

Compact & reliable: iRIS 150FX Multi-Parameter Datalogger

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General Description

The iRIS 150FX is a small, compact datalogger featuring an LCD display and keypad. It can be connected to a wide variety of sensors, and features two analogue (0-5 V, 0-20 mA) inputs, two digital inputs, SDI-12 serial instrument support and a single digital output for alarm or control purposes.

Primary communication is RS232. This can be connected directly to a PC / laptop or else to a telemetry device for IP based communication or a radio or dial-up modem.

The iRIS 150FX is configured and managed using the iQuest software products, iLink 2012 or HydroTel™. It also supports remote firmware and software upgrades.

Models

To cater to a diverse market, two models are available:

- **iRIS 150FXC:** with an external 14 way terminal block fitted to the base of the enclosure
- **iRIS 150FXG:** with two NG12 compression glands providing cable access to a small 12 way I/O connector inside the unit

Both variants are supplied with an AA-size backup only lithium battery. Alternatively a D-size lithium battery can be supplied at extra cost instead of the AA for standalone use (this feature is I/O and application dependent).

Main Features

- **LCD / Keypad User Interface:** The iRIS 150FX has a small graphics LCD with 4 text lines of 19 characters, plus a small set of pictorial icons. This display, in conjunction with the 4 button keypad provides a simple method of viewing general and sensor information as well as running totals, etc.
- **Enclosure:** The iRIS 150FX is housed in a die-cast aluminum case that is powder coated. This provides a cost-effective, lightweight, resilient and waterproof casing whilst maintaining a compact footprint and physical size. Mounting is done through two hollow pillars outside the sealing zone of the enclosure.
- **RS232 Interface:**
 - One DTE configured DB9 male RS232 communication port is provided for interfacing with laptops or other external equipment. A rubber cap provides protection when the port is not in use. The RS232 port operates in an



auto-switching mode between terminal and binary modes at a default.

- A “telemetry” mode is provided where the port will revert to native iQuest protocol at a user-defined speed for telemetry applications.

Power Supply:

- Normally, the unit operates from an external 5-15 V DC supply. When the external supply is connected the internal battery is disconnected. To be able to use the SDI-12 instrumentation port, the external supply must be connected.
- The iRIS 150FX is fitted with an internal 3.6 V lithium backup battery. The size of this depends on the model. Both battery types (AA or D) may be changed in the field by the user. Replacements are available from HyQuest.



iRIS 150FX mounted in an iBox custom enclosure

- **LED Indicators:** Five status indicator LEDs are provided on the iRIS 150FX to the right of the LCD window. A blue status LED provides a visual indication of program operation and scan status. Three red LEDs provide feedback for the digital I/O and lastly, a single red LED provides indication of communication activity (either RS232 or SDI-12). NOTE: The I/O and comms LEDs only operate when external power is connected.
- **Logging Memory:** Non-volatile 8 MB flash storage of over 1 million time/date stamped data points. The storage mode is a circular buffer (i.e. the oldest data is overwritten when the buffer is full). NOTE: Earlier units (prior to serial number AG3-0643) have 2 MB of data storage.
- **Analogue Inputs:** Two non-isolated 12-bit uni-polar analogue inputs are included. Range 0-5000 mV. Input impedance approx 100 kΩ. Referenced to 0 V common. Internal 250 ohm resistors are provided for current (0-20 mA or 4-20 mA) inputs. The mode is selectable by the user via jumper links.
- **Digital Inputs:** Two non-isolated digital inputs operating with either clean contact activation to 0 V or a 5 to 30 V DC signal. Maximum input frequency is 5 kHz in frequency mode. Input debounce timing is user selectable by jumper links.
- **Digital Output:** One digital output configured as open-drain pull-down sinking to 0 V (max 300 mA @ 30 V). This can be used to switch a small external load such as a lamp or relay. On the iRIS 150FXC version this also controls a switched supply voltage output via an inbuilt transistor switch.
- The integral **SDI-12 interface** fully complies with the SDI-12 electrical standard. The firmware support level is to SDI-12 V1.2. NOTE: The SDI-12 interface is only operational when an external supply is connected.
- **Size:** 115 mm x 65 mm x 56 mm (4.5 in x 2.6 in x 2.2 in) (W x H x D)
- **Mass:**
 - iRIS 150FXC (connector) 420g (14.8oz)
 - iRIS 150FXG (glands) 410g (14.5oz)
- **Power Supply:** External dc supply: Range 5-15 V. Reverse polarity/over voltage protected
- **Internal backup lithium battery:** Standard AA size 3.6 V, 2400 mA/hr or alternatively a D size 19000 mA/hr for standalone use
- **Communications:**
 - Non-isolated DTE RS232 at 1200-115200 bps (default 115200 bps)
 - SDI-12 instrumentation port
- **Data Storage:** 8 MB flash memory (top 64 KB is reserved for firmware/software upgrade files). Total storage: 1,040,384 samples
- **Environmental:**
 - **Enclosure:** IP65
 - **Operating:** -10 °C - +70 °C
 - **Storage:** -20 °C - +85 °C

Reseller

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