

**Internal battery powered Electromagnetic flowmeters****FEATURES**

- Powered by 3-year internal Lithium battery with no external power supply required.
- Unsurpassed accuracy to  $\pm 0.5\%$
- Very wide flow range.
- Fully bi-directional operation.
- Virtually maintenance free, with no moving parts.
- Eliminates headlosses and need for filters.
- Handles many types of contaminated water.
- Robust construction for industrial use.
- Onboard multi-function displays with flowrate and Totaliser.
- Resettable Totaliser via (optional add-on) ME5-T-B counter.
- Integral or Remote (upto 250mm) wired display options with IP67 protection.
- Full Bore or Reduced Bore sensors.
- Pulse outputs.
- Measures liquids with conductivity  $> 50\mu\text{S/cm}$ .



The ABB AquaMaster™ electromagnetic flowmeter (wired, programmed, tested and supplied by ManuFlo) is capable of operating over a very wide flow range. It offers reference meter quality performance with  $\pm 0.5\%$  of reading, being ideal for measurement of contaminated water (where conventional mechanical meters would block) in remote applications. With no moving parts, and an obstruction-less bore, this type of flowmeter 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.

Application examples include use in Sewage Transfer, Tradewaste, Irrigation and Syphon applications and many other applications where a total, resettable total, or flowrate is required in areas where no external power supply is available.

AquaMaster™ is available in standard sizes from 25 to 250mm, with a hard-rubber-lined carbon steel sensing tube, and Stainless Steel 316L electrodes. Sensors are available in Full Bore for pumped applications, and in Reduced Bore for gravitational irrigation applications to capture lower flowrates. The IP67-rated LCD display is either integral head mounted to the sensor tube, or remote connected by a low voltage 2-metre signal cable. Power is by 2x 3.6V field-replaceable Lithium batteries (3 year operating life).

**Flowrate (Litres/minute) at Given Accuracy**

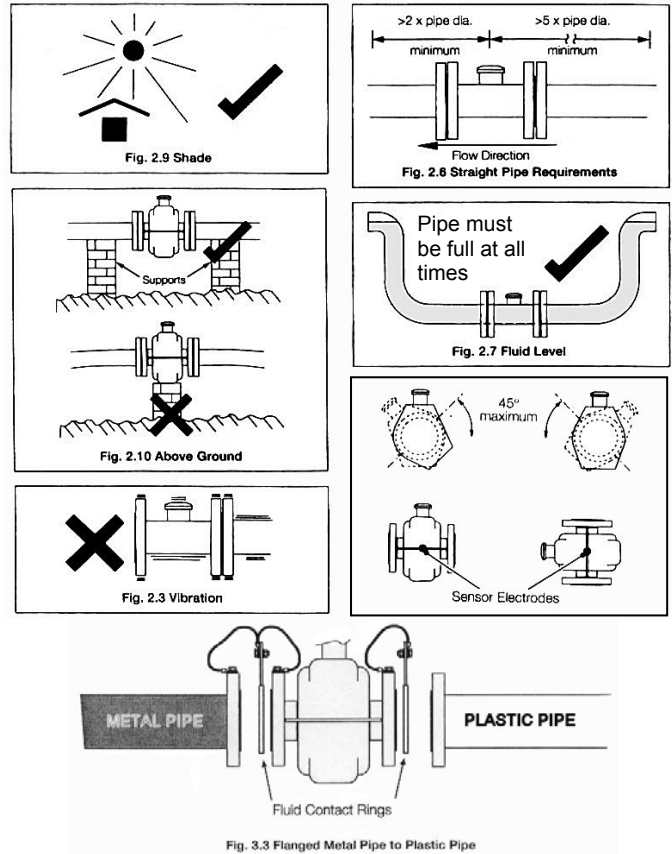
<b>REDUCED BORE</b> for measuring water, or for lower flowrates				
Order Code	Size (mm)	Flowrange (Litres/min)		
		min		
		@ $\pm 5\%$	@ $\pm 2\%$	@ $\pm 0.5\%$
AQM25	25	0.5	1.1	208
AQM40	40	1.1	2.6	516
AQM50	50	1.7	5	830
AQM80	80	4.2	10	2,080
AQM100	100	6.7	17	3,330
AQM150	150	17	50	8,330
AQM200	200	27	65	13,130
AQM250	250	42	105	20,830

<b>FULL BORE</b> no reduction in tube $\Phi$ e.g. for sewerage application				
Order Code	Size (mm)	Flowrange (Litres/min)		
		min		
		@ $\pm 5\%$	@ $\pm 2\%$	@ $\pm 0.5\%$
AQM40-F	40	3.3	8.3	833
AQM50-F	50	5.3	13.3	1,310
AQM80-F	80	14	34	3,330
AQM100-F	100	22	52	5,210
AQM150-F	150	54	132	13,130
AQM200-F	200	84	209	20,830
AQM250-F	250	134	334	33,330

**SPECIFICATIONS**

- Accuracy • ±0.5% of reading.
- Construction • Flanged Carbon Steel sensor epoxy coated, internals lined with hard rubber with Stainless Steel electrodes. Display housing is aluminium alloy with glass window.
- Protection • IP67 sensor and display box.
- Pressure rating • 16 bar (1600kpa).
- Measured Liquid • 50µs/cm minimum conductivity required.
- Pulse Outputs • programmable. Output 1: Forward only, or forward plus reverse pulses. Output 2: Reverse pulses, or direction indicator. • 50Hz maximum, 50% nominal duty cycle. • Solid state switches with common isolation ±35VDC 50mA.
- Communication • RS232 compatible via custom lead.
- Displays • 9 digit forward, reverse and nett flow totals, forward flow rate, battery and pipe status condition display messages. Empty pipe indication. Non-volatile memory. Display programmed to application, total Litres or KL, Rate LPS, LPM, LPH. Display total can be reset via RS232 com. Display goes into sleep mode after 15sec; wave over display to wake.
- Power Supply • 2x 3.6V Lithium batteries. • easily field replaceable by user. • Battery life approximately 3 years.
- Temperatures • Process temperature: -10 °C to 70 °C • Ambient temperature: -20 °C to 60 °C
- Quality • ISO4064 class-C

**INSTALLATION**



**All parameters programmed by Manu Electronics to suit the specific application.**

**Remote versions wired to 2-metres cable length. Optional PVC or GAL Flanges with earthing fitted as required.**

**DISPLAY**

**9-Digit LCD Display**  
Cyclic display\*  
• 8mm High  
• Forward total  
• Reverse total  
• Net total  
• Date  
• Tariff Total

**Tariff Indicator**

**Status Indicators**  
• Battery A low  
• Fault  
• Empty pipe  
• Battery B low  
• Mains off

**Choice of Flow Units to match user requirements**

**5-Digit LCD Display**  
Cyclic display\*  
• Flow rate  
• Time  
• Velocity

**Pictorial Displays Warning annunciators**

- Left Battery Warning
- Sensor Fault
- Empty Pipe condition
- Mains Failure
- Right Battery Warning

\* Can be programmed to display required values only

Order Code	Description
-R	Remote mount display via 2m cable
AQMBAT	Battery Pack (2 batteries)
ME5-T-B	Totaliser, Lithium battery powered, external reset
ME5-T-B-IR	Totaliser, Lithium battery powered, Internal reset
-LOG	Optional internal 3-point logger, including PC software (need -PL cable for PC to access log data).
-PL	Programming/log RS232 lead for PC to access log.

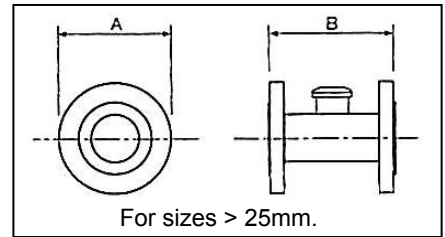
**Details of Optional Internal 3 Point Logger (Order Code "-LOG")**

	1	2	3
Logger function	flow	flow	Fwd, Rev, net flow totals
No. of Records	8,831	11,361	366
Logging interval	15 - 65500 seconds (adjustable)		24 hours (fixed)
Typical Capacity	3 months @ 15 min	~7 days @ 1 min	1 year
Mode	cyclic	cyclic	cyclic

**DIMENSIONS**

Sensor	Dimensions (mm)		Weight#	Flange / connection
	Size NB	A		
25 mm		127	2.5	Parallel thread to ISO228-1
40 mm	176	200	13	Flanged, AS2129 Table E
50 mm	176	200	14	Flanged, AS2129 Table E
80 mm	219	200	20	Flanged, AS4087 - CL16
100 mm	230	250	25	Flanged, AS4087 - CL16
150 mm	281	300	33	Flanged, AS4087 - CL16
200 mm	402	350	50	Flanged, AS4087 - CL16
250 mm	440	450	75	Flanged, AS4087 - CL16
Terminal Box	95 x 80 x 61			
Display Box	176 x 170 x 105			

# approximate weight, includes display box



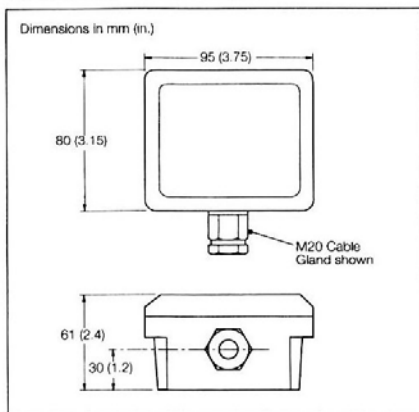
**SENSOR SPECIFICATIONS**

- \* Flanged carbon steel sensor epoxy coated, internals lined in hard rubber with 316L stainless/steel electrodes.
- \* Sensor is rated to IP68 submersible if the remote sensor junction box is correctly potted.
- \* Pressure to 16bar (1600kpa).
- \* REMOTE version cable entry to sensor and display box is M20 cable glands.

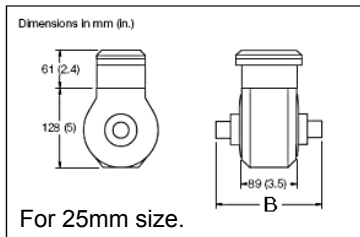
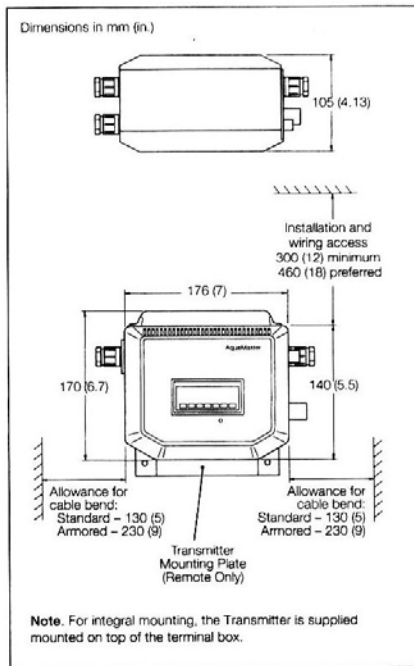


**Shown connected to an external ManuFlo ME5-T-B resetable Totaliser**  
(mounted on reverse side of Aquamaster display).

**Terminal Box – Sensor Mounted**



**Transmitter**



- Aquamaster programmed to your specific application requirements: Flowrate litres/M<sup>3</sup> per Sec/Min/Hr/Day, Totals in Litres/M<sup>3</sup>  
Pulse output value by meter size:
  - < 100mm : 1/10/100/1000 Litres/pulse
  - >= 100mm : 10/100/1000 Litres/pulse
- Non-resetable Total on Aquamaster display (only resetable via RS232 link).
- Can have resetable total, via an external ME5-T-B Indicator mounted on reverse side of display box. ME5-T-B display can be reset via its front panel, or optionally via an internal reset button. Push ME5-T-B button once to wake-up ME5-T-B display to read total prior to resetting.
- Remote Transmitter Display Unit is wired with a standard 2-metre cable (up to 200 m distance). Add **\$10/metre** for extra cable.
- For Sydney Water Tradewaste Model, need an optional MIL-spec Sampler Plug fitted.
- REMOTE AQUAMASTERS ARE FULLY WIRED. ALL ARE WET-TESTED (CERTIFICATE PROVIDED).

Due to continuous product improvement, specifications are subject to change without notice.