



BOREHOLE WATER LEVEL MONITORING FOR SUSTAINABLE

To continuously monitor the water level inside a borehole, enabling a farmer to manage water extraction sustainably, prevent pump damage, and ensure long-term water availability.



BOREHOLES CAN BE UNPREDICTABLE. OVER-PUMPING RISKS:

- Running the borehole dry
- Damaging submersible pumps
- Permanent loss of water table stability

Without visibility into the real-time level, farmers are operating blind. Manual checking? Inconsistent. Guesswork? Dangerous. What's needed is real-time, precise, actionable monitoring — before disaster drills through the budget.



A borehole level sensor (usually pressure or ultrasonic-based) is installed inside the casing to measure the static and dynamic water levels. The sensor continuously reports water depth to a monitoring unit, which can trigger alarms, adjust pump schedules, or even shut down the pump when the water level falls too low.





FUNCTIONAL WORKFLOW

➤ CONTINUOUS MONITORING

The sensor sends depth readings (e.g., in meters below ground level) at regular intervals.

Two key metrics tracked:

- Static level (resting water level)
- Dynamic level (drop during pumping)

➤ PUMP CONTROL

Integrated with pump controller to:

- Prevent dry running
- Avoid cavitation damage
- Automatically restart when levels recover

➤ THRESHOLD LOGIC

Minimum safe level:

- If water drops below this, the pump is paused to allow recovery.

Recovery rate tracking:

- Helps assess recharge speed — critical for drought or high-demand periods.

➤ DATA LOGGING AND ALERTS

History of level trends, drawdowns, and recovery can be:

- Viewed on dashboards
- Exported for environmental audits
- Used to guide future drilling, crop planning, or irrigation scheduling



KEY BENEFITS



➤ PUMP PROTECTION:

Prevents dry-run damage, extending pump life.

➤ WATER SECURITY:

Avoids over-extraction and resource depletion.



➤ LONG-TERM PLANNING:

Data helps predict seasonal borehole performance.

➤ SUSTAINABLE FARMING:

Aligns with water conservation practices and compliance requirements.

