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**Technical Bulletin Series  
Magnetic Flow Meters****TBWFP – 004**

ISSUE: V5  
DATE: April 2025  
ECRO: 1674  
PAGES: 1

## REPLACEMENT OF FLOW TRANSMITTERS OR FLOW TUBES

### APPLICABLE PRODUCTS

Applies to all Aquamonix Flow Meter models including all 2020, 2030 & 2060 flow tubes (flow detectors), and existing Model I300 or I500 Flow Transmitters.

### BACKGROUND

Aquamonix flow meters are all “wet flow calibrated” as matched pairs (transmitter and flow tube) during manufacturing to provide the highest level of accuracy and reliability. All meters are fully wet flow tested and calibrated in our NATA flow calibration facility in Milperra NSW to meet an accuracy specification of typically better than  $\pm 1.0\%$  error. Meters are provided with a unique serial number and calibration certificate.

Long term field operations may necessitate the occasional changeover or replacement of either the electronics (eg I500 door assembly) or flow tubes (eg a Model 2030 End Insert Flow Tube). Whenever a new or replacement flow tube or electronics (I500 door assembly) is swapped into an existing site, the original (as built) accuracy of the metering system is maintained due to the full backward and cross compatibility of I500 Flow Transmitters across any existing Flow Tubes. The combined accuracy of the metering system will still be well within the maximum permissible error (MPE) stated in the new National Metering Standards,  $\pm 2.5\%$  in a test calibration facility or  $\pm 5\%$  in the field.

If new I500 doors are fitted to older flow tubes careful consideration is required to confirm that all unique calibration data from the old flow tube and/or transmitter are entered correctly as per the calibration label on the flow tube or calibration certificate. These configuration parameters are included with all flow tubes and should be checked as part of the meter/site validation procedure. A history of these changes should be recorded and maintained.

**The I500 Transmitter unit (I500 Door) are all electrically factory tested & configured and apart from the 3 Key Flow Tube Parameters below– they do not otherwise require any other user configuration or calibration.**

**The 3 x Key Parameters associated with each Flow Tube during Wet Flow calibration are:**

- **Flow Tube Diameter**
- **Flow Tube Zero**
- **Flow Tube Factor**

Providing the correct flow tube parameters are entered into the replacement I500 Transmitter – the site will fully meet all necessary requirements under AS4747 and Pattern Approval and deliver accuracy inside the required  $\pm 2.5\%$ .

**There are some basic electrical tests and more detailed in field verification tests that can be performed to ensure the reliability and accuracy of the installed metering system. These are generally provided by the asset owner, or meter installer, however Aquamonix technicians can also provide a field service whereby we can confirm the verification and setting on a field meter and provide a factory confirmation that the site is correctly configured and fit for purpose.**

**For further information, contact an Aquamonix Service Technician**