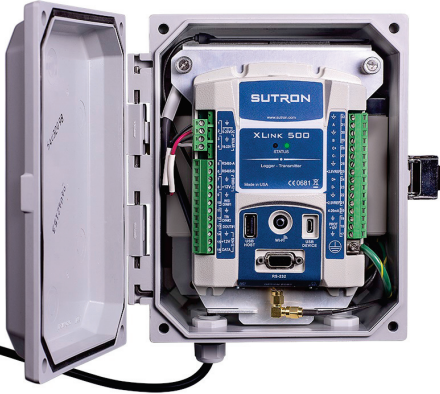




# AQUA SYSTEMS

**AQUA SYSTEMS** are stand-alone compact monitoring stations for hydrological applications.



## SUTRON SUTRON

### Sutron XLink 100/500

Logger/Transmitter  
with 4G or IRIDIUM Communications

Sutron's XLink product family offers a cost-effective Wi-Fi enabled datalogger with data transmission via Iridium or 4G. Ideal for use with multiple digital and analog sensors supporting basic or advanced monitoring applications. The product comes in two models tailored to fit different application and budget requirements.



### Communication and Data Management

## Monitoring stations for hydrological applications

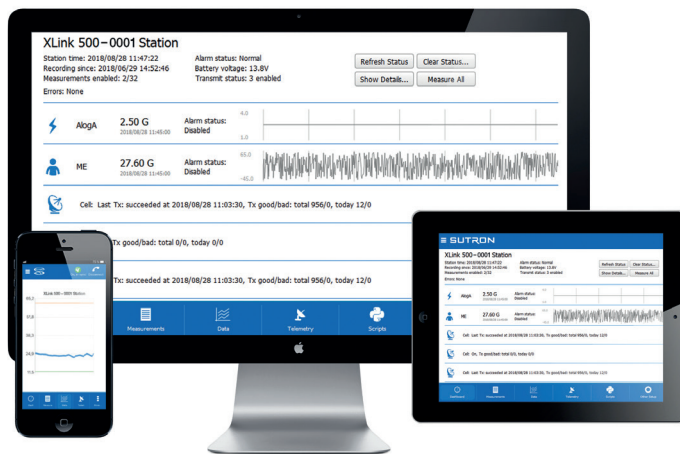
# Easy to use and flexible with field upgradeable modem, custom programming and two-way communication

## New on the XLink

- Plug and Play Modem
- Custom programming with Python scripting (available with XLink 500)
- Up to 32 independent measurements
- Expanded log up to 1,000,000 readings
- Plug-in USB flash drive (Type A Host)
- High resolution analog and digital measurements
- Support for internet protocols HTTP, TCP/IP and FTP
- HTTPS and FTPS capability added to Cellular-Mod-5 modems
- Secure communication using TLS 1.2 ciphers
- Independent RS-232 and RS-485
- Switchable SDI-12 power

## Applications

- Remote and urban environmental monitoring
- Surface water stream gaging
- Water quality monitoring
- Basic meteorological stations



LinkComm software and mobile app

## Product Feature Comparison

	XLINK 500	XLINK 100
Pluggable Cellular or Iridium	✓	✓
Wi-Fi	✓	✓
<b>NEMA-4 Fiberglass Enclosure</b>	✓	✓
Base Unit Metal Enclosure	✓	✓
Removable PowerTerminals	✓	✓
Python Scripting	✓	✗
Solar Regulator	✓	✗
Lightning Protection	✓	✗
Analog Inputs (SE, Diff, 4–20 mA)	✓	✗
Digital Input/Output	✓	✓
Protected +12 V	✓	✗
RS-485	✓	✓
RS-232 (DB9)	✓	✓
SDI-12	✓	✓
USB Host	✓	✓
USB Device	✓	✓
Diagnostics LEDs	✓	✓
Expansion Port	✓	✓



XLink 100 and XLink 500

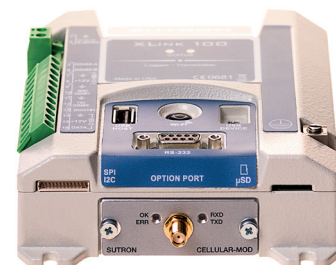
## Features/Benefits

### Plug and Play Modem Card

- Reduce modem setup time with automatic modem recognition—
- Field exchangeable, easily move from one telemetry type or service carrier to another
- Keep up with fast moving cellular/telecom technologies (e.g., 3G to 4G)

### Custom Programming with Python Scripts (available with XLink 500)—

- Supports applications beyond standard configuration, including custom measurements, transmission formats and user defined computations
- Modern, easy to learn scripting language with strong and growing developer community



XLink 100 with exchangeable Iridium or Cellular modem card

# Save time and reduce field visits with remote two-way communication

## Features/Benefits

Two-way communication and remote configuration—

All datalogger features and configuration options available remotely via cell

- Reduce time and cost of visiting field station to check, change, or download configuration or turn on/off instruments
- Improve data access and ask for missing data if transmissions are missed
- Complete network management is possible – move from single station management

Simple and intuitive software

- LinkComm software used with all Sutron XLink and SatLink 3 dataloggers
  - Common software reduces training requirements
  - Simple setup over Wi-Fi using a smart phone, tablet or PC—
- Pair with Hydromet Cloud, web-hosted software, to access and manage real-time data and alerts

USB flash drive

- Quickly modify configuration or upgrade firmware —
- Automatically download data, diagnostics and events—
- Load Python scripts

Collect more data more often while in alarm

- Reduce transmission costs by sending data more frequently only when data is needed at a faster interval—
- User definable alarm thresholds and adaptable intervals

Secure communication

- Send encrypted data over secure HTTPS
- HTTP(S), FTP(S) and Socket (TCP/IP) transmission protocols

Small foot print datalogger

- Reduce enclosure costs with smaller footprint datalogger
- Easy to conceal small datalogger and enclosure

Supports multiple interfaces and protocols

- Use with wide range of sensors, incl. SDI-12, RS-232, RS-485
- Simple configuration of SDI-12, SDI-12 over RS-485 and ModBus (Client or Server; RTU or ASCII) sensors
- Easily connect external modems or displays
- Supports common formats, including: ASCII, CSV, SHEF, Pseudobinary, OTT MIS



CELLULAR-MOD-5 and IRIDIUM-MOD card

## Ordering Part Numbers

Part #	Description
<b>BASIC (Logger only)</b>	
XLINK100-1	XLink 100 no modem
XLINK100-1E	XLink 100 no modem, NEMA 4-box
XLINK500-1	XLink 500 no modem
XLINK500-1E	XLink 500 no modem, NEMA 4-box
<b>CELLULAR</b>	
XLINK100-C5-1	XLink 100, HSPA
XLINK100-C5-1E	XLink 100, HSPA, NEMA-4 box, internal antenna
XLINK100-C5-1C	XLink 100, HSPA, NEMA-4 box, external antenna
XLINK500-C5-1	XLink 500, HSPA
XLINK500-C5-1E	XLink 500, HSPA, NEMA-4 box, internal antenna
XLINK500-C5-1C	XLink 500, HSPA, NEMA-4 box, external antenna

<b>IRIDIUM</b>	
XLINK100-IR-1	XLink 100, IRIDIUM
XLINK100-IR-1E	XLink 100, IRIDIUM, NEMA-4 box, internal antenna
XLINK100-IR-1C	XLink 100, IRIDIUM, NEMA-4 box, external antenna
XLINK500-IR-1	XLink 500, IRIDIUM
XLINK500-IR-1E	XLink 500, IRIDIUM, NEMA-4 box, internal antenna
XLINK500-IR-1C	XLink 500, IRIDIUM, NEMA-4 box, external antenna
<b>IRIDIUM DOD (RESTRICTED) (US ONLY)</b>	
XLINK100-IRD-1	XLink 100, IRIDIUM DOD
XLINK100-IRD-1E	XLink 100, IRIDIUM DOD, NEMA-4 box, internal antenna
XLINK100-IRD-1C	XLink 100, IRIDIUM DOD, NEMA-4 box , external antenna
XLINK500-IRD-1	XLink 500, IRIDIUM DOD
XLINK500-IRD-1E	XLink 500, IRIDIUM DOD, NEMA-4 box, internal antenna
XLINK500-IRD-1C	XLink 500, IRIDIUM DOD, NEMA-4 box, external antenna

## Accessories

<b>TELEMETRY PLUGGABLE MODEM CARDS</b>	
IRIDIUM-MOD-1	Iridium
IRIDIUM-MOD-1D (US ONLY)	Iridium DOD (restricted)
CELLULAR-MOD-1 (US ONLY)	Verizon LTE
CELLULAR-MOD-5	HSPA (3G)
<b>OTHER</b>	
8111-1113-1	Externally mounted RF coaxial lightning arrester to be used on a NEMA-4 enclosure variant (3 ft type N male – N male cable included)

NOTE:

1. Sutron is an authorized Iridium Value Added Reseller providing global services and applications.
2. All option cards have RF output port of female SMA type.

## Technical Data @ 25°C

(Specifications subject to change without notice)

### GENERAL INFORMATION

#### Dimensions

XLink 500-1, XLink 100-1

Inches: 4.5 x 6.2 x 1.6

cm: 11.4 x 15.8 x 4.1

NEMA-4

Inches: 7.3 x 9.5 x 5.2

cm: 18.5 x 24.2 x 13.2

Weight (XLink 500-1)

1 lbs. (0.5 Kg)

IP rating

IP66 (NEMA variants)

Operating temperature

-40 °C to +70 °C (-40 °F to +158 °F)

Compliance

CE, FCC, ISED

### POWER REQUIREMENTS Voltage

9–20 VDC; 10–16 VDC for SDI-12

Compliance

Quiescent

< 1 mA typ. @12.5 VDC

### SDI-12 (DEDICATED INTERFACE)

Compliance

V1.3 data recorder

Power

500 mA, short-circuit protected

### ANALOG – SINGLE ENDED

(XLINK 500 ONLY) Number of

inputs

2

### Range\*

0–5 V

Accuracy @ 25 °C

0.04 % typ. FS

Resolution

0.3 µV

### ANALOG – DIFFERENTIAL

(XLINK 500 ONLY) Number of

Inputs

2

Range\*

±39 mV, ±312 mV, ±2.5 V

Accuracy @ 25°C

0.04 % typ. FS over 2.5 V

Resolution

0.3 µV @ ±2.5 V scale

### ANALOG – 4–20 MA

(XLINK 500 ONLY)

Number of inputs

1

Range

0–22 mA Accuracy

@ 25°C 0.14 % FS

Load

Internal 200 ohms

### DIGITAL INPUTS / OUTPUTS

Number of inputs

2

Input type

0–15 V, optional low-level input Status,  
counter, frequency

### Max input frequency

10 KHz, optional debouncing, internal pull

Number of outputs

1

Output types

On/off/pulse

Open collector w/100 ohm limiting resistor.

100 mA, 15 V max

### OTHER INPUTS / OUTPUTS Precision

analog reference

(XLink 500 only)

2 terminals, 2.5 V, 10.0 mA (total) Switch

12V

1A, 1 port, overloaded protected

Protected 12 V (XLink 500 only) 0.75 A, 1

port

RS-485

1 port; SDI-12, ModBus, custom

communications with Python

RS-232

DB9; terminal interface, User interface,

ModBus, custom communications with

Python

USB Device (Micro B)

1 port; PC/MAC communication using

Sutron's LinkCOMM

USB Host (Type A)

1 port; setup, firmware update, log

download using a USB flash drive