

# "eBriefing on Resource Efficiency"

## Reed Consulting Bangladesh Ltd.



February 2015

## Selecting the appropriate water flow meter

**Mechanical water flow meters** are acceptable in most measuring sites in a factory except at the ETP. Wastewater may contain fibre, grit and other pollutants and textile factories report that mechanical meters installed on the inflow and outflow of ETP's need a considerable amount of maintenance to keep them functional because they are often clogged. Therefore for ETP outlet electromagnetic water flow meter is preferred. On the other hand in open drain ETP inlet system, ultrasonic water flow meter would give accurate results.



**Electronic smart meters** are the preferred option because they can relay their information to central monitoring and control units. These electronic meters are more expensive than turbine or mechanical meters but they are more accurate and have the advantage of removing 'human error' because the 'steps' of hand written log books and transcription of data into spread sheets are omitted.



In order to have 'measured' data quickly in your factory 'pump motor running hour counters' are a 'cheap', easy to install, temporary option for water use 'measurement' ( $Pump\ capacity\ (verified\ by\ portable\ flow\ meter) \times motor\ running\ hours = water\ volume$ ).



Water Meter type	Notes
<b>Mechanical</b>	These meters measure flow velocity, and calculate flow volume by multiplying velocity with pipe diameter. For accuracy the pipe should be filled with water and not contain air pockets.
<b>Electromagnetic</b>	These work as a magnetic field is applied in the pipe which results in a potential difference that can determine the amount of water passing through the meter. Electromagnetic flow meters can be used to measure most electrically conductive liquids with or without solids, including water, wastewater, sludge, slurries and pastes. They are suitable for industrial purposes including effluent treatment plants.
<b>Ultrasonic</b>	These meters contain an ultrasonic transmitter and receiver. The travelling time of sound between the two transducers is converted to the velocity of the water in the pipe. Flow rate is calculated from velocity and inner diameter of the pipe and the travel time of sound between two sensors. Ultrasonic flow water meters are sensitive to turbulent conditions and must be carefully installed
<b>Venturi</b>	These are widely used due to simplicity and dependability, can also be used for wastewater

For further information about engineering consultancy and waste and energy and water minimisation please contact our Principal Textile Engineer Mohammad Abbas Uddin [abbas.uddin@reedconsultingbd.org](mailto:abbas.uddin@reedconsultingbd.org)

**RCB provides consultancy in Energy Efficiency and Engineering Support, Process Improvement, Water and Waste Minimisation.**

**Reed Consulting Bangladesh Ltd.**

Plot 1 (3rd Floor), Road 13/C, Shahjalal Avenue, Sector 6, Uttara, Dhaka 1230, Phone : +88 02 8956976, Fax : + 88 02 8956915

[www.reedconsultingbd.com](http://www.reedconsultingbd.com)