Bulfro
AQUA ESG

Water Sustainability
Digital Solutions

BULFRO
DIGITAL WATER LEVEL RECORDER
(DWLR)

Groundwater Level Monitoring — CGWA-Compliant

DWLR is a system which complies with CGWA Guidelines to measure groundwater level. It calculates the water column based on hydrostatic pressure and supports water e-Governance by monitoring the water level in the aquifer, as mandated by the CGWA. It comprises a level-sensing troll connected to the communicator via a data cable, with data accessible through a web-based UI application or locally.

The piezo sensor and data-collector module are encased in a submerged troll. Data is collected at programmed intervals and transmitted through the data cable to the communicator, which sends it to the cloud via GPRS or transfers it locally via USB. A vented-type troll, if installed, also enables pressure and temperature compensation of the water-column calculation.

WHY CHOOSE BULFRO DIGITAL WATER LEVEL RECORDER ?

- **CGWA-Compliant Groundwater Monitoring** - Designed to meet regulatory requirements with accurate digital water level recording.
- **Real-Time IoT Data Access** - Monitor groundwater levels remotely through cloud-based telemetry and web dashboards.
- **Reliable & Accurate Performance** - High-precision sensing with long-term stability for continuous field operation.

KEY FEATURES

- **High-Accuracy Water Level Sensing** - Measures groundwater levels with up to **±0.25% accuracy** using hydrostatic pressure sensing.
- **IoT-Enabled Remote Monitoring** - Transmits real-time data to the cloud via GPRS for anytime, anywhere access.
- **Telemetry & Local Storage** - Supports both cloud reporting and local USB data retrieval for operational flexibility.
- **Pressure & Temperature Compensation** - Vented sensor technology improves measurement accuracy under varying conditions.
- **Multiple Depth Range Options** - Available in models supporting water column depths from **40 m to 300 m**.
- **Rugged IP-Rated Design** - IP68 submersible sensor and IP65 communicator ensure reliable outdoor performance.
- **Long-Term Data Logging** - Stores years of historical records for trend analysis and regulatory reporting.
- **Battery or Grid Powered** - Flexible power options for remote as well as grid-connected installations.

WEB ACCESS (TELEMETRY OPTION)

Parameter	Value
Login	Username and password provided by Bulfro
Features	View records, view graphs, download data

DWLR RANGES — WATER COLUMN DEPTH

Troll Model	Water Column Depth (m)
TSB40	40
TSB70	70
TSB100	100
TSB160	160
TSB250	250
TSB300	300

Battery (Battery-Powered Option)	Value
Nominal Voltage	15 V DC
Ingress Protection Rating	IP68

COMMUNICATOR SPECIFICATIONS

Mounted inside the stand pole.

Parameter	Value
Display	4 rows × 16 characters, with backlight
Menu Operation	4 tactile keys
Power Supply	Internal battery or external grid power, 230 V AC ±10%
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 — Data Transfer	Via in-built GPRS modem
Telemetry — Configurable Parameters	Server address, data transmit frequency
Non-Telemetry — Local Data Storage	500 MB, sufficient for more than 2 years
Non-Telemetry — Data Transfer	Via USB port
Non-Telemetry — Software	Utility to transfer data to a user laptop or computer

TROLL — COMPENSATION & OUTPUT

Parameter	Non-Vented Troll	Vented Troll
Compensation	No compensation	Pressure and Temperature
Output to Communicator	4–20 mA DC	RS485
Accuracy	< ±0.5% of span	< ±0.25% of span

PERFORMANCE & STABILITY

Figures below apply to level-measurement performance.

Parameter	Value
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)
Zero-Point Temperature Coefficient	≤ ±0.2% of span per 10 K
Span Temperature Coefficient (range > 0.25 bar)	≤ ±0.4% of span per 10 K
Span Temperature Coefficient (range ≤ 0.25 bar)	≤ ±0.2% of span per 10 K
Long-Term Drift	< ±0.2% of span per year

DWLR MODELS

All models are CGWA Guidelines compliant.

S.No	Model	Description
1	**BDWLR-TB-1802**	RS485 troll signal, vented troll, telemetry, digital reporting, battery powered.
2	**BDWLR-TG-1802**	RS485 troll signal, vented troll, telemetry, digital reporting, grid powered.
3	**BDWLR-420mA-TGnV-1801**	4–20 mA troll signal, non-vented troll, telemetry, digital reporting, grid powered.
4	**BDWLR-420mA-TBnV-1801**	4–20 mA troll signal, non-vented troll, telemetry, digital reporting, battery powered.
5	**BDWLR-420mA-GnV-1801**	4–20 mA troll signal, non-vented troll, non-telemetry, local data storage, grid powered.

STRUCTURAL DESIGN OF DWLR

OTHER E-GOVERNANCE PRODUCTS

Bulfro offers a range of e-Governance and conservation products leveraged with IoT technology, developed for groundwater and surface-water monitoring, conservation and distribution. The products are accurate and reliable, guarantee data safety, are telemetry-enabled, and offer live reporting — rugged and energy-efficient designs best suited for remote installations, expanding on Bulfro's disruptive policy of “Any Thing can be Monitored.”

SERVICES

- Installation
- Data Management and Security
- Maintenance
- Legal Compliance

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