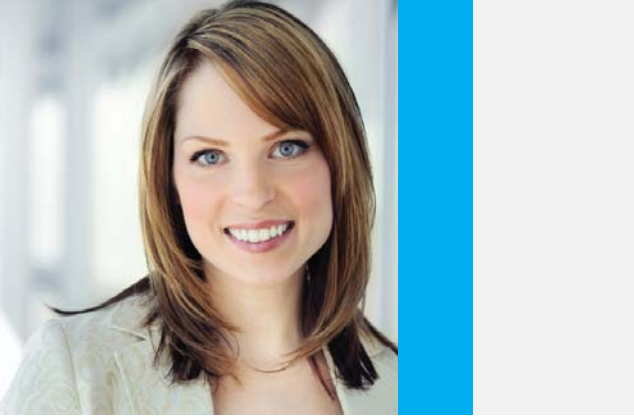


# Bulk SmartFlow™

Commercial Meter Range



# Bulk SmartFlow™

**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 Bulk SmartFlow™ Meter



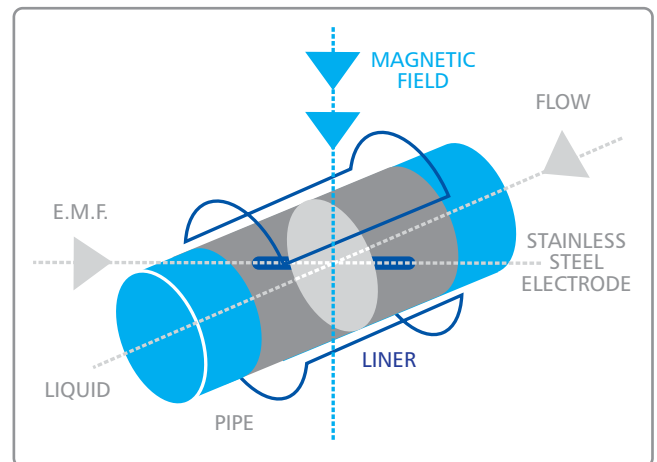
## Bulk SmartFlow™ Meter Range

The flanged measuring tube is available in a range of sizes, from 2" (50mm) to 56" (1400mm) and have no moving parts. The **Bulk SmartFlow™** meter range is available mains powered with or without a 24 hour UPS or as a battery powered unit. The electromagnetic principle, applies to both "Faraday's Law of Induction" and "Fleming's Law of Electromagnetic Induction".

### 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  $\pm 0.25\%$  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 four 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 Electomagetetic Induction Principle



## Bulk SmartFlow™ measurement

The 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

## Features and Benefits

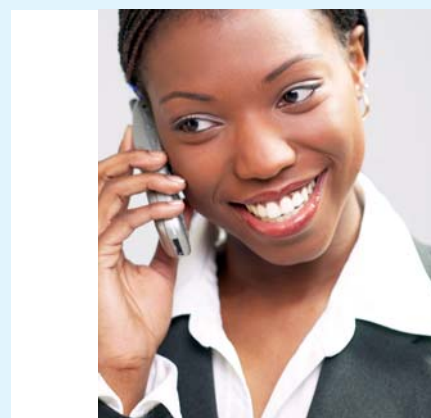
### Features and Benefits of Bulk SmartFlow™

| FEATURES   | BENEFITS  |
|--|---|
| Non-moving parts, electronic flowmeter   | No 'wearing-out' or 'jamming'   |
| Flow measurement uses 'electromagnetic induction'  | Means to determine the water flow accurately  |
| Four line, 16 digit Liquid Crystal Display   | Displays simultaneously flowrate, velocity and total consumption info                       |
| Standard accuracy $\pm 0.25\%$   | 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 IP65 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 <sup>3</sup> /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       |

Information for larger meters available on request



# Technical Specification

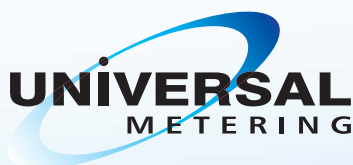
## General Technical Specification

| FEATURE                 | SPECIFICATION   |
|-------------------------|---|
| Meter sizes             | 2" (50mm) up to 56" (1400mm)  |
| Flange                  | DN32 PN16 –EN1092-1 (ISO standard)<br>ANSI Standard – optional if required<br>(American standard) |
| Electrical Conductivity | Greater than 5 $\mu$ S/cm   |
| Flow rate               | 0.03 m/s – 10 m/s   |
| Accuracy                | >0.5 m/s +/- 0.25%<br><0.5 m/s +/- 1.25 mm/s  |
| Temperature             | -20 °C - +60 °C   |
| Display                 | 16 char x 4 line text LCD<br>Flow, velocity, totalized volume                                     |
| IP class                | IP65/IP68 as per DIN 40050  |

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

| OUTPUT    | SPECIFICATION  |
|-----------|--|
| Analogue  | $\pm$ 0/4 – 20 mA <800 $\Omega$  |
| Pulse     | Scalable, max 10 kHz,<br>Transistor active 24 V DC,<br>200 mA Optocoupler, 30 V DC, 200 mA |
| Frequency | 500 – 5000 Hz  |
| Status    | 1 min./max. alarm or preselection meter,<br>1 flow direction, 1 error message              |

| POWER       | SPECIFICATION          |
|-------------|------------------------|
| Supply      | 85 – 265 V AC 50/60 Hz |
| Consumption | 21 VA                  |



**UNIVERSAL METERING LTD.**  
Salter's House  
Salter's Lane Industrial Estate  
Sedgefield  
Stockton on Tees TS21 3EE  
United Kingdom

t. +44 (0) 1740 629185  
f. +44 (0) 1740 629185  
sales@universalmetering.co.uk  
[www.universalmetering.co.uk](http://www.universalmetering.co.uk)

## Flow Rate Information

| SIZE (mm) | v = 0.03 m/s (m <sup>3</sup> /h) | v = 0.5 m/s (m <sup>3</sup> /h) | v = 2.5 m/s (m <sup>3</sup> /h) | v = 10.0 m/s (m <sup>3</sup> /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                          |

Information for larger meters available on request

