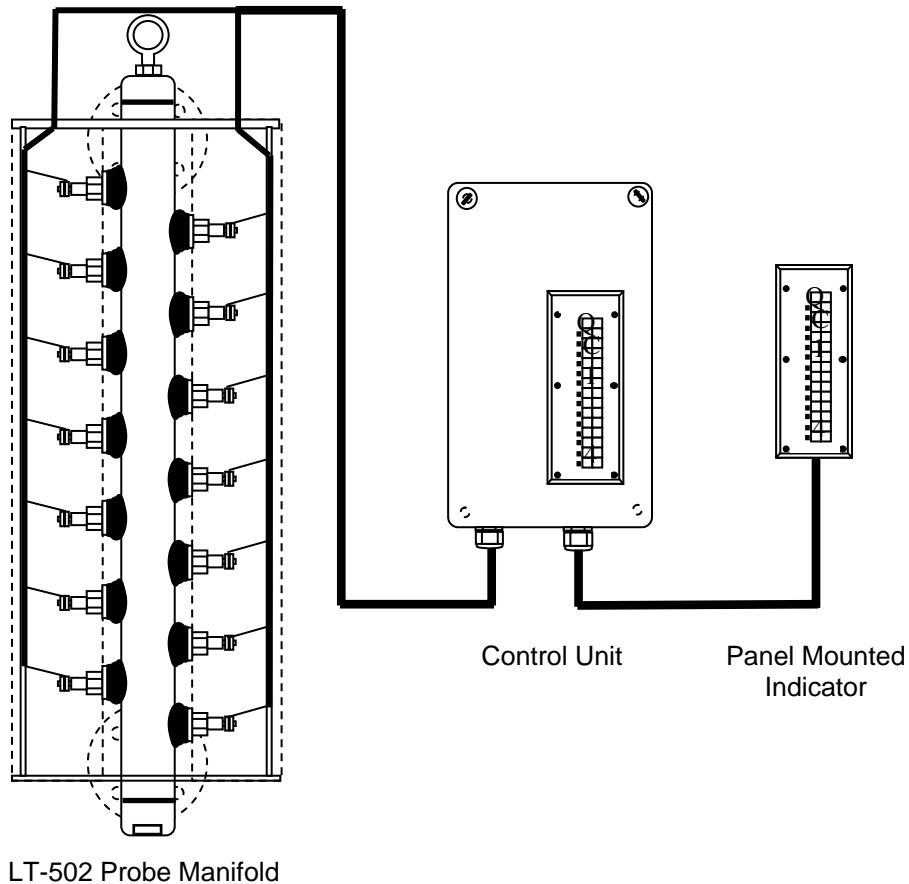


Figure 1.1 above shows a typical remote level indication system arrangement.

### 2.0 Model Numbering

The LT-502 probe manifold will have a suffix indicating the quantity of probes:

### 3.0 Storage & Handling

The LT-502 probe manifold must be handled with care to avoid damaging the probes, covers and branch connections. There is normally a suspension lug conveniently mounted at the top of the manifold. The LT-502 probe manifold should be stored indoors prior to installation.

### 4.0 Installation Considerations

Prior to installation, all relevant codes should be reviewed to ensure appropriate consideration. The most common applicable code is ASME Section 1, PG60.

## 5.0 Type 802 Probes

The LT-502 probe manifold uses the Level-Trac Type 802 probe. This probe style uses a metal-to-metal, ferrule type sealing surface. The probe manifold has a welded in fixture to hold these probes. Care must always be taken to ensure that the fitting threads are not damaged, and that the sealing surface is clean.

### 5.1 Probe Maintenance

Typical probe maintenance is limited to ensuring that the probes are clean. This can be accomplished by gently blowing down the manifold, or removal and re-installation. Individual installations will have site specific water quality, and this should be performed either "as needed" or per established maintenance cycle.

### 5.2 Probe Removal

Probe removal requires isolation and draining of the unit.

1. Prior to isolating the probe manifold, ensure that there will be no false alarm ramifications that could lead to expensive boiler trips.
2. Upon isolation of the probe manifold, drain all water out. Keep the drain open until probes have been re-installed.
3. Remove the probe covers.
4. Disconnect the probe wire(s).
5. Using a 1-1/16" deep socket, remove the probe.

### 5.3 Probe Installation

1. Clean the threads and sealing surface.
2. Clean and lubricate the threads on the probe capture nut and manifold fitting.
3. Thread the probe and tighten until the mating surfaces have made contact.
4. Using a wrench, tighten the probe 1/4 turn (40-45 ft-lbs). If it is suspected that the sealing faces have not met, due to debris on the sealing surface or threads, remove the probe, clean all surfaces and start over.
5. Re-attach probe wires.

### 5.4 Probe fixture Damage

Probe fixtures are generally unserviceable in the field without close communication with the factory. If there is thread or sealing surface damage, contact your local representative or the factory for instructions.

## 6.0 Bringing the Probe Manifold On-Line

Once the manifold has been installed, inspected and is deemed ready for service; use the following procedure for bringing on line.

1. With the water and steam isolation valves closed, crack open the drain valve.
2. Crack open the steam valve, to allow a gentle flow of steam to go through the manifold. This will preheat the manifold and help to prevent thermal shock.
3. After a few minutes, close the drain valve.
4. As the manifold comes to pressure, carefully observe each probe for steam leaks. (Note: As the thread lubricant heats up, the solvent will cook away, and may appear to be a steam leak. Careful observation may be required to discern the difference.) If any probes exhibit a steam leak, repeat the steps in 5.2 and 5.3 above. Any steam leaks must be dealt with immediately to avoid damaging the sealing surface.
5. Once all sealing surfaces and joints are confirmed to be intact, replace the probe covers and fully open the steam and water isolation valves