

SMR63

Radar Flow Velocity and Level Meter

RS485 Communication. All-in-One Compact Housing.

The Radar Flow Velocity and Level Meter is connected directly via RS485 communication interface, providing simple, reliable, cost-saving process data with remote monitoring, calibration, configuration and diagnostic capabilities. Housing in a robust IP68 proof enclosure, 1500 N tensile strength Kevlar reinforced cable, up to 1.2 km digital data transmission, the transmitter is ideally used in water/wastewater industry.

Advantages

- All-in-One Compact Housing, Built-in Transmitter and Sensors
- Robust IP68 Water Submersible Protection, Directly Installed in the Field, No Cabinet Required
- 80 GHz Superior Focusing Radar Beam, Beam Angle Less than 6° to Avoid Obstacles and Build up in Confined Spaces
- 120 dB Wide Dynamic Range to Accurately and Reliably Measure Poorly Reflective Liquides, Liquid down to Bottom level, Even with Surface Foam, Extremely Turbulent Flow, and Condensation on Antenna
- Built-in Temperature, Humidity Monitoring and Radar Level Module, Radar Velocity Module Failure Self Diagnosis Function
- Support 3 Axis Inclinometer to Monitor if Incorrect Installation or Position Changed due to Collide, Drop or Dismantle
- Advanced Intelligent Algorithm and Signal Processing Technology to Eliminate Echo Noise
- Surcharge Hydrostatic Level Sensor, Continue to Provide Uninterrupted Level Measurement
- Plug & Play, On-line Realtime Measurement
- Ultra Low Power Consumption, Ideal for Outdoor Applications
- 1500 N Tensile Strength Kevlar Reinforced Cable
- Surge Protection for Power and RS485 Communication
- RS485 Digital Communication, Minimize Cabling and Engineering Cost
- Standard Modbus RTU Protocol, Direct Connected with PLC, HMI
- Built-in tilt sensor, Auto Angle Compensation
- Not effected by Temperature, Rain, Snowfall, Turbidity, Suspended Solids, Vapor, Steam and Sand Storm
- Onboard Memory to Easily Calibrate and Configure Sensor at Lab and Distribute to Various Fields
- AQCFG Software Tool for Data Monitoring, Calibration, Configuration and Diagnosis

Applications

Stormwater, surface water, wastewater

Measurement Method

The sensor combines proven radar measurement technology with state-of-the-art spectral signal processing technology to provide a reliable and accurate way to measure velocity of flow.

Installation

Wall mounting, pole mounting



Specifications

General	
Output Signal	RS485 (Modbus RTU protocol), 19,200 bps, 8 data bits, no parity, 1 stop bit; 4~20 mA, HART Protocol (optional)
Data Resolution	16 bits (0.001% FS)
Surge Protection	1,500 VDC
Power	12 VDC, 145 mA
Protection	Polarity, Overload, Short circuit
Safety	CE, FCC
Radar Flow Velocity	
Frequency	24 GHz ; 80 GHz (optional)
Radar angle	12° (Azimuth) , 24° (Elevation)
Max. Measurement Distance	0.02~30 m
Measurement Range	0.02~15 m/s, bi-directional
Accuracy	±1% of reading
Resolution	1 mm/s
Min. Wave Height	1 mm
Operating Pressure	-1~3 Kg/cm ²
Operating Temperature	-40~85 °C
Response Time	10 secs
Calibration Interval	M12X1.5 plug fixed cable ; M12 connector, 5-pin
Connection	Typical 12 months
Housing Material	POM ; PVDF (optional)
Cable	Kevlar reinforced, UV resistant PUR cable, 1500N tensile strength
Dimensions	180(W)X162(H) mm (no hydrostatic level sensor) ; 180(W)X200(H) mm (includes hydrostatic level sensor)
Weight	transmitter: approx. 1.2 Kg (no hydrostatic level sensor), 1.5 Kg (includes hydrostatic level sensor) ; cable: 80 g/m
Radar Level	
Measurement Method	Radar
Frequency	80 GHz
Radar angle	6°
Measurement Range	0~15 m (SMR63-3) ; 0~30 m (SMR63-2)
Accuracy	±1 mm
Resolution	0.1 mm
Protection	IP68
Hydrostatic Level	
Measurement Range	0~10 m
Accuracy	±0.1% FS (SS316L); ±0.25% FS (Titanium)
Resolution	0.01% FS
Repeatability	±0.025% FS
Stability (annual)	±0.1% FS
Safety Load	3 X measurement range
Rupture	>4 X measurement range
Calibration Interval	Typical 12 months
Temperature	
Sensor	Pt1000
Measurement Range	-30~75 °C
Accuracy	± 0.1 °C
Resolution	0.01 °C
Repeatability	0.1 °C
Inclinometer Module	
Mesasurement range	0~180°, XYZ 3 axes
Accuracy	± 1°

Ordering

Codes

Measurement Range

Radar Velocity (0.02~15 ms) _____ 1

Radar Velocity (0.02~15 m/s)+Radar Level (0~30 m) _____ 2

Radar Velocity (0.02~15 m/s)+Radar Level (0~15 m) _____ 3

Sensor

Radar Velocity _____ 0

Radar Velocity+Radar Level _____ 1

Radar Velocity+Radar Level+Hydrostatic Level _____ 2

Radar Velocity+Radar Level+Hydrostatic Level + Temperature _____ 3

Cable Length (m)

5 _____ 005

10 _____ 010

Custom _____ 001~999

Cable Type

PUR _____

Housing

POM _____

Wiper

None _____

Explosive Proof

None _____

Wire Connection

Bare Wire _____ 0

M12 Connector _____ 1

Analog Output

None _____ 0

4~20 mA _____ 1

Optional

- Inclinometer Module

Installation

- BR63-1 Mounting bracket

Power

- ADP02 AC/DC Converter (110/220 VAC to 12 VDC)
- PWB01 AC Power Supply Box

Communication

- BOX01 IP68 4 Port RS485 Hub
- BOX02 IP68 8 Port RS485 Hub
- BTC01 IP68 Bluetooth Communicator (includes 3.6 VDC 13 AH Rechargeable Battery)

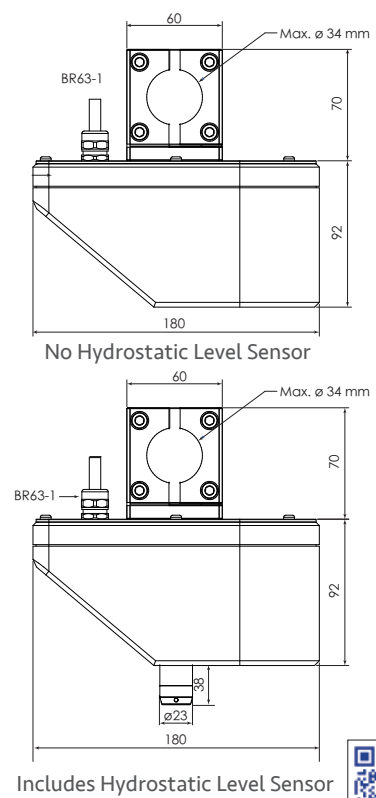
Cable

- CAB03-B RS485 Communication Cable (1.5 m or custom length)
- CAB06 Configuration Cable (1.5 m)
- CAB12 2 Port RS485 Cable (20 cm)

Software

- AQCFG Configuration and Calibration Software

Dimensions



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