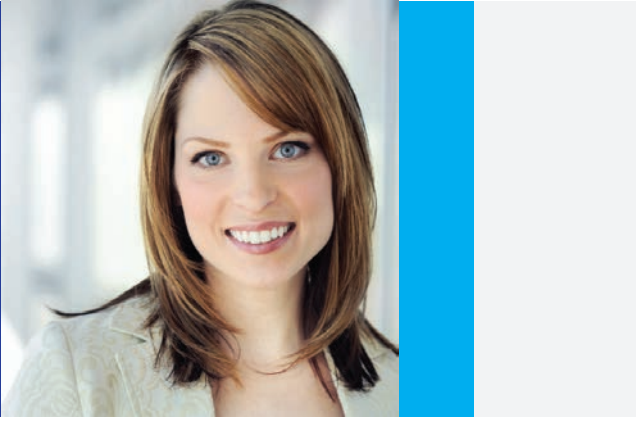


Battery Powered Bulk Smartflow™

Commercial Meter Range



Battery Powered Bulk SmartFlow™

Battery Powered Bulk SmartFlow™ meters are Electromagnetic Flow Meters using hollow bore flowtubes and state of the art technology to accurately detect the large flow range the meters can record.

Typical Battery Powered Bulk SmartFlow™ Meter



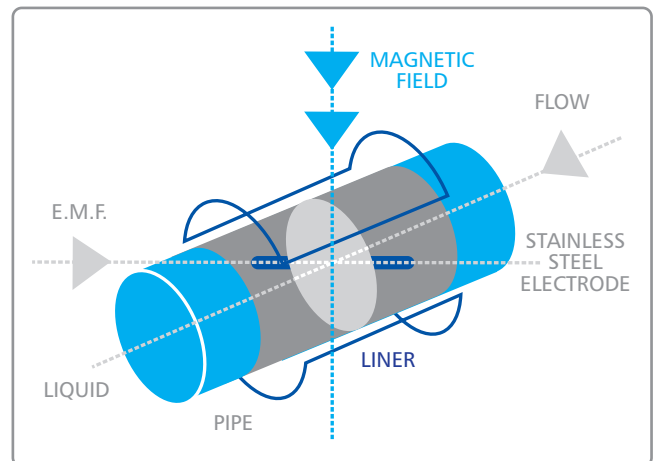
Battery Powered Bulk SmartFlow™ Meter Range

The flanged measuring tube is available in a range of sizes, from 2" (50mm) to 24" (600mm) and have no moving parts. The **Battery Powered Bulk SmartFlow™** utilises the electromagnetic principle and applies to both "Faraday's Law of Induction" and "Fleming's Law of Electromagnetic Induction".

Battery Powered Bulk SmartFlow™ meter characteristics:

- Unaffected by grit or particulates, no strainer required
- Do not measure air
- Provides accurate flow measurement with no deterioration in performance or accuracy
- Outlasts all conventional mechanical meters
- Accuracy $\pm 0.5\%$ over a very large flow range
- Whole life cost ensures large long term savings
- Capability of large reduction in current maintenance costs
- Easily installed and operated via programmable display
- Compatible with a wide range of AMR
- Displays a two line, back-lit LCD providing flow rate, positive flow consumption, negative flow consumption and any internal error messages
- The flow rate units are available in cubic metres/hour, litres/hour, GPM and million gallon/day, and
- The consumption units are available in cubic metres, litres, US gallons and cubic feet

The Electromagnetic Induction Principle



Battery Powered Bulk SmartFlow™ measurement

The **Battery Powered Bulk SmartFlow™** meter range can be utilised not only for all forms of water, but can also be used to measure:

- Waste Water - Sewage, Sludge, Effluent from Industries
- Food and Drink - Beer, Milk Manufacture
- Paper Plant - Pulp
- Mining and Dredging - Slurries with solids, seawater
- Chemical - Acids, Alkalis

Applications

- On sites without power supply
- In areas with very difficult access
- Water consumption measurement
- Flow measurement of water, raw water, drinking water, etc.
- Leakage monitoring in water networks
- Monitoring of distribution networks
- Well measurement
- Irrigation plants

Features and Benefits

Features and Benefits of Bulk SmartFlow™

FEATURES	BENEFITS
Non-moving parts, electronic flowmeter	No 'wearing-out' or 'jamming'
Flow measurement uses 'electromagnetic induction'	Means to determine the water flow accurately
Two line, 16 digit Liquid Crystal Display	Displays simultaneously flowrate, velocity and total consumption info
Standard accuracy $\pm 0.5\%$	Provides total reliability
Flowmeter utilizes 3 relay outputs	Improved performance, instead of normal open collector outputs
Single board design	Provides better replacement of boards when necessary
Automatic software diagnostic systems	Gives low cut-off, auto-damping and calibration functions
Air and empty pipe detection, combined with error diagnosis and self-check functionality	Ability to quickly rectify unwanted network problems
Rugged stainless steel meter housing	Provides lasting durability
Flow sensors (electrodes) made from "Hastelloy C"	No deterioration in flow measurement
Integrated flow simulation mode	Improves reliability of a 'good installation'
RS 232 interface	Provides ready interface to computers
Flexible IP class	Can provide IP67 or IP68
Pressure rating of 16 Bar	Conforms to technical characteristics for large meters
'Increasing' maximum flowrates	Can for example, provide a maximum flowrate for 300mm (12") model of 2250 m ³ /h
Flowrate range of 0.03 m/s - 10.0 m/s	Turndown ratio of 100:1
Warranty period of 2 years	Peace of mind for customer and Utility

Typical Dimensions

SIZE (mm)	ØC (Pin-Pin, mm)	ØD (Flange, mm)	NUMBER OF BOLTS	BOLT SIZE	Height (mm)	Fitting Length (mm)	Weight (Kg)
50	125	165	4	M18	330	225	12.5
100	180	220	8	M18	355	280	26.5
150	240	285	8	M22	387	400	28.0
200	295	340	12	M22	415	400	40.0
250	350	395	12	M22	439	500	82.0
300	400	445	12	M22	502	500	95.0
400	515	565	16	M26	552	600	140.0
500	620	670	20	M26	602	600	225.0
600	725	780	20	M30	665	600	304.0

Information for larger meters available on request



Technical Specification

General Technical Specification

FEATURE	SPECIFICATION
Meter sizes	2" (50mm) up to 24" (600mm)
Flange	DIN, ANSI, JIS, AWWA
Flow Conductivity	Greater than 20 $\mu\text{S}/\text{cm}$
Flow rate	0.03 m/s – 12 m/s
Accuracy	>0.5 m/s better than +/- 0.5 accuracy of rate <0.5 m/s +/- 2.5 mm/s of rate
Ambient Temperature	-20 °C - +60 °C
Liner Temperature	0 °C - +80 °C
Display	LCD, two lines
IP class	IP67, optional IP68
Power Supply	Internal Lithium batteries 1 battery pack – 10 years 2 battery packs – 20 years

MATERIAL	SPECIFICATION
Liner	Hard-soft Rubber. Other options available if required
Electrode	Hastelloy C (standard). Other options available if required
Housing	Stainless Steel (ST37) welded, painted grey

OUTPUT	SPECIFICATION
Analogue	$\pm 0/4 - 20 \text{ mA} < 800 \Omega$
Pulse Width	Programmable up to 500 ms
Frequency	500 – 5000 Hz
Status Outputs	1 min./max. alarm, flow direction, failure report
Digital Outputs	4 x open collector, passive 30 VDC/20 mA, max 100 Hz

COMMUNICATION	SPECIFICATION
Serial Communication	RS232, Mod Bus RTU, IRDA, external AMR or GSM/GPRS module (optional)
Data Logger	Integrated



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Flow Rate Information

SIZE (mm)	v = 0.03 m/s (m ³ /h)	v = 0.5 m/s (m ³ /h)	v = 2.5 m/s (m ³ /h)	v = 10.0 m/s (m ³ /h)
50	0.21	3.60	18.00	85.00
100	0.84	14.00	70.00	280.00
150	1.90	31.50	150.00	630.00
200	3.40	56.50	280.00	1130.00
250	5.30	88.00	440.00	1760.00
300	7.60	127.50	625.00	2250.00
400	14.00	226.00	1100.00	4520.00
500	21.00	353.50	1750.00	7070.00
600	31.00	509.50	2545.00	12214.00

Information for larger meters available on request

