



## YARWAY OPERATING AND SAFETY INSTRUCTIONS

Before installation these instructions must be read fully and understood

### WARNING

*For safety reasons, it is important to take the following precautions before you start work on the remote level indicator:*

- 1. The lines that the water column is to be installed to must be depressurized, drained and vented before installing the water column.*
- 2. Handling and installation of the remote level indicator must be carried out by personnel trained in all aspects of installation and manual/mechanical handling techniques.*
- 3. Welding must be performed only by personnel qualified and certified to all applicable national and local codes.*
- 4. Before making any electrical connections, ensure that the power source to be used is isolated by use of the appropriate circuit breakers and/or switches.*  
*All wiring must be in accordance with applicable national and local codes by qualified personnel only. Failure to do so may result in property damage or severe personal injury.*

### STORAGE / PROTECTION

#### Storage

When Yarway electronic remote level indicators are to be stored for some time before being installed, storage should be in the original delivery crates with any waterproof lining and/or desiccant remaining in place. Storage should be off the ground in a clean, dry, indoor area. If storage is for a period exceeding six months the desiccant bags (if supplied) should be changed at this interval. If electronic remote level indicators are stored for more than 12 months they should be inspected by Yarway personnel before installation.

#### Protection

Yarway electronic remote level indicators are delivered with protection according to customer's specification or in accordance with the Quality Assurance Manual. To protect the equipment from damage, the equipment should be left in its original packaging until immediately before installation. If probes are shipped installed in the water column, the probe covers should be left installed on the column to prevent damage to the probes during column installation.

### INSTALLATION

The following steps should be followed for installation of the probes:

1. Ensure that the probe receptacle and probe compression nut threads and sealing surfaces are clean. The threads on the receptacle and probe compression nut should be lubricated with an anti-seize compound to prevent galling and lower the tightening torque on the threaded parts.
2. Insert the probe into the receptacle and tighten the compression nut by hand. With a wrench, further tighten the nut ¼ turn only. Subsequent connections will be made in a similar manner.
3. Make appropriate wiring connections following the wiring diagram found in the full manual.

### OPERATION

1. Inspect the water column to ensure that all the probes are installed and the associated wiring is correct. Wiring should be neatly routed and any contact between the high temperature water column body or the probe cover should be avoided.
2. Open the blowdown valve.
3. Crack open the steam block valve and warm up the water column for a period of 3 to 5 minutes
4. At the end of the warm-up period, close the blowdown valve and then fully open the steam valve.
5. The water connection block valve can now be opened, or alternately, if this valve is left closed, the water column will fill with condensate allowing the operating range to be verified.
6. The water block valve can then be fully opened.
7. Visually check all the probes for any sign of leaks. Replacement of the probe shields using the ¼" socket head cap screws will complete the commissioning of the water column.
8. Isolation and blowdown valves should be carefully selected and installed as outlined in the ASME Power Boiler Code, Section I. Yarway Welbond valves, Series 5600 are recommended.

9. During water column blowdown, isolation, or testing, some form of interlocking bypass of the high and low water control outputs may be required to avoid boiler tripping.

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## ROUTINE MAINTENANCE

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A specific maintenance program is difficult to detail but the following outlines the minimum required:

1. The water column should be blown down and visually inspected for leaks every 3 months.
2. The operating range of the device should be verified at this time by allowing the water column to fill with condensate.

Before servicing the probes, ensure that the water column is properly isolated from the system, all pressure has been relieved and the unit cooled to an acceptable level.

1. Loosen the probe compression nut approximately one turn and then free the probe to verify that all pressure has been relieved. The metal to metal sealing surface initially may cause the probe to stick, so carefully free the joint by tapping the probe on the metal body. Do not strike the ceramic insulator and do not use a wrench to turn the probe hex head bolts.
2. After the probe becomes free, loosen the nut fully and remove the probe.
3. Severe deposits on the probes indicate that inspection should be more frequent. A common household powdered cleaner may be used to clean the probe body and the insulator. After cleaning, the probes should be wiped off with a dry, clean cloth (do not immerse the probe in liquids). Probes that show any signs of damage, insulator cracking, or steam leaks must be replaced immediately. Do not attempt disassembly of the probe components.
4. The integrity of the probe can be checked by using an ohmmeter. Resistance measurement across the insulator of 5 M $\Omega$  or greater indicates the probe is performing satisfactorily. If the system is selected for detection of high conductivity water (greater than 25  $\mu$ S), a probe resistance measurement of 500 k $\Omega$  or greater can be considered satisfactory.
5. After the probes have been inspected, cleaned and tested, they can be installed following the installation procedure.

6. Do not leave an open receptacle on the pressure vessel or water column. If a probe is not immediately re-installed, the port should be plugged with a Swagelok plug #SS-810P, Yarway part number 964584-19, and tightened following the probe installation procedure.
7. The unit can now be placed in service by following the steps outlined in the start-up procedure (See Operation).

## SPARE PARTS

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Remote level indicators are identified by a unique serial number, which is stamped on the identification plate, located on the front of the control unit or on the side of the water column. This number should be referenced in respect to any after sales queries, spare parts, or repair enquiries/orders.

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