

Open Channel Flowmeter
<Tough Flow “JIS FIT” Series>

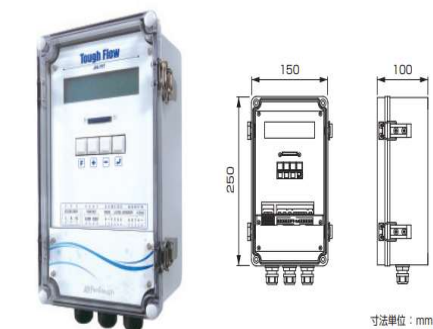
The Tough Flow 'JIS FIT' series
Open Channel Flowmeters designed in accordance with JIS (Japanese Industrial Standards)

- Flume Type / Weir Type Flowmeter --- JIS FIT (Fixed type)
Calculate flowrate based on the detected water level.
Weir type --- Triangular, contracted rectangular, and suppressed rectangular
Flume type --- Palmer Bowlus and Parshall

- Area Velocity Type Flowmeter --- JIS FIT-MS (Fixed Type)
Calculated by multiplying cross-sectional area by flow velocity

Tough Flow JIS FIT

Specifications



寸法単位：mm

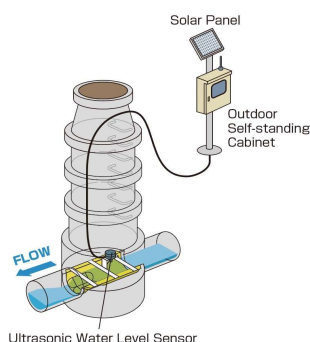


MS series

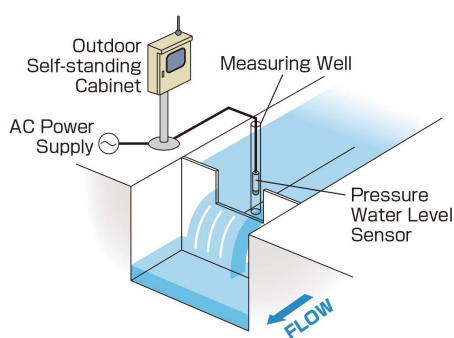
Display:	16 Characters × 2 Lines, LCD Cyclic Display Date/Time, Water Level, Flow Velocity (※1), Instantaneous Flow Rate/ Integrated Flow Rate/ Cumulative Flow Rate
Setup:	4-Key Input
Input:	1CH Water Level – Compatible with Ultrasonic or Pressure-Type Water Level Sensors 1CH Flow Velocity – Compatible with Ultrasonic Flow Velocity Sensor (※1) 1CH Rainfall – Compatible with 0.1 / 0.5 / 1.0 mm Rainfall Transmitters Volt-Free Contact Input: Minimum rating 10 mA
Calculation:	Based on JIS-Specified Formulas + Method and Dimension Input Channel Cross-Section Based on Shape Selection and Dimension Input (※1)
Output:	2CH for Integrated Flow and Water Level Alarm Photomos Relay: AC 200 V, 0.1 A Indicated flowrate output 1CH: 4-20 mA, Load Resistance 750 Ω or Less
Recording:	SD Card (CSV Format, 1 File per Day) Recording Interval: 1, 2, 5, 10, 15, 30, or 60-Minutes(Selectable)
Sealing:	Password Lock for Setting Mode, Data Backup for 20 years, Automatic Logging of Maintenance History
Material:	ABS and Polycarbonate Resin, IP65, 250mm × 150mm × 100mm Copolymer Polypropylene Resin, IP68, 247mm × 270mm × 175mm (※2)
Power Supply:	AC 100V to 200V, Power Consumption: 25W (AC 100V, 0.25A)or Less Solar Power Supply (※3) Battery (※2)

※1:Area Velocity Type Flowmeter ※2 : External Battery Type ※3 : Optional

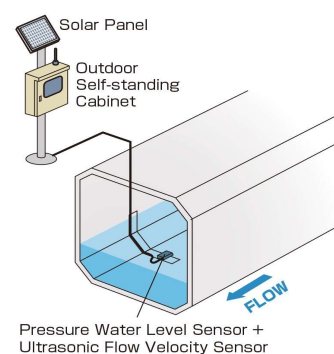
Flume Type Flowmeter



Weir Type Flowmeter



Area Velocity Type Flowmeter



Application For small-diameter pipelines $\phi 150 \sim \phi 400$

Advantages Well-suited for measuring flow in small-diameter sewer pipes carrying wastewater

Advantages Low maintenance requirements (Measured by ultrasonic water level Sensor)

Disadvantages Not cost-effective for medium to large installations

Disadvantages Not suitable for intermittent pumping systems or low flow conditions

Application For effluent from treatment facilities and irrigation channels

Advantages Capable of measuring a wide range of flow rates through the selection of appropriate shapes and sizes

Advantages Well-suited for clean and treated water measurement, offering high accuracy

Disadvantages Unsuitable for wastewater measurement due to susceptibility to contamination

Disadvantages Causes upstream water level increase due to weir obstruction

Application For all types of regular-shaped water channels

Advantages Simply install the water level and flow velocity sensors directly in the channel

Advantages Easy to install regardless of the channel size

Disadvantages A separate average velocity calibration is required for large-scale channels

Disadvantages Principally unsuitable for measuring flow under low water level conditions

Water Level Sensor

Ultrasonic Water Level Sensor



Pressure Water Level Sensor



Ultrasonic Velocity Sensor



Method:	Ultrasonic type
Measurable range:	0~1800mm (blind zone : 100 mm from the sensor surface)
Accuracy:	$\pm 1\text{mm}$ (0~400mm) 、 $\pm 2\text{mm}$ (over 400mm)
Temperature Compensation:	by Internal Sensor
Material:	PVC(Body, transducers) Ingress Protection Rating: IP68
Cable:	6-core Shielded

Method:	Gauge Pressure Type
Measurable range:	0~1m、3m、5m、10m、20m、30m、50m
Accuracy:	F.S. $\pm 0.1\%$
Temperature Compensation:	by Internal Sensor
Material:	SUS316L (Body , diaphragm) Ingress Protection Rating: IP68
Cable:	2-core Shielded (with Atmospheric Vent Tube)

Method:	Ultrasonic Doppler type
Measurable range:	$\pm 0.01 \sim 5\text{m/s}$ (Bidirectional)
Minimum Operating water level:	30 mm
Resolution:	better than 1 mm/s
Material:	PVC-U(Body, transducers) Ingress Protection Rating: IP68
Communication:	RS485 (Modbus RTU)
Cable:	6-core Shielded