AMM - ADMIX MINI MAG
Magnetic Flowmeter
Sizes: 15mm (½”), 20mm (¾”), 25mm (1”)

FEATURES
- Very compact and light weight design in sizes 15mm (½”), 20mm (¾”) & 25mm (1”).
- 1000 pulses/Litre (15, 20mm sizes), 500 pulses/Litre (25mm size).
- 15 and 20mm models are directly interchangeable with MES20 20mm flowmeters.
- Measurement range 0.2 to 10 m/s @ +/- 2%.
- PVDF lined sensor, Stainless Steel 316 electrodes with integrated grounding rings.
- BSP(male) threaded end connections. Supplied with BSP (female) couplings.
- Virtually maintenance free, with no moving parts.
- Measures liquids with conductivity > 20μS/cm, to 40°C.
- Accuracy is unaffected by varying viscosity or specific gravity of liquids.
- 12 VDC powered (can be directly powered from ManuFlo devices, has LEDs for pulse and power indication (optional 24 VDC for use directly with 24V PLCs).
- Easy plug-in wiring connections via DIN43650-A plug set to IP65 rating.

INTRODUCTION
The Admix Mini Mag is a low-cost Electromagnetic Flowmeter designed for the economical measurement of chemical liquid admixtures and any other conductive liquid. The 15 and 20mm sizes output 1000 pulses per Litre (1 pulse / 1 ml), making them a direct replacement option for MES20 admixture flowmeters in applications where there is a high content of solids in the measured liquid. Liquids with an electrical conductivity of at least 20μS/cm can be measured. The processor/electronics is integrated with the flowmeter sensor, so these two elements form a very compact package.

The Admix Mini Mag is available in three sizes: 15, 20 and 25mm connections i.e. ½”, ¾”, 1” with 8mm, 12mm and 20mm bores respectively. With no moving parts, and an obstruction-free bore, this type of flowmeter is ideal for measuring a wide range of liquids up to a temperature of 40°C, with no head losses and virtually no ongoing maintenance. The Admix Mini Mag is ideal for measurement of admixtures in concrete batch plants, flowrate and total and general process batching applications.

Admix Mini Mag is powered by +12VDC supply, and can be used directly with the complete range of ManuFlo or any other Instrumentation e.g. ManuFlo ME995 and ME3000 Batch Controllers, ME2008 and UIC interface boards, FRT303 and ME5 indicators.

The operation of electromagnetic flow meters is based on Faraday’s Law of Induction. A voltage is induced in a conductor as it moves through a magnetic field. This principle is applied in the Admix Mini Mag design. The voltage induced in the flowing liquid, is measured at two electrodes & is proportional to average flow velocity. The microprocessor then scales this signal voltage to read in digital units.

DIMENSIONS (mm)

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>B</th>
<th>ØC</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>ND</th>
</tr>
</thead>
<tbody>
<tr>
<td>½”</td>
<td>84.5</td>
<td>18.5</td>
<td>¼”</td>
<td>80</td>
<td>36</td>
<td>88</td>
<td>100</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td>¾”</td>
<td>90</td>
<td>20</td>
<td>⅜” MG</td>
<td>80</td>
<td>36</td>
<td>88</td>
<td>100</td>
<td>43</td>
<td>14</td>
</tr>
<tr>
<td>1”</td>
<td>90</td>
<td>22</td>
<td>⅜” MG</td>
<td>80</td>
<td>36</td>
<td>88</td>
<td>100</td>
<td>50</td>
<td>18</td>
</tr>
</tbody>
</table>

WARNING: Always use the Poly coupling connectors supplied by ManuFlo. Never screw up pressing against the red body housing as can cause stresses damaging the product. (Allow min. 5mm gap distance).
### AMM

<table>
<thead>
<tr>
<th>Packed Flow Meter Size</th>
<th>Measuring Range</th>
<th>Fixed Pulse Value</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15mm (08mm bore)</td>
<td>1.0 – 50 Litres/min</td>
<td>1000 pulses/Litre</td>
<td>AMM15</td>
</tr>
<tr>
<td>20mm (12mm bore)</td>
<td>2.0 – 110 Litres/min</td>
<td>1000 pulses/Litre</td>
<td>AMM20</td>
</tr>
<tr>
<td>25mm (20mm bore)</td>
<td>3.0 – 210 Litres/min</td>
<td>500 pulses/Litre</td>
<td>AMM25</td>
</tr>
</tbody>
</table>

For 24 VDC powered option, add suffix -24 to Order Code.

**Accuracy**: ±2% of range, <1.0% of rate

**Liner Material**: PVDF

**Electrodes**: S/S316

**Grounding Rings**: S/S316

**Protection class**: IP65

**Max. Fluid Temp.**: -10 °C to +40 °C

**Max. Pressure**: 6 bar @ 40°C, 10 bar @ 20°C

**Conductivity**: Minimum 20 μS/cm

**Supply power**: +12 VDC @ 40mA

Pulse output

- NPN pulse, VDC max: 28V, I max: 50mA,
- Diode and poly-switch protected.

### ELECTRICAL CONNECTIONS

**Electrical Connection**: DIN 43650 plug set

To wire: Use minimum 2 core shielded cable. Unscrew the DIN female plug, remove the gland, pass the signal/power cable through the gland and connect as per diagram to designated pins. Tighten the gland and then refit DIN plug, tighten screw to assure a secure seal to IP65 rating.

### CONNECTION

Caution: Never use the instrument without a load resistance. Check the load resistance “R” before connecting the power.

*** Note: All ManuFlo devices (e.g. ME995, ME2008, UIC, FRT) have an inbuilt pull-up resistor so R is not required/applicable.

### INSTALLATION & CONDITIONS OF USE

- **It is essential that the meter tube be always completely filled with liquid.**

- Partial filling, or an empty pipe, will result in pulse fluctuations from 1 – 900Hz. Keep the pipe full at all times.

- The flowmeter will transmit pulses in the forward flow direction only. Reverse flow (backflow) will not be measured.

- The installation orientation is arbitrary. The flowmeter should not be installed in the vicinity of strong electromagnetic fields.

- Valves or other shutoff devices should not be installed immediate to the flowmeter. Allow some straight pipe before and after the flowmeter (length upstream: 5x diameter, length downstream: 3x diameter) before fitting elbows, valves etc.

- For accurate measurement, the diameter difference of the transition from the pipeline to the flowmeter should be kept to a minimum.

- Flowmeter has inbuilt Stainless Steel grounding rings.

- Fluid temperature range of –10 to +40 °C. Pressure up to 10bar @20°C. Conductivity of fluid must be > 20 μS/cm.

- After prolonged period of use, if the calibration is found to be significantly inaccurate then the flowmeter probes may be excessively coated, so remove and wipe the inside of the flowmeter tube. The flowmeter is rated to IP65, but as a safeguard after installation, place a cover over the flowmeter and make sure signal cable is looped downward to avoid trailing water ingress through cable gland.

- **WARNING:** Do not exceed the maximum recommended flowrate as overdose will occur. (Generally the correct size flowmeter for the flowrate should be selected to avoid this). Flowmeter will measure below minimum flowrate but at a reduced accuracy (e.g. ±10%).

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Due to continuous product development, specifications are subject to change without notice