FRM7000 Underground Pipeline Flow Meter

FEATURES

- Radar + Ultrasonic Dual Measurement Mode
- All-weather operation, unaffected by temperature, strong anti-interference capability
- Top-mounted horizontal pipe, reducing the impact of debris and silt
- Dual water level and dual flow velocity switching ensures blind-zone-free measurement
- IP68 waterproof design, suitable for various downhole environments
- Compact and stylish design, excellent cost performance
- Simple installation, minimal civil engineering work

OVERVIEW

FRM7000 radar ultrasonic flow meter is an intelligent online flow and water level monitoring device primarily developed for applications in urban underground drainage networks and river/sea outfalls. The device integrates the application features of radar and ultrasonic flow measurement, enabling blind-zone measurement of flow and water level in complex underground pipe network conditions, both full and partial pipe scenarios. It is also easy to install and maintain.
Data is output via an RS485 interface using the standard MODBUS-RTU protocol.
The radar ultrasonic flow meter mainly consists of a radar flow module, an ultrasonic flow module, and a control unit.

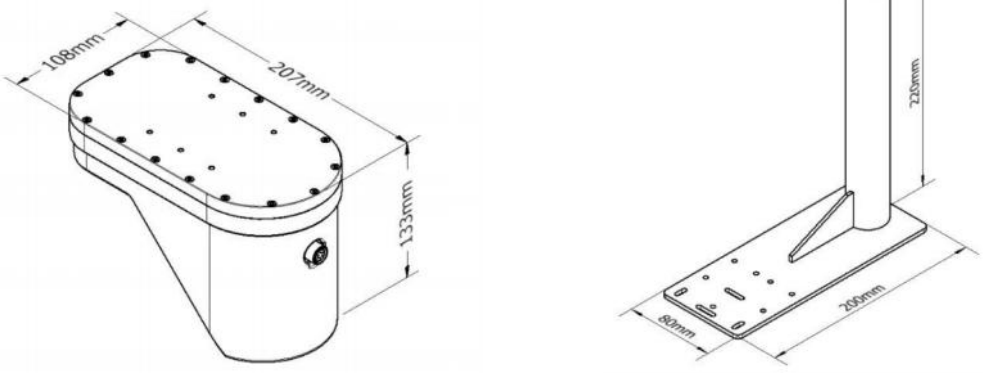
SPECIFICATION

Power Supply Voltage	DC 7～30V
Current (12V)	Dual-mode operation: less than 160mA; sleep mode: less than 1mA
Operating Temperature	-40°~85°
Waterproof Rating	IP68
Radar Transmission Frequency	Water level: 80GHz，Flow rate: 24GHz
Communication Interface	RS-485
Communication Protocol	MODBUS-RTU
Radar speed measurement range	0.03～20m/s
Radar speed measurement accuracy	±1%FS
Radar speed measurement resolution	0.01m/s
Ultrasonic speed measurement range	0.02～10m/s
Ultrasonic speed measurement accuracy	±1%FS±1cm
Ultrasonic speed measurement resolution	0.01m/s
Range range	0～10m
Range measurement accuracy	±3mm
Range resolution	1mm
Antenna type	Flow velocity: 14 x 32 ° Water level: 8 x 8 °
Interval time	1 ～ 5000min
Flowmeter dimensions (L×W×H)	207×108×133mm
Bracket dimensions (L×W×H)	100×90×74mm
Weight	Flow meter + bracket: 5.8kg
Housing material	Galvanized, stainless steel sheet

E-mail: info@cdsentec.com www.cdsentec.com

DIMENSION

Unit: MM



INSTALLATION

The selection of the equipment installation location is directly related to the accuracy of flow measurement. To obtain better measurement results, the measurement channel section should meet the following conditions as much as possible:

1. The installation location should be in an environment with a calm and stable water surface, free from backflow and eddies, and without obstructions within the measurement range.
2. The installation location should be straight, stable, and with concentrated water flow. Avoid installation near drain outlets, baffles, pipe confluences and bends, vertical drops, and downwells.
3. If installation near a pipe junction is necessary, and the water level in one of the pipes is higher, the flow meter should be installed near the pipe with the lower water level, at least 10 times the pipe diameter away from the inflection point.
4. The installed pipe section should be kept unobstructed to prevent the accumulation of floating debris.
5. During installation, the equipment should be kept parallel to the water flow direction, and the radar level gauge's illumination surface should be parallel to the water surface.