

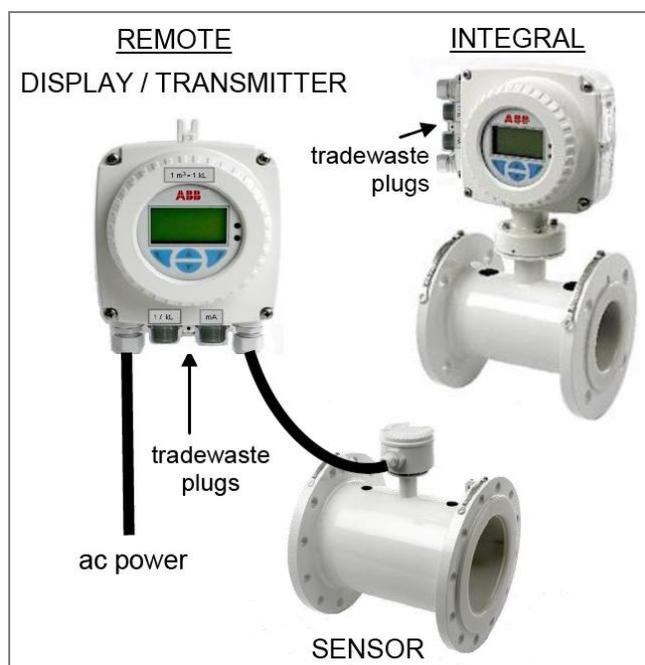
FMS-TW WATERMASTER™

Electromagnetic Tradewaste Flowmeters

Sizes: 40mm to 200mm

FEATURES

- Fitted with Sydney Water Tradewaste plugs.
- Unsurpassed accuracy to $\pm 0.2\%$
- Process temperature: - 6 to 70°C.
- Wide flow measurement range.
- Virtually maintenance free - no moving parts.
- Eliminates headlosses and need for filters.
- Handles wide range of aggressive liquids.
- New backlit graphical display, with process status messaging. Display can be rotated in 90° increments.
- remote version: 2-metre cable between display and sensor (can be longer on request); or new DC integral version.
- New octagonal sensor tube reduces sensitivity to flow profile disturbances. Empty pipe detection.
- Advanced Digital Signal Processing gives unsurpassed performance in harsh environments involving flow fluctuations.
- Robust construction for industrial use.
- Infrared configuration port.



With no moving parts and an obstruction-less bore, the Watermaster tradewaste flowmeter (wired, programmed, tested and supplied by ManuFlo) guarantees the highest level of performance, unaffected by specific gravity or viscosity variations, or the most contaminated of fluids, whilst maintaining a high degree of accuracy over a very wide flowrange.

A unique self-verifying concept has been implemented in the Watermaster, providing ultra-stable performance over time.

Your chosen ManuFlo Watermaster will be fully programmed, wired, calibrated and wet-tested on our internal flow test rig facility. When you choose your tradewaste flowmeter from ManuFlo, simplicity of installation is assured.

CALIBRATION OF TRADEWASTE MEASUREMENT FLOWMETER

i) Pre-delivery calibration

All flowmeters are calibrated at the ManuFlo factory, with pumped or gravity fed water, using a Water Board designed weir tank rating facility cross-referenced with a load cell (certified to NMI standard) and Magmaster flowmeter verification system.

ii) Field calibration

After the flowmeter has been installed, Sydney Water will require an on-site calibration check. The calibration of a tradewaste flowmeter should be checked once a year.



Order Codes		Size (mm)	MINIMUM Flowrate (Litres/minute) for accuracy of			MAXIMUM Flowrate (Litres/min) @ $\pm 0.2\%$ accuracy
Flowmeter	Optional PVC connection kit		$\pm 3\%^*$	$\pm 1\%$	$\pm 0.2\%$	
FMS40-TW	CK-PVC40	40	3.3	5.3	100	667
FMS50-TW	CK-PVC50	50	5.3	8.3	133	1050
FMS80-TW	CK-PVC80	80	13.3	21.7	267	2666
FMS100-TW	CK-PVC100	100	21.7	33.3	417	4167
FMS150-TW	CK-PVC150	150	53.3	83.0	1050	10500
FMS200-TW		200	83.0	133.0	1666	16667

* measures at lower flowrates, but at reduced accuracy.

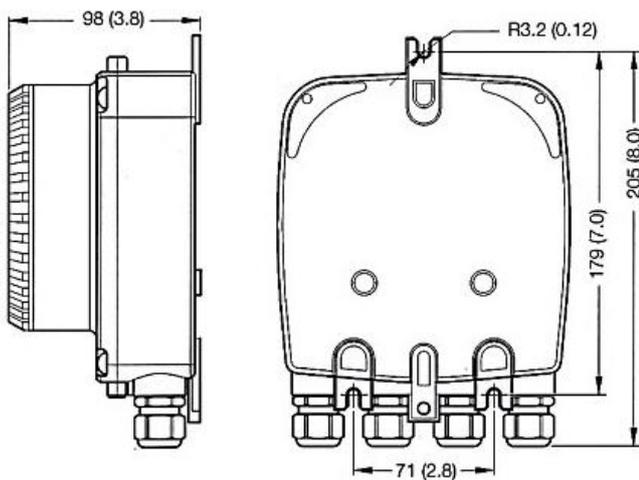
SPECIFICATIONS

FMS-TW Electromagnetic Flowmeter

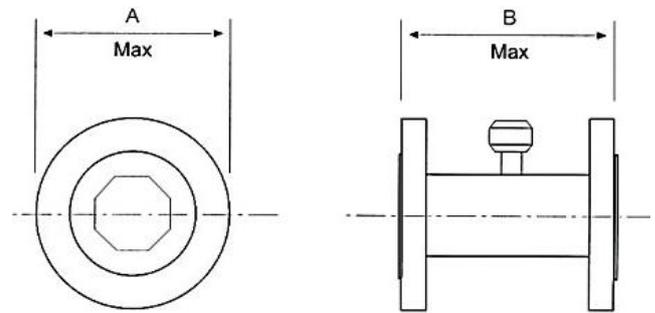
	Ambient Temp	Process Temp	Rating	Electrical Connections
Display/Transmitter	-20 to 60 °C		IP67	20mm plastic glands
Sensor	-20 to 70 °C	-6 to 70 °C	IP68 to 10m depth if terminal box fully-potted	20mm plastic glands

Display/Transmitter		Sensor	
Power supply (optionally)	85 to 265 vac @ < 7 VA 17 - 30 VDC @ ≤ 12 W (5.6 A switch-on current)	Liquid Conductivity	> 5 µS/cm
Accuracy	±0.2% of reading	Sensor cable	2m standard length (200m max length)
Total	Non-resetable. To 10 digits.	Flange type	40 & 50mm: AS2129 Table F. other sizes: AS4087 Class 16.
Cable to sensor	2-metres (up to 100m on request)	Pressure loss	< 0.25 bar (at max. flow)
Pulse Output Rating	30V @ 220mA, Open Collector, Galvanically isolated.	Lining material	Polypropylene
Pulse Output	Square wave, 5 KHz maximum, via 6-pin MIL-spec plug	Electrode material	Stainless Steel 316 L
Current Output	4 - 20 mA via 2-pin MIL-spec plug	Grounding Rings	Included
		Terminal Box	Polycarbonate
		Housing	Carbon Steel
		Flange	Carbon Steel
		Vibration Limits	Min: 5 Hz, Max: 150 Hz

DISPLAY DIMENSIONS



SENSOR DIMENSIONS



Pipesize		Length A*	Length B	Weight
mm	inches	mm	mm	kg
40	1.5"	150	200	11
50	2"	165	200	12
80	3"	200	200	15
100	4"	230	250	18
150	6"	280	300	31
200	8"	345	350	48

* Dimensions are approximate

Manufacturer's specification for minimum straight pipe lengths before/after sensor is 5x/2x pipe diameter, but Sydney Water preferred requirements are 15x/10x pipe diameter.



DISPLAY SETUP		Discharge	
		≥ 5 kL/day	< 5 kL/day
Display	Flowrate	Litres/second	
	Total	m ³ (i.e. kL)	Litres
Pulse output		1 pulse / kL	1 pulse / 100L

8.3

544

l/s
m³

The four keys below the display are used to navigate through the menus and to execute all system commands and selections.

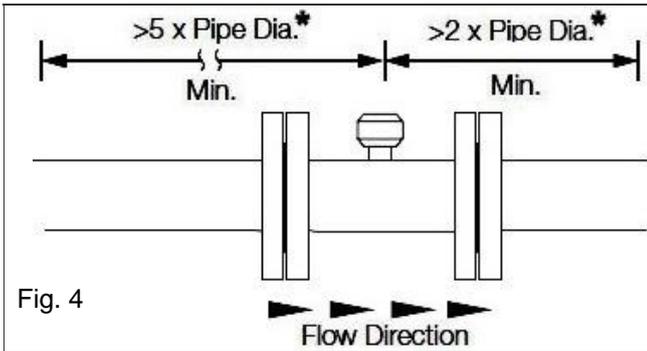


Fig. 4

*** Straight Pipe Requirements**
 Manufacturer's specification for minimum straight pipe lengths before/after sensor is 5x/2x pipe diameter,

but Sydney Water preferred requirements are 15x/10x pipe diameter
 e.g. a 50mm flowmeter requires at least 15x50mm= 750mm of straight 50mm Ø pipe upstream, and at least 10x50mm=500mm of straight 50mm Ø pipe downstream.

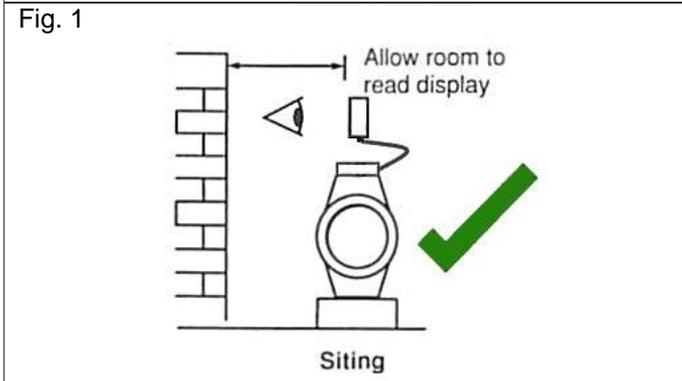


Fig. 1

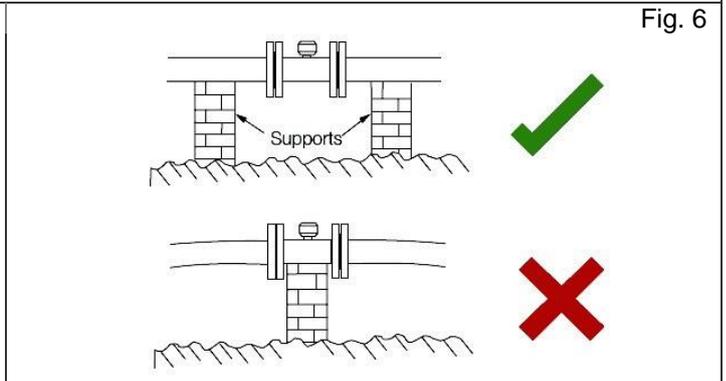


Fig. 6

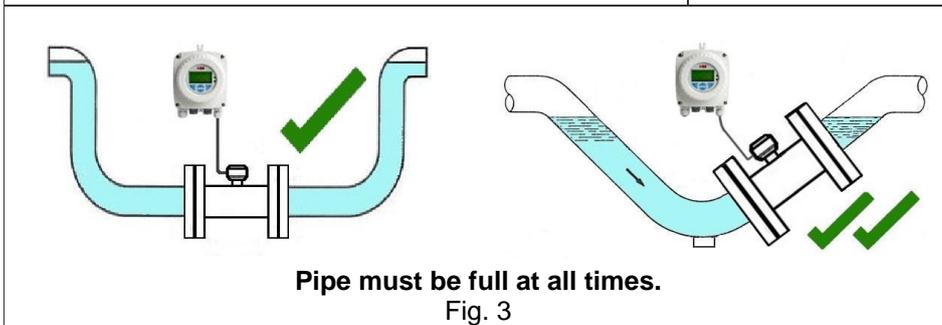


Fig. 3

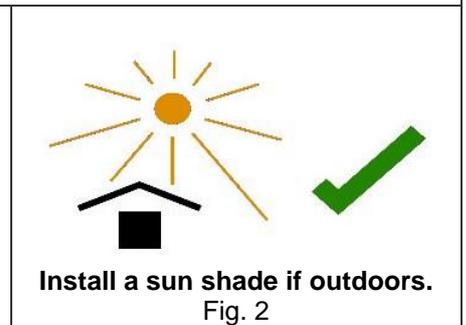


Fig. 2

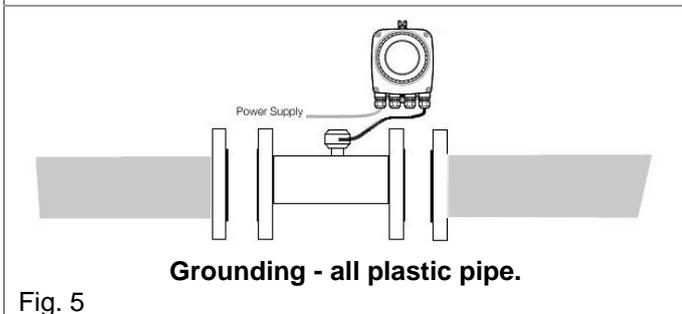
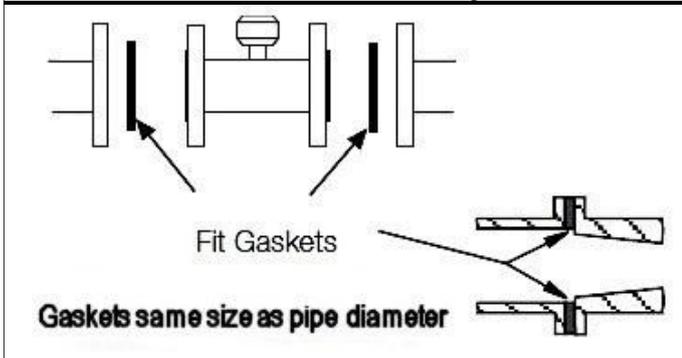
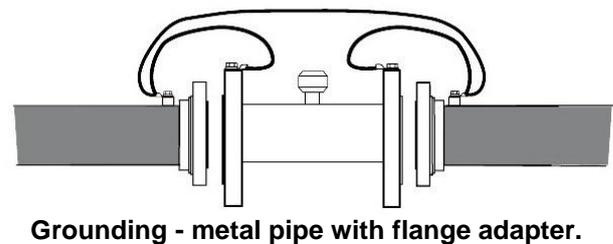
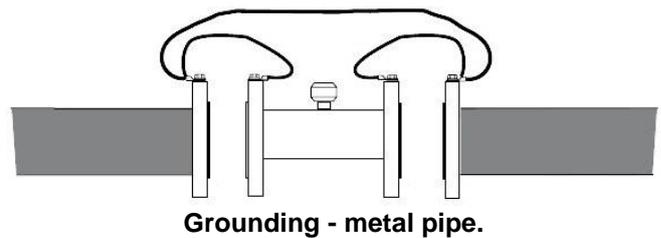


Fig. 5

- The sensor must not be connected to a ground spike.
- For bonding connections use $\geq 4 \text{ mm}^2$ (<10 AWG) cable.
- For 200mm pipesize, an earthing is recommended.



Note: detailed installation instructions are in the Manual provided with the flowmeter.

