

FREEWAVE

MODUSENSE™ WATER LEVEL MONITOR

Data Sheet

Monitor water levels remotely with drop-in solution that's quick and easy to deploy

Every day you make decisions based on data. Monitoring your water levels whether in a tank, river, or bore hole, the ability to monitor remotely gives you peace of mind. The data keeps you compliant with water use regulations. It alerts you when conditions change and you need to take action.

With the ModuSense Water Level Monitor solution you'll be able to avoid costly trips to the water location while monitoring and receiving information where you are, whenever its needed.

With ease of use and flexibility in mind

Quick and easy to deploy – the solution does not require calibration. It also includes an on-board battery backup for uninterrupted operation regardless of the weather conditions with seven days of autonomy, typically, depending on conditions.

Provides regular measurements for accurate monitoring – measurements are taken every fifteen minutes and logged using on-board memory in the gateway. Every hour, measurements are transmitted when satellite coverage is available to the data platform for processing, resulting in near-realtime alerts and trend reporting to help you identify changes in the environment being monitored.

Monitors a variety of water levels – the solution is used to accurately measure the depth of water in any



tank, river, dam, bore hole, or pumping station. The depth being measured is based on the placement of the sensor - for a standard tank this is the bottom of the tank, for a river the sensor is often pole mounted at a known reference height.

We're making it easier for you to connect to your data and make better informed business decisions.

Contact [FreeWave](#) today to find out how easily you can begin to monitor water levels in any of your operations.

SYSTEM SPECIFICATIONS

Model Reference	IloT Gateway Satellite (Swarm)
Satellite Communication	SWARM Tile01 137-138MHz Downlink 148-150MHz Uplink
Processor	Arm® Cortex®-M4
Memory	NOR Memory IC 32Mb SPI-Quad I/O
Onboard Sensors	GPS, Power

GPS Module Sierra Wireless XM1210, TCXO GPS+Glonass, GPS+BeiDou, GPS+Galileo Signal used for both position information and accurate time sync for data records.

Charge Circuit & Battery Tracking onboard battery voltage and the status output of onboard solar charging circuit to give a clear indication of how well the internal battery is charging

RS485 Water Level Sensor IP68 Stainless Steel 316SS body and 316L hydrostatic pressure diaphragm. Resolution: 1mm of H₂O depth Accuracy 0.5%, Full Scale Drift: 0.002%/°C (>100kPa)
Operating Range: 0~500m H₂O(50 Bar) -30°C ~+85°C, Certified CE, RoHS

Bluetooth Host	U-BLOX NINA B3, v5.0 (Bluetooth Low Energy) nRF52840
Power Supply	Built-in 6000mAH Li-polymer Battery Charging Voltage: 4.2V Rated Voltage: 3.7V, ULVO at 3.4V
Solar Panel	Epoxy encapsulated Monocrystalline 12W nominal output
DC Input & Charging	18~30VDC, 2A Max Current, MPTT Charger (19.4Vmp) Optional 12v DC Battery Input

CONNECTORS

Antenna - Satellite	Female SMA, Swarm
Antenna - GPS	Female SMA, GPS/GNSS Whip
Antenna - Bluetooth	Female SMA, Bluetooth Whip
RS485 Sensor Input	2x IP68 Circular Connector Socket, 4-position (vcc, gnd, data+, data-)
DC Input	IP68 Circular Connector Socket, paired with solar panel cable

PHYSICAL DESCRIPTION

Assemblby Flat (LxWxH)	330x260x70mm w/o antenna 545x260x70 with antenna
Assembly at 45° (LWH)	330x250x255mm without antenna 465x250x255 with antenna
Water Level Sensor	100mm long, 28mm dia. PE cable length to suit (at time of order only - do not cut)
Weight (fully assembled)	3.6kg excluding packaging

ENVIRONMENTAL

Operating Temperature	-20° C to 60°C
Storage Temperature	-40°C to 85°C

ORDER INFO

Part Number	BDL.WL.S2
Warranty	2 years