Aquamag

Aquamag sensors, transmitter and battery.

**Specification DataFile**

- Turndown up to 400:1
- High accuracy maintained at very low flowrate.
- Low installation costs.
- No maintenance required.
- Compatible with most data loggers.
- Integral rate and total displays.

ABB Instrumentation
Introduction
The AQUAMAG flowmeter consists of a sensor, a transmitter and a power supply, normally a non-rechargeable 12V battery.

The design of the sensor is unique, permitting installation directly in an underground pipeline, without the need of a chamber, simply by back-filling and making good.

The transmitter has a microprocessor which provides all the necessary control functions, including the provision of intermittent energisation of the sensor field windings, to give a battery life in excess of one year.

The housing of the transmitter is rated IP68 and connections are made via 'Military Style' robust metal plugs and sockets. The output signals are in the form of pulses suitable for input to Data Loggers, etc. The flow measurement parameters can be set/reset by a terminal using an RS232C/RS423 communications interface.

Specification
Sensor
Sizes (Nominal Bore):
50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 450, 500 and 600mm

Sensor Tube:
304 Stainless Steel

Electrodes:
Stainless Steel

Lining:
Up to 80mm: PFA (UK WFBS Listed)
100 - 600mm: Elastomer (UK WFBS Listed)

Flange Material:
Carbon Steel

Earthing Rings (Optional):
Stainless Steel

Housing:
Up to 150mm: Die-cast aluminium
200-300mm: ABS
350-600mm: GRP

Flanges:
To mate with BS4504 16 bar or ANSI B16.5 Class 150

Suitable Fluids:
Liquids with conductivities above 10 µS/cm

Electrical Connections:
Sealed cable 10 or 30 metres long terminated with suitable connectors

Temperature Limits:
–20°C to +70°C

Protection:
IP68 (Sizes ≤ 150mm: 5 metres indefinitely)
IP68 (Sizes > 150mm: 10 metres indefinitely)

Weights:

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<thead>
<tr>
<th>Size</th>
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<tbody>
<tr>
<td>50mm</td>
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<td>350mm</td>
<td>134kg</td>
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<tr>
<td>400mm</td>
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<tr>
<td>450mm</td>
<td>207kg</td>
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<tr>
<td>500mm</td>
<td>241kg</td>
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<tr>
<td>600mm</td>
<td>309kg</td>
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</table>

Transmitter
Housing:
Polycarbonate

Protection:
IP68 (1.5 metres for up to 12 months)

Connectors:
Interface: Metal bodied bayonet locking

12V dc Supply:
Screw locking metal body socket

Programming:
To operate with most RS232C/423 terminals (e.g. PSION organiser, IBM PC, etc), 4800 Baud at 10m maximum

Display:
4 digit flowrate
8 digit totaliser with/without reset facility

Operating Modes:
Continuous or intermittent

Outputs:
4 open drain MOSFETS – 100 & 1000 Hz max. for both forward and reverse flows

Output Rating:
30V d.c. max. (off state)
50mA max. (on state)
10Ω max. on resistance

Weight:
0.5kg

Temperature
Limitation: –20°C to +50°C (with Totaliser)
–20°C to +70°C (without Totaliser)

Temperature Effect:
±0.02%/°C

System
Comprises sensor, transmitter and 12V dc battery or power supply.

System Accuracy:
±1% of rate or 2mm/sec. velocity whichever is the greater

System range:
Up to 10 metres/sec., bi-directional

RFI Specification:
1. Conforms to BS6667 Part 3
   ("Radiated susceptibility to 10V/m")
2. Conforms to BS6527
   ("Terminal voltage and radiated emissions")
Enquiry and Ordering Information
Please copy this page for each different device required and, after entering the relevant details (or deleting as appropriate), mail or fax with letterhead to the local distributor.

Company name

Contact/Reference

Previous Quotation Number

Quotation/Ordering Details

Calibrated Bore: mm

Max. Flow Rate:

Number of:

Flange Spec: To mate with BS4504 (16 bar) or ANSI B16.5 Class 150

Fitting Kit:

Earthing Rings:

Calibration: Std (3 Point) / 8 Point / NAMAS / Witnessed

Cable Length: 10 or 30 metres: metres

Overall Dimensions

Electronics

Connections

Battery Pack

<table>
<thead>
<tr>
<th>Meter Size NB</th>
<th>Dimensions</th>
<th>Approx. Weight</th>
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<tr>
<td>600</td>
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</tbody>
</table>

100mm minimum clearance required for connecting plugs and cables
Installation of an Aquamag sensor

Aquamag transmitter housed in a roadside enclosure