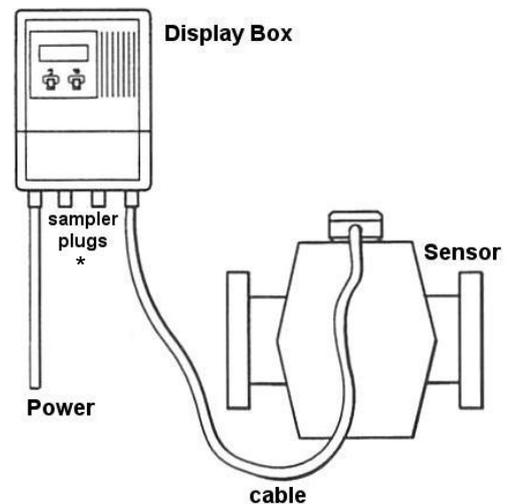


# **MFS-TW** - MAGMASTER™ Sizes - 25mm to 100mm Electromagnetic Tradewaste Flowmeters

## FEATURES

- Unsurpassed accuracy to  $\pm 0.2\%$
- Process temperature to 130°C.
- Widest possible flow ranges.
- Fully bi-directional operation.
- Virtually maintenance free with no moving parts.
- Eliminates headlosses and need for filters.
- Handles widest range of aggressive liquids.
- Robust construction for industrial use.
- Frequency, analogue and alarm outputs.
- Empty pipe detection.
- Fully programmable via hyperlink.
- Flowrate and easy resettable totaliser with multi-function display.



The Magmaster™ electromagnetic flowmeter (specially configured in Australia - wired, programmed and tested by ManuFlo) is capable of operating over the widest possible flow ranges. It offers reference meter quality performance with  $\pm 0.2\%$  of reading, being ideal for measurement of wastewater, chemical and pharmaceutical, metallurgical and food applications. With no moving parts and an obstruction-less bore, this type of flowmeter guarantees a level of performance, virtually unaffected by specific gravity or viscosity variations, or the most contaminated of fluids, whilst maintaining a high degree of accuracy.

**Magmaster™ is available in sizes 25 to 100mm. It has a Wafer or ANSI-150 flanged carbon steel sensing tube lined with Teflon, with S/S or Hasteloy-C electrodes with inbuilt earth electrode**

The IP65-rated transmitter display box is remotely wired to the sensor tube by a low voltage 2-metre signal cable (can be extended). Power is by standard 85-265 vac.

**FLOWRANGE PERFORMANCE and SIZING TABLE**

size (mm)	MINIMUM Flowrate (Litres/minute) for Accuracy of						MAXIMUM* Flowrate (Litres/min)
	$\pm 10\%$	$\pm 5\%$	$\pm 2\%$	$\pm 1\%$	$\pm 0.5\%$	$\pm 0.2\%$	
25	0.3	0.6	1.5	2.9	5.9	14.7	295
40	0.8	1.5	3.8	7.5	15.1	37.7	753
50	1.2	2.4	5.9	11.8	23.6	58.9	1178
80	3.0	6.0	15.1	30.1	60.3	150.7	3014
100	4.7	9.4	23.6	47.1	94.2	235.6	4711

\* Based on @10 metres/sec flowspeed, but instrument capability is up to 15 metres/sec (50% greater capacity).

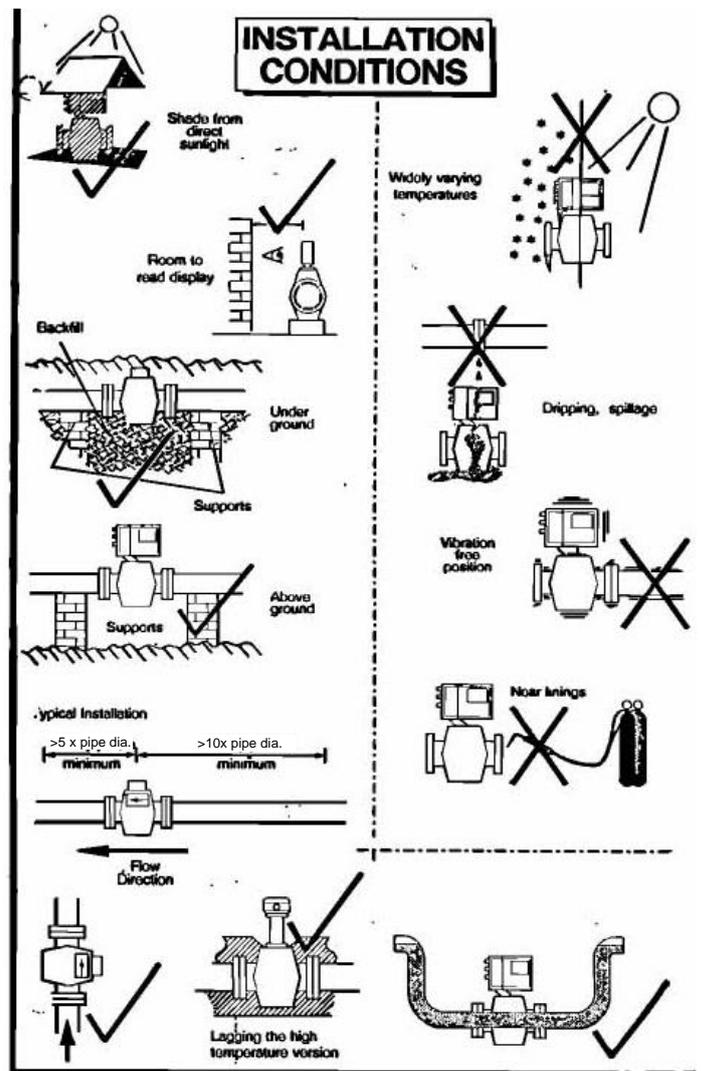
**\* Fitted with local water authority sampler output plugs as required.**

## SPECIFICATIONS

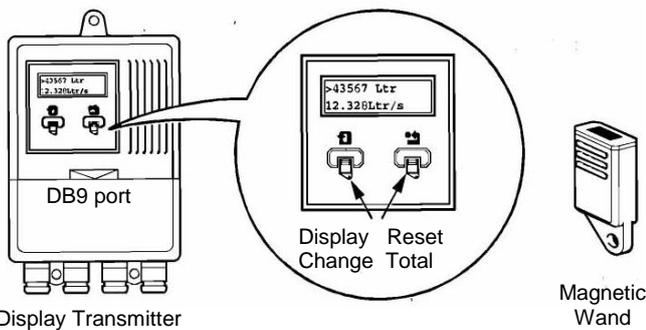
Accuracy	- Better than 0.2% of reading.
Construction	- WAFER or Flanged carbon steel sensor, lined in Teflon with S/S or Hastelloy 'C' electrodes, remote transmitter with polycarb. window.
Protection	- NEMA 4x (IP65) sensor and transmitter. - sensor pottable to IP68 protection.
Pressure rating	- 2000 kPa (19 bar) PN19.
Fluids	- 5µs/cm minimum conductivity.
Outputs	- All fully programmable, dual analogue, dual pulse, low & high flow and empty pipe alarms etc. Local RS232 input.
Output drives	- Isolated protected transistor sinking >250mA . Voltage <35V. Square wave or fixed duration pulse. - Analogue 4-20 or 0-21mA.
Displays	- 9 digit forward, reverse and nett flow totals, forward flow rate, flow velocity, % of range and status condition display messages, all with non-volatile memory. (display programmed to application). Display can be armed for easy reset of Totals (via magnetic wand, or via external logic), or accumulative non-reset.
Isolation	- Galvanic separation to 50VDC.
Power	- 85-265vac standard.
Fluid temp.	- -10 °C to +130 °C
Quality	- ISO9001, Cenelec, FM, CSA.

- All parameters programmed by Manu Electronics to suit the specific flow application.
- Wired with 2-metres cable length (can be extended Up to 100m) from sensor to display/transmitter.
- Optional PVC or GAL Flanges with earthing fitted as required.

## MAGMASTER™ Electromagnetic Flowmeter



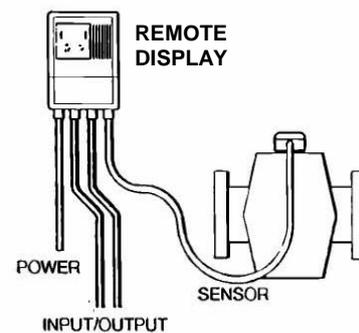
## OPERATION



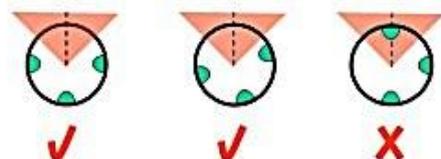
Switch on the power supply to the flowmeter, the flowrate will be shown on the bottom line and the total on the top line. Using the magnetic wand, waving over the right icon will reset the totaliser (when activated). Waving over the left icon will scroll through the display options;

- > Forward flow total value
- < Reverse flow total value
- \* Nett flow total value (>-<=\*)
- Alm Active alarms
- Vel Flow velocity in m/s.
- % Flow rate % of max. flow range

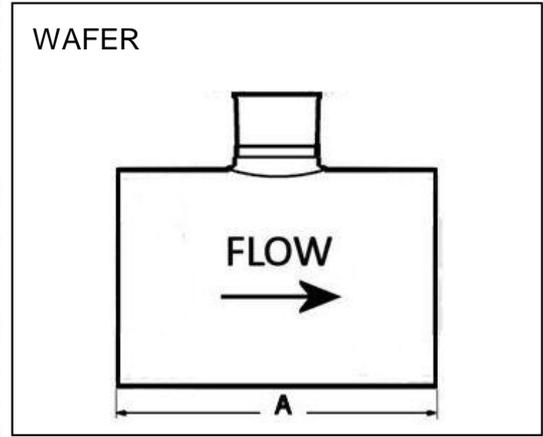
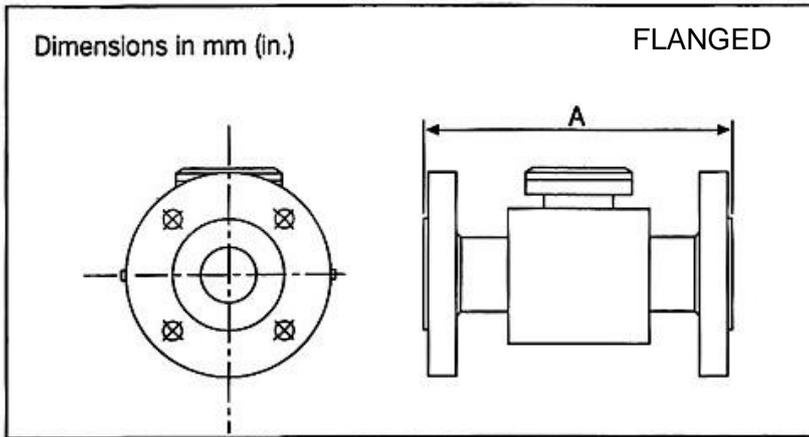
## ELECTRICAL INSTALLATION



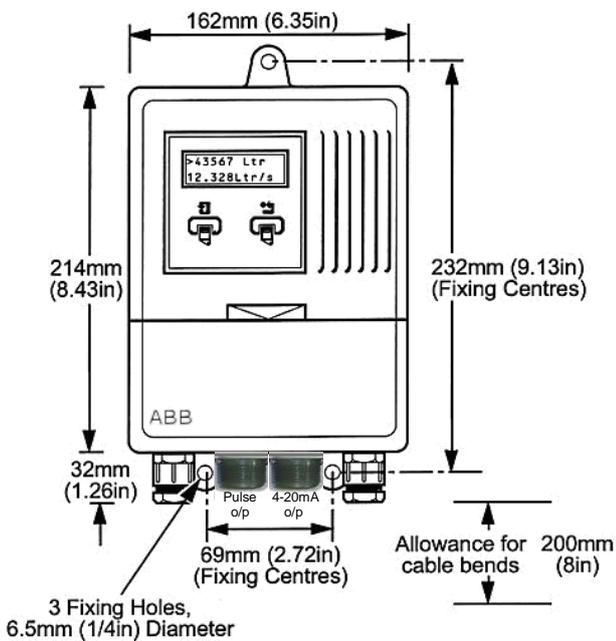
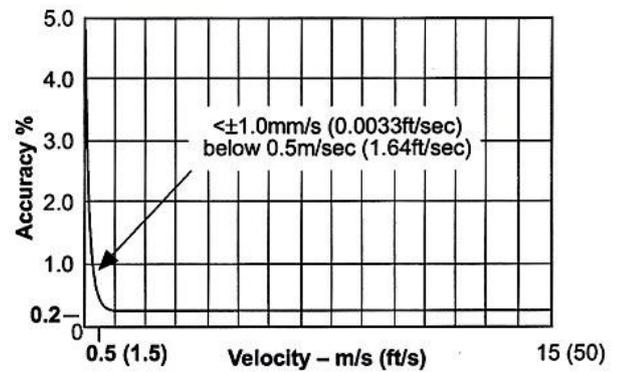
**For horizontal runs, the electrodes are properly orientated when not within 45 degrees from upright (is not an issue for vertical installation).**



**DIMENSIONS**



Pipesize		WAFER		FLANGED	
		Length A	Weight	Length A	Weight
mm	inches	mm	kg	mm	kg
25	1"	200	7	200	9.5
40	1.5"	200	7	200	11.5
50	2"	200	8	200	13
80	3"	200	12	200	20
100	4"	250	16	250	21

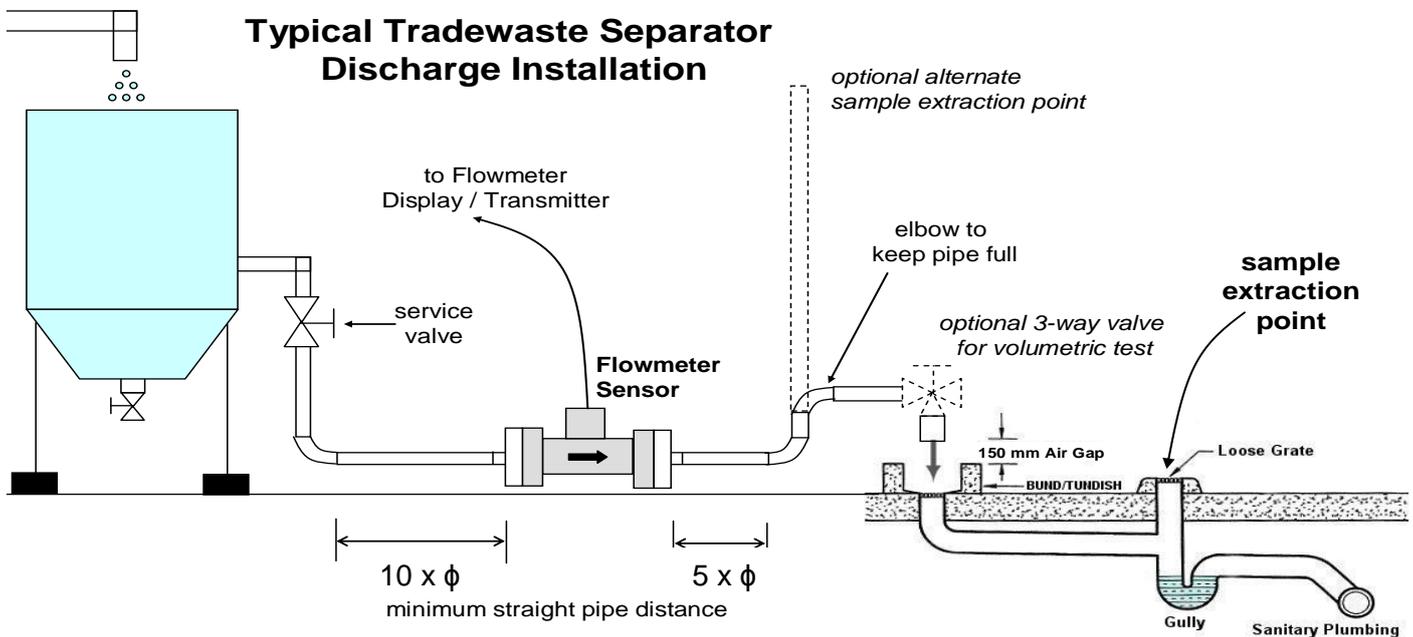


Display mounting details.

- Magmaster programmed to Tradewaste requirements:
  - Flowrate in Litres/second. Totals in Litres or KL.
  - Pulse output 1pulse per 100 Litres, 4-20mA to spec.
- Remote Transmitter Display Unit is wired with a 2-metre cable as standard (optionally up to 100m).
- Voltage supply: 85-265 vac.
- ALL MAGMASTERS ARE FULLY WIRED AND WET TESTED, WITH CERTIFICATE & PROGRAM SHEET.

# Electromagnetic Tradewaste Flowmeter Installation Guide and Checklist

LOCATION	
Locate the flowmeter <b>as close as possible</b> to pollutant source or immediately downstream of the pre-treatment plant.	<input type="checkbox"/>
To ensure correct flow readings, <b>avoid</b> installing the flowmeter sensor near <b>strong electromagnetic fields (e.g. substations, high voltage cables)</b> , and <b>avoid</b> areas where there is <b>excessive vibration</b> .	<input type="checkbox"/>
Ensure that the chosen location will allow the flowmeter to operate within its <b>environmental rating</b> .	<input type="checkbox"/>
Mount the flowmeter's display box in an area that allows <b>easy and safe access</b> for readings for totals, and for connection of sampler collection units.	<input type="checkbox"/>
If mounted outdoors: <ul style="list-style-type: none"> <li>• Install a <b>sunshade</b>, to protect the display box from direct sunlight; and</li> <li>• Install a lockable vandal-proof enclosure, preferably with a window for reading the flowmeter display.</li> </ul>	<input type="checkbox"/>
ELECTRICAL	
Have <b>240 vac supply</b> available.	<input type="checkbox"/>
<b>Hardwire</b> the flowmeter display box to power supply (i.e. have permanent connection that can't be unplugged).	<input type="checkbox"/>
PLUMBING	
Install the flowmeter sensor in a section of pipe that is <b>full at all times</b> , to ensure correct readings.	<input type="checkbox"/>
To prevent flow turbulence that may hinder correct flow readings, ensure that there is <b>uninterrupted straight pipe (i.e. no bends, no valves, no diameter change) before and after the sensor</b> of length at least 10x pipe diameters before sensor; and at least 5x pipe diameters after sensor e.g. for 50mm diameter pipe, the minimum straight pipe required is 10 x 50mm = 500 mm before (upstream of) sensor, and 5 x 50 mm = 250 mm after (downstream of) sensor.	<input type="checkbox"/>
If without optional connection kit, install <b>gaskets and bonding cables(s)</b> according to the pipe type.	<input type="checkbox"/>
To avoid vibration that may hinder correct flow readings, <b>support the weight</b> of the sensor.	<input type="checkbox"/>
Provide an <b>extraction point</b> so that samples of the discharge liquid can be extracted.	<input type="checkbox"/>
Do not seal the pipe to the sewer, to <b>avoid syphoning</b> occurring.	<input type="checkbox"/>
If not a pumped installation, then install a <b>service valve</b> upstream of the flowmeter to allow for flowmeter maintenance.	<input type="checkbox"/>



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