

iRIS 350X IP Capable Datalogger



The iRIS 350X 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 key advantages of the unit include:

- Self-contained in a rugged water resistant enclosure
- Integral solar regulator and power supply/battery monitoring
- LCD/keypad style user interface
- Versatile mix of communication options including RS232 plus wireless, Ethernet or satellite.
- Optional camera or voice support



GENERAL DESCRIPTION

Customised Application Software

The iRIS 350X is normally supplied with standard software making it a configurable rather than programmable datalogger. It also supports custom software applications to interface with external devices such as intelligent flow meters, GPS receivers and PLCs using common protocols such as Modbus or NMEA. There are software variants available to match flow meters from leading flow meter manufacturers.

Connectors

A pluggable screw terminal block provides all the connection points for the iRIS 350X I/O and power supply. A DB9 male connector is used for the main RS232 communications port. A standard SMA RF connector provides the antenna connection for the wireless or satellite modem options.

Enclosure

The case is constructed from die-cast aluminium alloy with a hard grey paint finished. A neoprene gasket provides the environmental seal to achieve the IP rating. Cable entry is through a set of four watertight compression glands.

LCD / Keypad User Interface

The iRIS 350X 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 yet versatile method of viewing general and sensor information as well as running totals etc

Power Supply

The default power supply for the iRIS 350X is an internal and/or external 12V rechargeable SLA battery. A high efficiency switch-mode regulator supplies all onboard requirements. The battery voltage is monitored internally and is able to be logged, displayed and/or alarmed.

Solar Regulator (Charger)

The iRIS 350X also has a built in solar regulator/charger. This allows direct connection of a solar panel or external dc source. A high efficiency switch-mode regulator charges and manages the internal and/or external SLA battery. The charger input voltage is monitored internally and is able to be logged, displayed and/or alarmed.

Temperature Measurement

The iRIS 350X (PCB) temperature is also monitored. This can also be read and logged as a scaled -30.0°C to +70.0°C (-22 °F to +158 °F) range.

Processing Core

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

The on-board clock/calendar is fully Y2K and leap year compliant and software trimmable. The clock is backed up by a replaceable on-board lithium battery preventing loss of date/time if the power supply is disconnected.

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

Wireless 2G/3G Modem

The iRIS 350X is normally supplied with a high-performance 2G/3G wireless modem. This enables high-speed data transfer virtually on demand. Extensive software options give flexibility and minimise data traffic.

Communications Option Board Adaptor

A secondary communications adaptor is available for use when the wireless module is not fitted. This accepts custom communication modules which include Ethernet and embedded satellite (Iridium® 9602 SBD).

4 x Digital I/O Channels

Four digital I/O channels are provided. Each channel may be configured as either an input or an output.

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 maximum.

4 x Analogue Inputs

The four analogue inputs are uni-polar, 16-bit resolution. The variable input range is up to 0-5V, with protection to 30V d.c. Current (e.g. 4-20mA) inputs are also accepted using internal sink resistors selectable by jumper links.

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.

I/O Expansion Port

A "1-wire" I/O expansion port is provided for additional I/O to be added using third-party expansion modules.

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 10 years of storage before data overwrite occurs.
- **COMMUNICATIONS:**
 - Non-isolated DTE RS232 at 1200 - 115200 bps (default 38400 bps)
 - Wireless 2G/3G modem or Ethernet or Iridium® SBD modem.
 - SDI-12 instrumentation port.
 - Serial VGA camera proprietary connection (3.3V CMOS levels)
- **ENVIRONMENTAL:**
 - Enclosure:** IP66
 - Operating:** -10°C to +70°C (14 °F to +158 °F).
 - Storage:** -30°C to +85°C (-22 °F to +185 °F)

iQuest (NZ) Ltd reserves the right to alter the specification without notice.



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