AQUAMONIX
Measure. Monitor. Master.

Head Office:
268 Milperra Road MILPERRA NSW 2214
ABN: 26 609 047 878
Ph: 1300 797 246
Web: www.aquamonix.com.au

Technical Bulletin Series
Magnetic Flow Meters

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AQUAMONIX FLOW METERS PIPEWORK REQUIREMENTS

APPLICABLE PRODUCTS

Applies to all Aquamonix flow tubes designed for installation in pipelines, specifically the 2020 series and the 2060 series.

BACKGROUND

Magnetic flow meters generally require a minimum straight run of pipework either side of the meter to provide reliable and accurate flow metering. The Aquamonix range of electromagnetic flow meters are purpose designed to provide accurate and repeatable results with a minimum of pipework requirements. This provides greater flexibility and cost effective installation options for designers and fabricators and provides opportunity for more effective retrofit of Aquamonix flow meters into existing pipework installations.

REQUIREMENTS

Installation of flow meters should also aim to as closely as possible match the internal diameter (ID) of the flow meter to the ID of the adjacent pipework. Where a slight mismatch or step change is necessary we provide the following guidance to ensure meters will deliver accurate and reliable results.

For all <u>non-urban</u> metering applications including all gravity or pumped irrigation outlets, bore and river pumping extractions operating under AS4747:
(Aiming to achieve accuracy better than ±2.5% in laboratory and ±5.0 % in the field)

- Upstream straight pipe run: 5 x equivalent pipe diameters
- Downstream straight pipe run: 3 x equivalent pipe diameters
- ID of flow meter to be no more than 10% greater than the ID of adjacent pipework
- ID of flow meter to be no less than 15% smaller than the ID of adjacent pipework

For <u>urban</u> metering, process industry or critical applications aiming to achieve < ±1% accuracy:

- Upstream straight pipe run: 10 x equivalent pipe diameters
- Downstream straight pipe run: 5 x equivalent pipe diameters
- ID of flow meter to be no more than 6% greater than the ID of adjacent pipework.
- ID of flow meter to be no less than 10% smaller than the ID of adjacent pipework.

NOTES:

- Upstream and downstream measurements are made from the centre of the Aquamonix flow meter (ie: the location of the flow measurement electrodes).
- For the Mann Pit or Murrumbidgee Dual Pit style model 2030 flow meters, independent NATA flow testing has confirmed that an upstream pipe run of 5 x dia and a downstream run of 0 (zero) is sufficient to achieve better than ±2.5% accuracy and hence meet AS4747 requirements.
- Other independent flow testing has confirmed that the above accuracy can be achieved with a wide range of pipework disturbances such as single or double check valves, 45° or 90° elbows, butterfly valve, check isolation valves, pipe blockages or gibbault style pipe clamps where these are located outside the above straight pipe runs.

Aquamonix reserves the right to change product designs and specifications without notice.