

Model GEO-WDS3000

HIGH-PRECISION NON-CONTACT OPEN CHANNEL WATER DISCHARGE SENSOR

Highlights

- Contactless, above the water, flow measurement
- Surface flow velocity and Water level measured with radar sensors
- 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
- IP68-rated enclosure (for outdoor applications and harsh environments)
- Automatic mounting angle compensation (cosine correction)
- PC application for radar setup and live flow monitoring
- Direct connection to METEODATA / HYDRODATA datalogger
- Easy pole, wall or enclosure mounting



GEO-WDS3000



METEODATA / HYDRODATA
Datalogger with Integrated Comms
(3G / GPRS, Line, Radio or Satellite)

Product Description

GEO-WDS3000 water discharge sensor uses radar technology to provide precise contactless measurement of surface flow velocity, and to measure the distance from the sensor to the water level. Contactless radar technology enables quick and simple sensor installation above the water surface, and requires minimum maintenance.

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.

GEO-WDS3000 flow meter is used to monitor flow velocity and water level in open channels such as rivers, irrigation channels or sewer systems, and for monitoring and controlling hydro-power 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.

The surface velocity radar operates in the K-band (at 24.125 GHz), and provides 20 flow speed readings per second over serial interfaces. The level radar sensor operates in the W-band, between 77 and 81 GHz.

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.

GEO-WDS3000 radar sensor is certified according to both European and American standards, and is being used worldwide.

SPECIFICATIONS

GENERAL

Detection Distance	15 m / 35 m
Sampling Rate	1 sps / 10 sps optional
IP Rating	IP68

Radar Surface Velocity Sensor

Type	K-band 24.125 GHz Doppler radar
Range	0.02 m/s to 15 m/s
Resolution	0.001 m/s
Accuracy	1%

Radar Level Sensor

Type	W-band 77 to 81 GHz FMCW radar
Resolution	0.5 mm
Accuracy	±2 mm

INTERFACE

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, NMEA, Modbus
Digital Outputs	1 x 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

ELECTRICAL & MECHANICAL

Power Input	9 to 27 VDC
Power Consumption	< 6.5 W (typical 5.2 W)
Max Current	< 750 mA
Temperature Range	-40°C to +85°C (without heating or coolers)
Enclosure Dimensions	150 mm x 200 mm x 250 mm

STANDARDS & CERTIFICATIONS

EN 50293:2000
 EN 61000-6-2, EN 61000-6-4:2007
 EN 61000-3-2:2006+A1:2009+A2:2009
 EN 61000-3-3:2008
 EN 300 440-1, EN 300 440-2
 FCC Part 15 Subpart C
 CE approved

