Dual Tipping Bucket Flow Gauge

WATER FLOW

General Description

HyQuest Solutions' dual tipping bucket flow gauge TBL-70 is used for **measuring water seepage coming out of a pipe or a drain**. The unit is equipped with two distinct buckets to provide **best accuracy over a large range of flows**: a smaller bucket at the top of the gauge to measure at low flows and a larger one at the bottom to measure at high flows. Each bucket is connected to its own dual reed switch effectively enabling **redundant data acquisition** in two distinct data loggers, or providing data to two devices (e.g. a data logger and a counting display), etc.

Operation

The two buckets operate simultaneously up to 6 L/minute. At low flows where the large bucket is not full to tip, more accurate results can be obtained from the small bucket's reed switch output. At higher flows above 6 L/minute the smaller bucket at the top has to be removed by the user. Data is then generated solely by the larger bucket's reed switch output.

Applications

The TBL-70 is suitable for all applications where a water flow out of a pipe or similar outlet needs to be supervised. This may include

- Monitoring at basin outlets of any kind of industrial water, grey water or storm water retention basins
- Sewer network injections into a collection basin
- Drain output
- Water discharge out of a treatment or intermittent storage basin
- Pump testing

Main Features

- Non-corrosive materials
- Suitable for harsh environment
- Accurate readings at low and high flows
- 4 x M8 mounting brackets
- Easily cleaned and little maintenance needed

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Technical Specifications

Material	PVC Plastic and Stainless Steel
Resolutions	■ Metal bucket, top of gauge: 70 ml, up to 6 L/minute ■ PVC bucket, bottom of gauge: 0.5 L or 1.0 L (selectable), up to 25 L/minute

Accuracy

70 ml bucket		0,5/1 L bucket	
Flow Rate (L/min)	**Error**	**Flow Rate (L/min)**	**Error**
0.5-3.0	-3 %	0.5	-2 %
3.0-6.0	-5 %	1.0	-6 %
>6.0	NA	5.0	-10 %
		10.0	-14 %
		15.0	-18 %
		20.0	-20 %
		25.0	-22 %

Signal Out	■ 2 X dual reed switch, one for each bucket ■ Protection: Mechanical: silicon rubber potting; Electrical: varistor surge protection ■ Max capacity: 24 VDC (0.5 amp max) ■ Resistance: Initial contact resistance 0.1 Ω ■ Maximum tipping bucket frequency: 10^8 to 10^9 tips
Flow Rate	Maximum 25 L/minute
Level	Bulls eye level adhered to stainless steel base
Environmental Conditions	Relative humidity: 0 to 95 %; Temperature: -20 to +70°C
Dimensions & Mass	■ Base Length x Width: 390 x 235 mm (incl. mounting brackets) ■ Height: 468 mm (when 70 ml bucket installed); 390 mm (when 70 ml bucket removed) ■ Weight: 6 kg (packed 7 kg)

Accessories

iRIS dataloggers and data modems:
■ Robust housing
■ IP over one or two channels of your choice: xG / GPRS, satellite, IoT
■ I/O: analog, digital, SDI-12, Modbus
■ iLink software
■ Telemetry or cloud app

HydroTel™ Telemetry System: HydroTel™ is a leading-edge, high performance hydrological and environmental telemetry monitoring and database system that has proven itself in many demanding applications worldwide. It has been designed for data acquisition, data processing, alarm management, and above that as a remote telemetry system to control barrage gate and/or flood pump stations. Features: comprehensive range of output options for data export, presentation in the web or reporting; seamless interfacing with external modelling systems.

Custom Solutions:
HyQuest Solutions' engineering and fabrication workshop and experienced engineering staff can provide tailor-made, ready to deploy solutions for any of your monitoring requirements.

Please ask for details.

Reseller

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