

Simply Smart: iRIS 350FX Designed for Reliability

HYDROLOGY | GROUNDWATER | FLOOD | WATER QUALITY | CLIMATIC

iRIS 350FX Wireless (IP Capable) Datalogger

The iRIS 350FX has been designed and constructed for use in harsh outdoor and industrial environments. It is compact, cost effective and easily configured, with support for a wide range of instrumentation; the physical communication interfaces are:

- **RS232** port (DTE configuration).
- **3G modem, Ethernet** or **Iridium Satellite**.
- **SDI-12** serial instrumentation bus port.
- Serial **camera** (iRIS-CAM).
- **Modbus** slave protocol for SCADA.

Data may be accessed / downloaded in several ways:

- Direct **RS232** connection e.g. laptop, data radio or bluetooth adaptor.
- **FTP** file transfer (up to 2 pre-configured locations).
- **IP** based packet transfer (TCP/UDP).
- **SMS** text back (current sensor values).
- **Voice** annunciation (iRIS 350FXV only).

General Description

Configuration

The iRIS 350FX is directly configured via the RS232 connection using the provided iLink2012 software. iLink2012 is available as a Windows® desktop application or android tablet app. Alternatively the iRIS 350FX integrates with HydroTel™ telem-

etry which can be used to remotely configure. The datalogger can be configured to log a maximum of 20 user defined parameters.

Power Supply

The default power supply for the iRIS 350FX is an internal and/or external 12V rechargeable SLA battery. Two high efficiency switch-mode regulators are used to charge the battery and supply all other onboard requirements. Both the battery voltage and charger input voltage are monitored internally and are available to be logged, displayed or alarmed.

4 x Digital I/O Channels

Four configurable digital I/O channels are provided.

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

The **digital output** modes may be selected for either a switched 12V output, or open-drain sinking to 0V. Both modes are limited to 100mA.

4 x Analogue Inputs

The four analogue inputs are uni-polar, 16 bit resolution. Three input ranges are provided, 0-1.25V, 0-2.5V and 0-5V. Inputs are protected to 30Vdc current (e.g. 4-20mA)



inputs are supported with internal 100ohm sink resistors.

1 x Analogue (Excitation) Output

A variable (selectable as 0-5V or 4-20mA) excitation output is provided to energise passive instruments such as potentiometer type wind vanes or alternatively to send a derived analogue signal to other equipment.

SDI-12 Integral Interface

Complies with the SDI12 electrical standard and firmware support level is to SDI-12 V1.3.

LCD/Keypad User Interface

The iRIS 350FX has a small graphics LCD display. 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

Memory - Non Volatile

A total of 16MB of flash memory is provided. Of this, 8MB (1,084,576 samples) is allocated for logged data and/or image storage. On the iRIS 350FXV model, the second 8MB is used for audio file storage for up to two languages.

Processor

The iRIS 350FX processing core uses a high performance, multi-speed (max 100MHz) micro-controller. The CPU speed is varied to minimise power consumption, but when needed, handles intensive computing tasks.

Temperature Measurement

The iRIS 350FX (PCB) temperature is also monitored. This can also be read and logged as a scaled -30.0°C to $+70.0^{\circ}\text{C}$ (-22°F to $+158^{\circ}\text{F}$) range.

Real Time Clock/Calendar

This is backed by a replaceable on-board lithium battery to prevent loss of date/time if the main battery or supply is disconnected.

LED Indicators

A tri-colour LED is provided to indicate the iRIS 350FX general status. Eight other LED indicators allow diagnostics of I/O status and communication activity.

Connectors

Pluggable screw terminals fitted to the PCB provide all the connection points for the iRIS 350FX I/O and power supply. A DB9M connector is used for the main RS232 communications port. A standard SMA RF connector provides the antenna connection.

Enclosure

The case is constructed from die-cast aluminium alloy with a hard gray paint finish. A neoprene gasket provides the seal to achieve IP67 rating. Cable entry is through a set of four compression glands on the base.

RS232 Port

One DTE configured RS232 communication port is provided for interfacing with laptops or external equipment for example;

- Add an additional iCE3 FX modem to support dual IP communications.
- Configure to Modbus slave ASCII or RTU mode to integrate with SCADA systems.
- Connect a short haul serial radio to the primary datalogger to enable gateway communication to a secondary datalogger.
- Connect a digital serial radio to facilitate data transmission to HydroTelTM telemetry.

Basic Specification

- **Size:** 160mm x 130mm x 70mm (6.29in x 5.11in x 2.75in) (WxHxD).
- **Mass:** 1300g (2.86lb) including internal SLA battery.
- **Power Supply:** Internal and/or external 12V SLA battery. Lowest power mode

current 3mA. An integral charger accepts a 15-30Vdc input. A solar panel can be directly connected to the charger input. Over voltage and reverse polarity protected with self-resetting fuse.

- **Data Storage:** 8MB flash memory. A typical site with 2 parameters logged every 15 minutes plus battery voltage logged hourly will give almost 12 years of storage before data overwrite occurs.
- **Communications:**
 - Non-isolated DTE RS232 at 1200 - 115200 bps (default 38400 bps).
 - Wireless 3G modem. Or, on (PCB Rev 1.2+), a custom comms module.
 - SDI12 - instrumentation port.
 - Serial VGA camera proprietary connection (3.3V CMOS levels).
- **Environmental:**
 - Enclosure:** IP67
 - Operating:** -10°C to $+70^{\circ}\text{C}$ (14°F to $+158^{\circ}\text{F}$)
 - Storage:** -30°C to $+85^{\circ}\text{C}$ (-22°F to $+185^{\circ}\text{F}$)



Contact Us

General Enquiries (Australia)

Phone: +61 2 9601 2022

Email: sales@hyquestolutions.com.au

Web: www.hyquestolutions.com.au

General Enquiries (New Zealand)

Phone: +64 (0) 7 857 0810

Email: sales@hyquestolutions.co.nz

Web: www.hyquestolutions.co.nz

