

iLevel FX: Datalogger Absolute Water Level Sensor

GROUNDWATER | HYDROLOGY | COAL SEAM GAS DEEP BORES | FLOOD

'New' - iLevel FX Datalogger/Sensor

The iLevel FX is a next generation HyQuest Solutions product through the integration of iRIS datalogging capability with an absolute pressure sensor. The advantages of this product are:

- Integrated barometric pressure compensation with the level reading, removes the need for subsequent post corrective data processing.
- An absolute submersible pressure sensor is used on the iLevel FX - lower maintenance and higher reliability compared to a vented sensor, as water intrusion and moisture collection in the venting tube is eliminated;
 - Dessiccants not required.
 - Well suited for deployment in high humidity environments.

General Description

Datalogging capability is provided - 8MB non-volatile flash memory (1 million time stamped data stored values). Operates in two modes:

- As a self-contained datalogger using the integrated level sensor or;
- As a SDI12 sensor to third party datalogger.

Sensor I/O - 1 x digital input and 1 x analogue input are provided.

Digital input - operates with either a clean contact activation to 0V, or else a dc input signal (min 3.6V, max 12V) referenced to 0V (GND).

Analogue input - non-isolated 12 bit uni-polar. Range 0 - 5000mV. Input impedance approx. 100kΩ. Referenced to 0V common. Internal 250ohm resistor provided for current (0-20mA or 4-20mA) input. Mode selected by the user with a jumper link.

When the **device is configured as a sensor**, the SDI-12 measurement command returns one or more values chosen from the following list. These are dependent on the configuration and level probe type:

- Raw Water Pressure
- Compensated Water Level
- Water Temperature
- Barometric Pressure
- Nominal Air Temperature (iLevel FX PCB temperature)
- Linear Conductivity
- Non-Linear Conductivity
- Supply Voltage
- Scaled Analogue Input

The Digital Input is not available in the SDI-12 measurement.

RS485 port using Modbus® protocol for communication between the iLevel FX and the pressure sensor means long cable lengths up to 1200m can occur.



RS232 DTE configured port to provide interfacing with laptops or external equipment such as a digital serial radio or iCE3FX to provide telemetry capability.

Enclosure is constructed from die-cast aluminium alloy with a hard grey powder coat finish. A neoprene gasket provides a seal around the lid. A pest-proof sintered brass vent is installed on the lower side of the enclosure to equalise the internal barometric sensor.

Power Supply - the power supply for the iLevel FX is an external dc supply between 9 and 16volts. Typically a 12V rechargeable SLA battery is used. A high efficiency switch mode regulator is used to supply all on board requirements.

Supply voltage can be monitored internally and is part of the SDI12 measurement response.

LED Indicators Four small LEDs are visible through the front panel to indicate unit status, SDI12, Modbus communication and Digital Input.

Connectors secure 6-way pluggable screw terminal block on the enclosure lid provides the power supply, SDI-12, analogue input and digital input connections. The submersible absolute pressure transducer connects via an external waterproof MIL spec connector.

Market Application

This product is ideal for deployment where excessively long cable runs are required. Particularly useful in deep groundwater bores or perhaps in a river situation where the monitoring site is situated above very steep river banks or gorge.

Monitoring groundwater in coal seam gas bores is a prime application for the iLevel FX.

Where there is high humidity environment and moisture impacts on vented pressure transducer systems, the iLevel FX is a suitable alternative.

Agricultural monitoring where perhaps water use is required to be monitored. A groundwater bore water level can be measured as well as, a water meter connected to the digital input and an additional sensor connected to the analogue input.

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