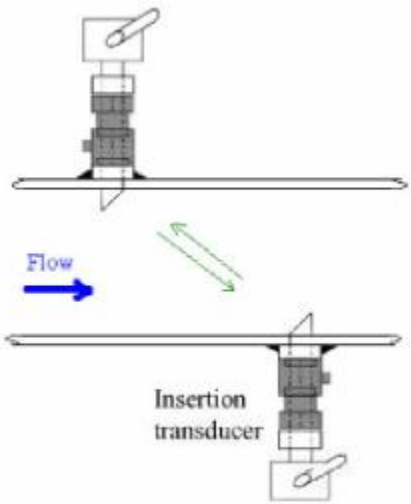
SAFSONIC B

BATTERY POWERED FLOW METER

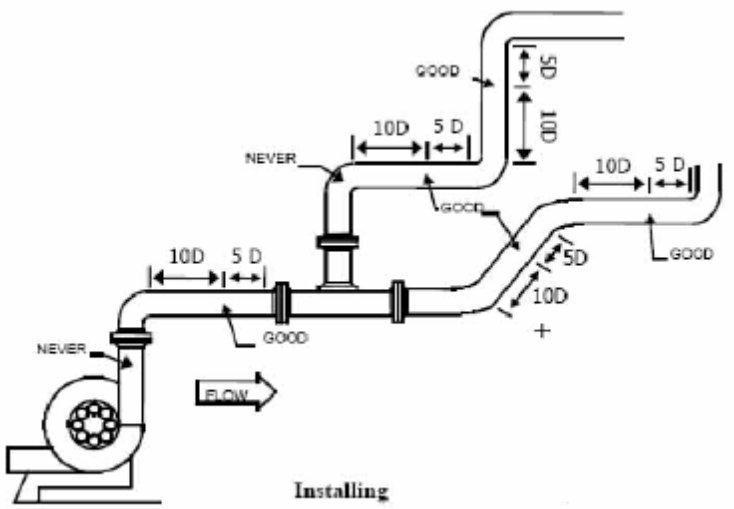
BASIC USER MANUAL

The SafsonicB battery power ultrasonic water meter works using the ultrasonic time of flight principle. It is used in place of mechanical water meters where no power supply is available, and has the following advantages: High accuracy, better reliability, and no moving parts.



Mechanical Installation

Install in a suitable section of full pipe. The meter section must be full for the meter to provide accurate flow measurement. The meter does have a top side and is indicated by the lifting lug welded to the meter. Please note that ultrasonic time of flight flowmeters are affected by upstream and downstream disturbance of the flow profile. Note the positions of installation that will produce good results.



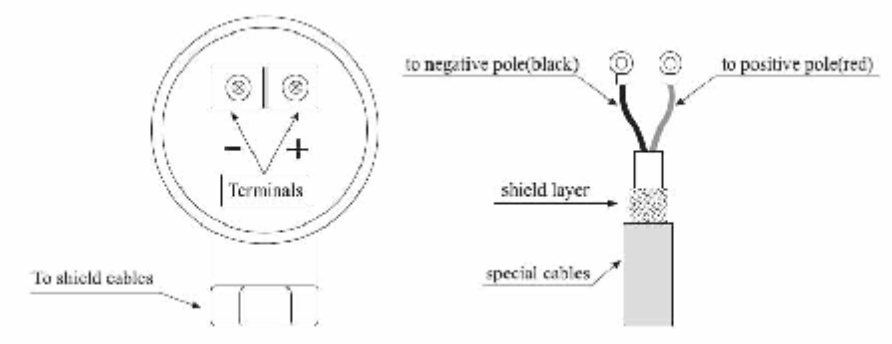
Installing

The flow sensors are of the hot-tap type, i.e. they can be installed through a ball valve without draining the line of water. The sensors can be turned to any angle but **will only work** when the sensor faces are pointed to each other through the liquid. Therefore it is necessary to maintain a standard. The TT marks on the flanges indicate the top of the meter and the SafsonicB sensors are installed with the cable glands pointing "down", i.e. if the pipe is horizontal the gland hole would **face the ground**.

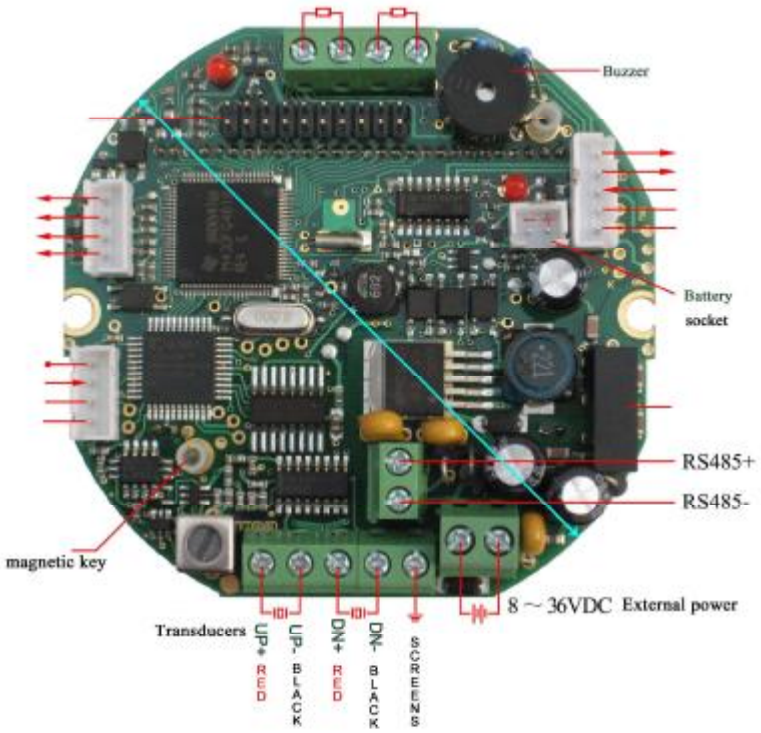
Electrical Installation

The SafsonicB is battery powered and is supplied with one or more 3.6V Lithium cells. These cells are housed externally from the meter display for ease of battery changing. The battery supply cable is inserted at the battery socket. External DC power is only used during factory calibration. When changing the battery the new battery is installed first and then old one removed so as to keep the total from being lost.

The sensors/transducers are powered from the display with a two core coax cable that must not exceed 5m length. Wiring at the sensor is as below.



The sensor/transducer coax cable is connected at the transducer terminals indicated below. Care should be taken to make sure the upstream sensor is wired to the upstream terminals and so on. The sensor coax screens are joined and wired to the earth terminal.



Operation

Display screen

※ The left symbol indicates strength of ultrasonic signal.

Air bubbles and solids particles can decrease strength.

※ Ball type symbol indicates quality of ultrasonic signal (Q value)

Misalignment of the sensors can cause quality to be poor.

※ Battery symbol shows the power of battery.

When the symbol shows blank, the battery must be replaced. Insert new cell/s before removing old cell/s.

※ Valve symbol indicates flowrate is zero or below the lowest measurable flowrate.

※ Wrench symbol indicates malfunction existing and need repairing, contact Flowmetrix.

※ Arrows indicate from direction

Flowrate and Flow Total

The SafsonicB display is set up to cycle between Rate m3/hr only and Total m3 only.

Troubleshooting

Low signal strength or quality

1. Check sensor alignment and penetration into the pipe (penetration is marked during calibration).
2. Check sensor wiring, check screen are connected to ground terminal [SCREENS].
3. Check for air or solids in water.
4. Inspect sensors for fouling and clean if necessary.

Low battery

1. When battery reach one bar it is recommended to replace battery with same specification battery e.g. SAFT LSH20 D Cell.

No flow rate indicated for flow

2. If signal ok, flow rate too low for meter, i.e.<0.05m/s