



Communicator



Vented Data Cable



Submerge Troll

Stand Pole



Power Bank (Battery)



*Amphibian That Never Sleeps*

**Bulfro Monitech Private Limited**

**Digital Water Level Recorder (DWLR)**



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## Digital Water Level Recorder

DWLR is a system which complies with the CGWA Guidelines to measure groundwater level. It is designed to calculate the water column based on the hydrostatic pressure. This system is used for water e-Governance to monitor the water level in the aquifer as mandated by the CGWA. It comprises of a level-sensing troll connected to the Communicator via a data cable. The data from the communicator can be accessed via a web-based UI application or locally. The piezo sensor along with a data collector module is encased in a submerged troll. The data is collected at programmed time intervals and transmitted through the data cable to the communicator. The communicator transmits the data to the cloud server through GPRS or can be transferred to the local PC via a USB port. The data is displayed in Water Column, Water Level from Ground Surface and Water Temperature. A vented-type Troll if installed, also enables pressure and temperature compensation of the water column calculations.

## Other e-Governance Products

Bulfro offers a range of e-Governance and conservation products leveraged with IoT technology. We have developed innovative water governance equipment for groundwater and surface water monitoring, conservation and distribution. The products are highly accurate and reliable, guarantee data safety, are telemetry-enabled and offer live reporting. The product designs are rugged and energy efficient - best suited for remote installations. We are expanding our portfolio bearing in mind the Disruptive Policy of "Any Thing can be Monitored".

## DWLR Models

DWLR Model	Troll Signal OP	Troll Type	Data Transfer	Digital Reporting	Local Data Storage	Power Source
BDWLR-TB-1802	RS485	Vented	Telemetry	Yes	No	Battery
BDWLR-TG-1802	RS485	Vented	Telemetry	Yes	No	Grid
BDWLR-420mA-TGnV-1801	4-20MA	Non-vented	Telemetry	Yes	No	Grid
BDWLR-420mA-TBnV-1801	4-20MA	Non-vented	Telemetry	Yes	No	Battery
BDWLR-420mA-GnV-1801	4-20MA	Non-vented	Non-telemetry	No	Yes	Grid

## DWLR Ranges

Troll Model	Water Column depth (mtr.)	Troll Model	Water Column depth (mtr.)
TSB40	40	TSB160	160
TSB70	70	TSB250	250
TSB100	100	TSB300	300

## Battery (Battery powered option)

Nominal voltage	15 V DC
Ingress Protection rating	IP68

## Communicator (mounted inside the Stand pole)

Display	Display 4 rows x 16 characters with backlight
Menu operation	4 tactile keys
Power supply	Internal Battery or external Grid power 230±10% V AC
Operating temperature	0 to +50 °C (32 to 122 °F)
Storage temperature	-10 to +60 °C (14 to 140 °F)
Ingress Protection rating	IP65
Telemetry option	
Data transfer	Via in-built GPRS modem
Configurable parameters	Server address Data transmit frequency
Non-Telemetry option	
Local data storage	500 MB sufficient for more than 2 years
Data transfer	Via USB port
Software	Utility to transfer data to user laptop or computer

## Troll

Compensation and Output			
	Non-vented Troll	Vented Troll	
Compensation	No compensation	Pressure and Temperature	
Output to Communicator	4-20 mA DC	RS485	
Performance			
Accuracy	Non-vented Troll	Vented Troll	
	< ±0.5% of span	< ±0.25% of span	
Non linearity (IEC 61298-2)	< ±0.2% of span BFSL		
Repeatability	< ±0.1% of span		
Operating Temperature	-10 to +55 °C (14 to 131 °F)		
Mean temperature coefficient	Zero Point		Span
	≤ ±0.2% of span per 10 °K	≤ ±0.4% of span per 10 °K	≤ ±0.2% of span per 10 °K
	For measuring range > 0.25 bar	For measuring range ≤ 0.25 bar	
Long term drift	< ±0.2% of span per year		

## Web access (Telemetry option)

Login	Username and Password provided by Bulfro
Features	View records, View graphs, Download data