

# Combined Velocity Stage Radar (300WL)



## Ideal for:

- Public works
- Emergency management
- Flood risk management
- Water management
- Government agencies

## High-precision non-contact open channel flow velocity and level meter

The Combined Velocity Stage Radar flow meter uses radar technology to provide precise contactless measurement of both surface flow velocity and water level. The integrated discharge calculation module uses the two measurements together with a pre-configured river channel geometry profile to calculate the total water discharge in real-time. Contactless radar technology enables quick and simple sensor installation above the water surface and requires minimum maintenance.



WaterFlow



WaterLevel

### HOW IT WORKS

Surface velocity measurement functionality is achieved by transmitting an electromagnetic wave in 24 GHz frequency range (K-band) and measuring the frequency shift of the electromagnetic wave reflected from the flowing water surface. The frequency shift is caused by the Doppler effect of the moving surface on the electromagnetic wave. As the relative speed between the radar sensor and the water surface increases, the detected frequency shift also increases, thus enabling the flow meter to precisely determine the surface velocity.

Radar level measurement is achieved by transmitting modulated radar wave in 77 to 81 GHz frequency range (W-band) and observing returns. Due to the modulation and detection process in the sensor, very precise measurements can be achieved, and the sensor is not dependent on the air temperature, humidity, or other parameters of the environment.

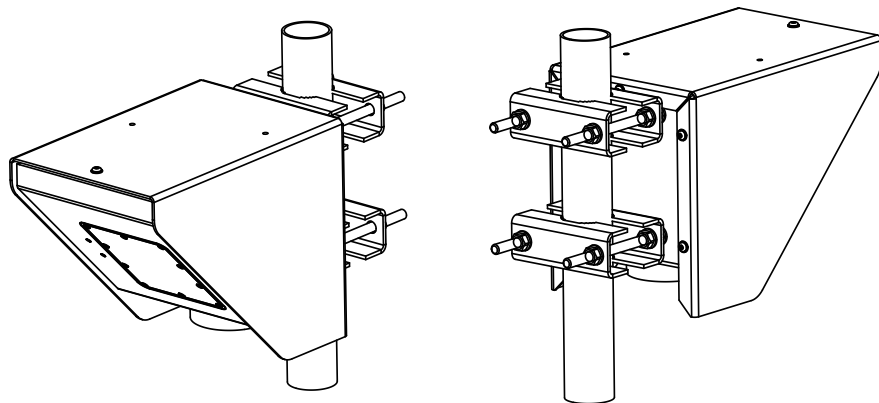


### ASK ABOUT: LT1 LOGGING TRANSCEIVER

Improve response time with our compact, IoT-connected LT1 logging transceiver. Collect, store, and transmit real-time data and alerts from your Combined Velocity Stage Radar for a complete hydrology solution.

## Detailed Specifications

COMPONENT	SPECIFICATION
Detection Distance	15 m / 30 m
Speed Range	0,02 m/s to 15 m/s
Speed Resolution	0,001 m/s
Level Resolution	0,5 mm
Level Accuracy	+/-2 mm
Sampling Frequency	1 sps / 10 sps optional
IP Rating	IP68
Serial Interface	1 x serial RS-485 half-duplex 1 x serial RS-232 (two wire interface)
Serial Baud Rate	1200 bps to 115200 bps
Serial Protocols	ASCII-S, GLX-NMEA, Modbus
Digital Outputs	SDI-12, 1x open collector, max 50 V 200 mA (supports pulse and alarm mode)
Analog Output	(optional) 4–20mA, programmable velocity, level or flow
Connector	M12 circular 12-pin
Power Input	9 to 27 VDC
Power Consumption	1,3 W operational; 0,235 W standby
Maximal Current	<750mA, 17mA (SDI-12)
Temperature Range	-40°C to +85°C (without heating or coolers)
Enclosure Dimensions	150 mm x 200 mm x 250 mm



## Key Features:

- Combined sensor includes both surface velocity radar and radar level sensor
- Contactless, above the water, flow measurement
- Wide velocity measurement range from 0.02 m/s to 15 m/s
- Compact, low-power design
- Wide input voltage range, suitable for solar applications
- Supports variety of communication interfaces for easy integration with existing telemetry equipment
- Rugged IP68-rated enclosure for outdoor applications and harsh environments
- Easy pole, wall, or enclosure mounting



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