

# WL-16 Water Level Logger

Pressure transducer and USB datalogger combination



- Easy to operate and install
- Four sample modes: 10 times per second, interval, logarithmic, and exception
- PDA software simplifies field data collection
- USB and Serial communication options available
- Serial version is telemetry compatible
- No need to remove sensor for data collection or battery change
- Highly accurate water level measurements
- User programmable start and stop alarms, engineering units, and field calibration setup
- Unique 0-3' range for shallow water
- Wet-wet transducer eliminates vent tube concerns
- Automatic barometric pressure and temperature compensation

## Applications

Groundwater Monitoring, River/Stream Flow Studies, Lake/Pond Level Analysis, Flood Level Recording, Irrigation Canals, Infiltration/Inflow Studies, Wetland/Estuary Monitoring, Weirs and Flumes, Wave and Tidal Analysis, and MUCH MORE...

## Description

The WL16, Water Level Logger, is a datalogger and submersible pressure transducer combination designed for remote monitoring and recording of water level or pressure data. The water level logger can record over 81,000 readings and has four unique recording options, fast (10 samples per second), programmable interval (1 second to multiple years), logarithmic, and exception. Multiple depth ranges are available from 3' to 500' of water level change. A 25' vented cable is standard, and optional cable lengths are available from the factory up to 500'.

The WL16, Water Level Logger, is housed in a weather-resistant cylindrical enclosure, which slips inside a standard 2-inch PVC pipe. The WL16 is easily adapted with standard hardware for wellhead mounting, stream, or other installations. Two internal 9 VDC Lithium batteries will typically power the WL16 for approximately one year even if one of the batteries fails. A third onboard battery ensures your data in the event both 9V batteries fail. The WL16 includes Windows and PDA software, allowing easy upload of data to a laptop, desktop or PDA for transfer to spreadsheet programs.

The WL16, Water Level Logger's vented submersible pressure transducer is fully encapsulated with marine-grade epoxy. The electronics are encapsulated so that moisture can never leak in through O-ring seals or work its way into the vent tube and cause drift or sensor failure, as is the case with many other vented sensors. The vent tube is sealed directly to the wet-wet sensing element, and any moisture that may enter the vent tube from the housing will only contact the ceramic parts, not the electronics. Most federal agencies, universities, and environmental consultants recommend vented water level sensors for the best monitoring results.

The vented submersible pressure transducer uses a unique silicon diaphragm to interface between your water and the sensing element. The diaphragm is highly flexible and touches the sensing element, producing a sensor with exceptional linearity and very low hysteresis. A stainless steel micro-screen cap protects the pressure transducer diaphragm. The micro-screen cap has hundreds of openings, making fouling the sensor with silt, mud or sludge virtually impossible.

# WL-16 Water Level Logger

## Specifications

### Pressure Transducer

*Sensor Element:* Silicone Diaphragm, Wet/Wet Transducer  
*Ranges:* 0-3', 15', 30', 60', 120', 250', 500'  
*Overpressure:* Not to exceed 2 x full scale range  
*Accuracy:* 0.1% of full scale at constant temperature, 0.2% over 35°F to 70°F range  
*Compensation:* Uses dynamic temperature compensation 30-70 F. Automatic barometric pressure compensation  
*Housing:* up to 7" long x 1 3/16" diameter (small enough for a 1" well)  
*Materials:* Stainless steel housing and microscreen (hundreds of holes prevent fouling), electronics are fully encapsulated in marine grade epoxy, guaranteed not to leak

### Vented Cable

*Conductors:* 4 each 22 AWG  
*Material:* Marine grade polyurethane jacket, polyethylene vent tube, full foil shield  
*Shield:* Aluminum Mylar  
*Outside Diameter:* 3/16"  
*Temperature Range:* -22° to +185°F  
*Length:* Standard 25' (up to 500' from factory)

### WL16 Data Logger

*Memory:* Non-volatile flash memory  
*Power:* Two 9VDC Lithium Batteries  
*Battery Life:* Up to 1 year (depending on recording intervals)  
*Resolution:* 12 bit  
*Moisture Protection:* Silicon coating (prevents damage to electronics from condensation)  
*Temperature:* -40° to +185°F  
*Humidity:* 0-95% non-condensing  
*Storage Capacity:* 81,759 time and date stamped data points including battery voltage  
*Sample Modes:* High Speed (10 samples per second), Fixed Interval (Programmable from 1 sec to >1 year), Logarithmic, Exception  
*Data Overwrite:* Select memory wrap or unwrap (unwrap will stop logging data once memory is full)  
*Clock:* Synchronizes to the time and date of user's computer  
*Clock Accuracy:* 0.0025% or 1 minute in 1 month  
*Clock Format:* Month/Day/Year Hour/Minute/Second  
*Enclosure:* 1 7/8" diameter x 11.5" length (fits inside a 2" well), stainless steel UV protected PVC vented for barometric pressure compensation  
*Weight:* 1.6 lbs (with battery and 25' cable)  
*Communication Port:* WL16S: RS-232 4-pin circular connector  
WL16U: USB Type B  
Selectable Baud Rates:  
9600,19200,28800,38400,57600,115200

### Global Water Software

Compatible with Microsoft's Windows 98, ME, 2000, NT, and XP  
*Windows and Excel are trademarks of the Microsoft Corporation.*  
*Tabular Display/Printout*  
*Data in standard spreadsheet format (.CSV)*  
*Programmable alarm start and stop times*  
*Field calibration software included*

## Options

### WL16 Water Level Logger

Logger sits inside 2" well with enclosure rim on well casing top. Well cap completely hides logger. Includes PDA and Windows-based software. Water Level Range Options: 0-3', 15', 30', 60', 120', 250', and 500'. Includes 25' cable  
(Specify range and total cable length upon order placement)



### WLEXC Extra Cable

Cable length is measured from top of logger to bottom of sensor. After 25', up to 500'  
(Specify total cable length upon order placement)

### Temperature Output Option

0-50° C, Accuracy: 1% of reading, over 19,000 time and date stamped readings with this option.

### Titanium Option

Replace the standard stainless steel water level sensor housing with titanium

### Locking Well Cap

Fits over a 2-inch pipe.

### INO Inside Well Option

Entire logger fits inside the well. Provided with cable and hook to secure it to the well top.

### PRP Pressure Pipe Option

Sensor is housed in a 6" tube with 3/4" NPT male thread for logging pressure in municipal water systems. 10' cable standard. Calibrated in psi with ranges of 30 psi, 60 psi, 100 psi available.....  
PVC or Stainless Steel



### SWO Sewer Flow Option

Cover protects sensor from fouling and velocity effects in sewer, stormwater and irrigation pipe flows. Cover is attached to 6" X 24" stainless steel strap for mounting sensor on pipe bottom.

