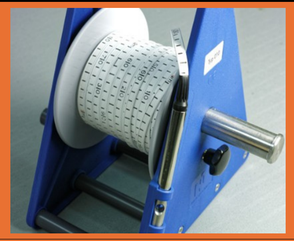
Evolution of Water Level Monitoring

					
	Dip Meter	LevelScout	KISS	DataNode	DataGateway
What is it?	• A device used to manually measure the water level in wells and boreholes	• High-quality Water Level Logger for groundwater monitoring	• Keep It Simple Sensing (KISS): An entry level telemetry system for measureing water level.	• Turns any sensor into a wireless unit (SDI-12, Modbus, Pulse)	• A cellular telemetry solution designed, developed and manufactured by Van Walt in the UK. • Designed for networks with multi-sensor requirements: (e.g. water level, pH, EC, redox, temperature, rainfall, water flow, soil moisture, turbidity, and other water quality parameters)
How do you use it?	• A probe on a tape is manually lowered into the well or borehole with audio/visual signals when it touches water	• LevelSCOUT is deployed typically on dyneema within the monitoring location, with a corresponding BaroSCOUT above ground for atmospheric compensation.	• A cabled sensor is deployed in the monitoring location with the KISS unit above ground for 15-minute measurements	• A cabled sensor is deployed in the monitoring location, and configured to take measurements by the DataNode	• Interfaces with the vanwaltDataNodes • Ideal for distributed environmental monitoring networks with single or multiple parameters
Where is my data?	• Data is manually recorded from the tape markings when the probe indicates it is in water. Normally the measurement is ToW.	• Stored on the logger - 100,000 records. • Downloaded manually via cable to laptop.	• Data is sent every 24hours to the vanwaltCONNECT server for visualisation and download.	• Data is stored on the DataNode for download via a radio dongle to a laptop. • DataNodes can be configured to work with a DataGateway for full telemetry.	• All data is sent to the vanwaltCONNECT server in near real-time for acesss, alarming, visualisation and download.
Typical Accuracy	•+/- 0.5cm (depends on tape resolution)	•+/- 0.05% (Full Scale)	•+/- 0.05% (Full Scale)	• Sensor dependent with multiple sensor options available	• Sensor dependent with multiple sensor options available
Advantages	• Inexpensive and quick solution for water level measurement • Easy to use • Used to validate digital sensors on installation for datum calculation.	• Accurate, reliable and lasts a lifetime • 3-year warranty • Replaceable battery • Can be converted to Telemetry • High frequency of logging (up to 0.8s/reading) • Free software for setup, data download and compensation.	• Easy to deploy • Uses vented sensor up to 100m, meaning no atmospheric compensation required • Datum calculation can be setup and amended online • Alarms for water level thresholds • Designed for 2 year life (battery/SIM/data/warranty). • Service option to recondition and redeploy	• Powered by two user replaceable AA batteries • External power option available for high power sensors • Multiple sensors can be associated with 1 DataNode • Robust Construction: Housed in a heavy-duty, IP68-rated aluminium enclosure.	• Compact solution with a front mounted solar panel for low maintenance and discreet installations • Acts as a central hub capable of receiving data from up to 32 DataNodes. • Robust Construction: Housed in a heavy-duty, IP68-rated aluminium enclosure. • Secure Data Storage: Utilises non-volatile, encrypted memory to ensure reliable and secure data retention.
Disadvantages	• Prone to human error • Can be a large unit depending on depth required • Single point in time measurement can miss trends	• Requires BaroSCOUT for atmospheric compensation • Requires manual download via cable	• Requires connectivity to a Cell tower	• Requires a Windows laptop for manual download and configuration	• Requires “line of sight” between vanwaltDataNode and vanwaltDataGateway • DataRelay option to extend range.
Cost Profile	£	££	££	££	£££
Configurations	• Multiple sizes available as standard (3-100m). • Custom sizes available on request	• Multiple water fluctuation ranges available (10 - 200 MH20) • Standard 216 SS construction with titanium option	• Multiple water ranges available (3-200 MH2O) • Standard 216 SS construction with titanium options • Conductivity option available • Narrow diameter 16mm option	• Monitoring frequency • MiniNode available for tight enclosures (e.g. within well-head). • Custom lengths available	• Monitoring frequency and upload configurable to suit monitoring requirements • Utilises LTE-M with 2G as fall back, with Satellite option