

RSS-2-300W-QX Radar Flow Meter



Velocity Features

- Non-contact measurement of flow velocity
- Measuring range : Low speed 0.1-6.0m/s, High Speed 0.2-15m/s
- Accuracy up to $\pm 2\text{mm}$
- RS-485/232, SDI-12 Interface
- No influence from driftwood ,debris & Sediment concentration
- Low maintenance required

Level Features

- Non-contact measurement of level
- Measuring range up to 30 meters
- Accuracy up to $\pm 3\text{mm}$
- Insensitive to wind, fog, precipitation and temperature fluctuation
- Installation with minimal construction work

RSS-2-300W-QX is a revolutionary radar type flowmeter based on surface velocity and level measurement. RSS-2-300W-QX provides precise contactless measurement of surface flow velocity. Contactless radar technology enables quick and simple sensor installation above the water surface, and requires minimum maintenance.

Revolutionary Radar Flow Meter

RSS-2-300W-QX flow meter is used to monitor flow velocity of open channels such as rivers, irrigation channels or sewer systems, and for monitoring and control of hydropower plants and wastewater treatment plants. The flow meter is also suitable for various mass flow metering applications in mining processing plants, industrial installations, and, due to operation without moving parts and robust mechanical design, is ideal for measurement of flammable fluids and harsh chemical applications.

Reliable Measurement Accuracy

By introducing the superior radar technologies, measurement accuracy of radar flow meter is not influenced by air humidity (including fog), precipitation, air temperature, fluctuations, driftwood, debris & Sediment concentration etc. Further advantages include the low energy consumption, short measuring cycle, minor dead angles and the short mounting distance.

Technology

Velocity radar operates in K-band (at 24.125 or 24.200 GHz) and water level is measured by a pulsed radar sensor operates at 26GHz. Geolux RSS-2-300W surface velocity sensor provides flow speed readings 20 times per second over serial (RS-232, RS-485) and CAN interfaces. Integrated tilt sensor measures inclination angle of the sensor and the flow velocity measurement is automatically cosine-corrected according to the measured mounting tilt angle.

Open Channel Measurement

Unlike ultrasound-based flow velocity sensors, the radar sensor is immune to air temperature / air density changes. Since the radar is packed inside IP66-rated waterproof enclosure, it is perfectly suitable for measuring open channel flow. The radar can be mounted either above the stream or sideways. The radar supports multiple communication interfaces and protocols, which makes it easy to integrate in an existing SCADA system.

Industry Flow Measurement

Since the radar waves propagate through plastic materials, the radar can be used to measure flow speed inside plastic pipes/tubes within an industrial facility. RSS-2-300W-QX radar flow meter is also perfectly suited for use in various water/sewage processing facilities, hydro power plants etc.

RSS-2-300W-QX Radar Flow Meter

Measuring principle	Radar, Doppler and Impulse procedure	Vibration resistance	Mechanical vibrations with 4 g and 5 ... 100 Hz
Applications	River, stream, open channel, sewer network waste water discharge measurements	Transmitter housing material	Aluminium casting IP66
Radar energy	Velocity 27dBm, Level 1 mW max. 1 mm	Electromagnetic Compatibility	Conformity with CE and Part15 FCC directives and fulfills the RSS-210 regulations Pulse Energy 1mW max
Temperature sensitivity	max. 5 mm over the entire temperature range -40 ... +80 °C	OPTIONS	
Sensor response time	1 sec (typ), 5 sec (max)	External ultrasonic level sensor	order code HS9500
Cable entry	1/2 NPT	Signal cable	length specified in order
Supply current	Typ. 210mA / max. 250 mA DC	Installation arm and enclosure available	
Surge protection	Built in, 1.5 kVA		
Operating temperature	-40 ... +80 °C (storage -40 ... +80 °C)		

HydroSpan order code	RSS-2-300W-QX (radar level)	RSS-2-300W-QXC (ultrasonic level)
Measuring ranges	Velocity 0.1-15.0m/s, Level 30 meters	Velocity 0.1-15.0m/s, Level 30 meters
Accuracy	Velocity +-2mm ,Level +-3mm	Velocity +-2mm ,Level +-10mm
Output interface	- RS-485/232,SDI-12 interface - Baud rate 9600 bps - 8-bit, none parity, - 1 stop bit	- RS-485/232,SDI-12 interface - Baud rate 9600 bps - 8-bit, none parity, - 1 stop bit
Power supply	9 ... 27 VDC	9 ... 27 VDC
Communication Protocol	ASCII-S ,GLX-NMEA,Modbus	ASCII-S ,GLX-NMEA,Modbus
Enclosure Dimention	211mm x 190mm x130mm	211mm x 190mm x130mm
Beam angle	Velocity sensor 12° ,Level sensor 8°	Velocity sensor 12° ,Level sensor 14°

