OTT HydroMet

Insights for Experts

NEW! SUTRON XLINK 100 AND 500 LOGGING TRANSMITTER

Product Guide

MONITORING IN URBAN AND REMOTE LOCATIONS

Water Data

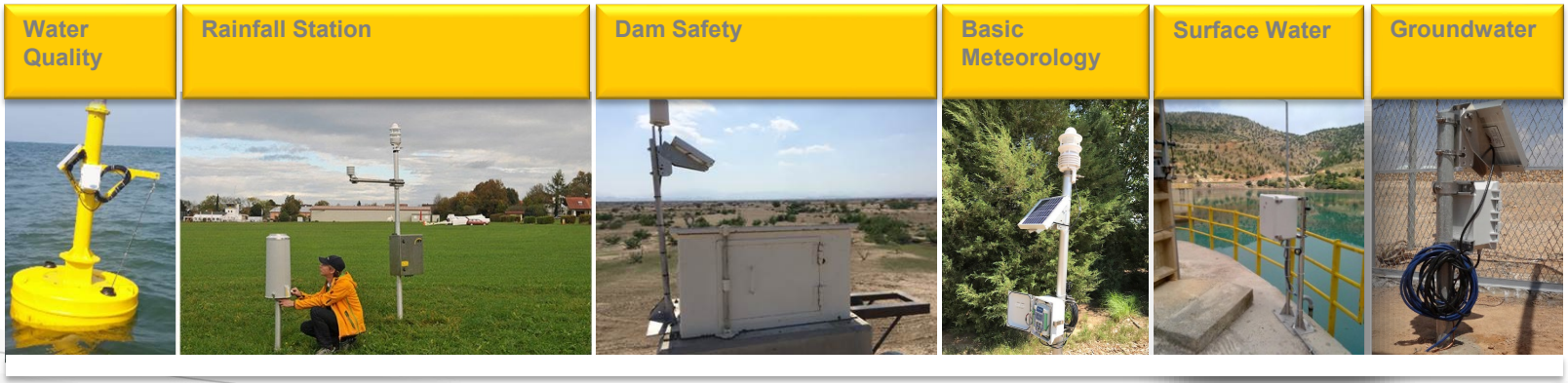
Weather Data

- OTT Hydromet sensors, dataloggers and system solutions serve applications where Water and Weather Scientists, Managers and Technicians need to:
  - Perform informed planning for monitoring networks and investments
  - Observe and collect real-time data from hydrologic or meteorological parameters
  - Identify long-term trends and impact of climate change
  - Rely on accurate measurements and data sets without gaps
  - Make emergency decisions quickly to protect lives, assets and the environment

NEW! SUTRON XLINK LOGGING TRANSMITTER

Expand, Upgrade, or Build New Monitoring Networks

- ***Connect*** most any analog or digital sensor(s)
- ***Collect*** measurement data you need, when you need it
- ***Process*** data using preprogrammed equations or program more advanced / custom functions
- ***Transmit*** data using common data formats (Binary, CSV, SHEF, OTT MIS...) or custom
- ***Send*** data anywhere using **cellular** networks via secure IP protocols (TCP/IP / HTTP(S) / FTP(S) or using **Iridium satellites**



XLINK…FITTING TO ALMOST ANY NETWORK

- Flexible and backwards compatible….
  - XLink 100 and 500 is backwards compatible with prior generation (CDMALink, IridumLink, GRPSLink, and HSPALink); supporting existing IOs and protocols, plus additional
- Two models (XLink 100 and 500) fit to application needs and budget constraints

XLink 100 ideal for **BASIC** applications using **digital** inputs (ex: 1-3 sensor inputs)

XLink 500 ideal for **BASIC to ADVANCED** applications using analog and/or digital inputs, custom configurations

(ex: logging, equations, control, or transmission), or requiring integrated solar power regulator or additional lightning protection

WHY XLINK 100 / 500?

- Setup logging transmitter in as little as **5-minutes** using sensor templates and smart phone APP
- Reduce site visits with use of **two-way communication**
- Keep up with telecommunication technology with **field upgradeable integrated** cellular or Iridium modem
- Expand your **network capabilities** with Python scripting: trigger samples or controls, customize transmission messages…
- Supports **commonly used sensors** from a wide variety of suppliers
- **Secure** configuration and transmission

CONNECT ALMOST ANY ANALOG OR DIGITAL SENSOR

- Use with wide range of sensors, including SDI-12, RS-232 and RS-485, from almost any manufacturer, including sensors with the following protocols:
  - SDI-12, SDI-12 over RS-485 and ModBus sensors (Master or Slave; RTU or ASCII)
- Easily connect external modems or displays

COMMON SENSORS

HYDROLOGIC:
- Water Level
- Discharge / Flow
- Water Quality

METEROLOGICAL:
- Precipitation
- Air Temperature
- Relative Humidity
- Air Pressure
- Wind Direction
- Wind Speed

HOW DOES THE XLINK SIMPLIFY YOUR JOB?

Simple and intuitive datalogger setup over Wi-Fi using a smart phone, tablet or PC

- Learn and use a single software program for all Xlink and SatLink logging transmitters
- Reduce sensor setup time with pre-programmed sensor templates
- Available on iOS, Android, Tablet, Mac and Windows PC

Quickly setup Lufft All-in-One Weather Sensor

LinkComm software using Sensor Template

UPGRADE OR CHANGE CONFIGURATION ON THE GO

- Quickly modify datalogger configuration or upgrade firmware using a USB flash drive:
  - Automatically download data, diagnostics and events
  - Load Python scripts
  - Extract data log files
  - Automatically upgrade firmware

USB Host (Type A) Port

Use USB Flash Drive to make updates without using a PC or Smartphone

COLLECT THE MEASUREMENT DATA YOU NEED WHEN YOU NEED IT

- Collect sensor measurement data at a user defined intervals (ex: every 15 minutes)
- **Reduce transmission costs** by sending data more frequent, only when data is needed at a faster interval
  - User transmission and logging intervals based on normal conditions
  - Adjust logging and transmission intervals in case of Alarm conditions
- Supports applications **beyond standard configuration**, including custom measurements with use of Python scripts

PROCESS MEASUREMENTS BEFORE TRANSMITTING

- Save time post processing data by automatically applying calculations (ex: discharge relationship table or adjust for mean sea level)
- Save cost by transmitting processed data instead of raw measurements
- Trigger alarms and controls based on processed data
- Apply custom Programming with Python Scripts (available with XLink 500)
  - Supports custom transmission formats and user defined computations
  - Modern, easy to learn scripting language with strong and growing developer community

$$Q=A \times V$$

$$Y=mx+b$$

SEND DATA ALMOST ANYWHERE USING COMMON OR CUSTOM FORMATS

- Send data to any server using common transmission formats including: ASCII, CSV, SHEF, Pseudobinary, OTT MIS
- Custom transmission formats possible using Python scripts
- Secure communication, send encrypted data using HTTP(S), FTP(S) and password protected Socket (TCP/IP) during transmission to server
- Send data to up to 8 destinations using cellular network
- Select up to 5 destinations for secure Iridium transmissions

REDUCE NUMBER OF FIELD VISITS WITH REMOTE ACCESS

Remote access and two-communication support:

- Download data
- View / access diagnostic data
- Turn on / off instruments
- Change measurement setups
- Complete remote network management possible

Reduce maintenance costs
Remote user access

Improve data capture
Ask for missing data

FIELD UPGRADEABLE PLUG-N-PLAY MODEM

Iridium or cellular field exchangeable, integrated, plug and play modem cards

- 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)

XLINK SUPPORTS CELLULAR AND IRIDIUM COMMUNICATION

	Cellular Mobile Networks	Iridium Satellite
Reliability	Depends on load/bandwidth	High
Two-way communication	Yes	Yes - latent
Data more often (ex: every 5-minutes)	Yes	Yes
Alarms	Yes	Yes
Bandwidth	High - Depends on plan (ex: supports sending pictures)	Limited
Operational Cost	Low to Medium - Depends on amount of data	Low to High - Depends on amount of data
Latency - Delay receiving data	Low	Low
Service Availability	Depends on service provider and coverage	Global - remote
Transmission Formats	ASCII Column, ASCII Sensor, CSV, MIS, Pseudobinary B-D, SHEF, SHEFFIX	
Transmission Protocols	IP protocols: FTP, HTTP, HTTPS	IP protocols: None

XLINK-100

Entry level logger optimized for simple meteorological and hydrological applications utilizing smart sensors

Removable Power Terminal Block - easily remove power

Smart sensors: **RS-485\MODBUS**

Digital IO: Tipping Bucket, Wind Speed and Direction, SCADA

USB Host connector for instantaneous setup and data retrieval without a PC

Smart sensors: **SDI-12** (switchable power)

Smart sensors: **RS232\MODBUS**

Expansion Port: Connect to SPI displays or sensors

Sturdy and **small** foot print saving you cabinet space

Low quiescence current (**<1mA** typ @12.5VDC)

LinkComm (**PC, iPhone or Android**) enables **secure** and easy remote configuration and data access and on-site connectivity via Wi-Fi, USB or Serial.

Field replaceable, **plug-n-play modems**

Flexible transmission (**HTTP(s), TCP/IP, FTP, SMS**) and data format (**SHEF, SHEFFIX, Pseudobinary B-D, MIS, ASCII, CSV**)

XLINK-500

Optimized for simple meteorological and hydrologic applications with broad or custom measurements requirement

Supports all XLink-100 functionality

Lightning protection, from nearby or indirect hits, on all pins.

24 Bit ADC for high resolution analog (**Single Ended, Differential and 4-20mA**) signal measurements.

Protected 12V – Separate power to sensors with cutoff protection.

Internal solar regulator to easily, and cost effectively, recharge your battery (handles up to 20 watts solar panels).

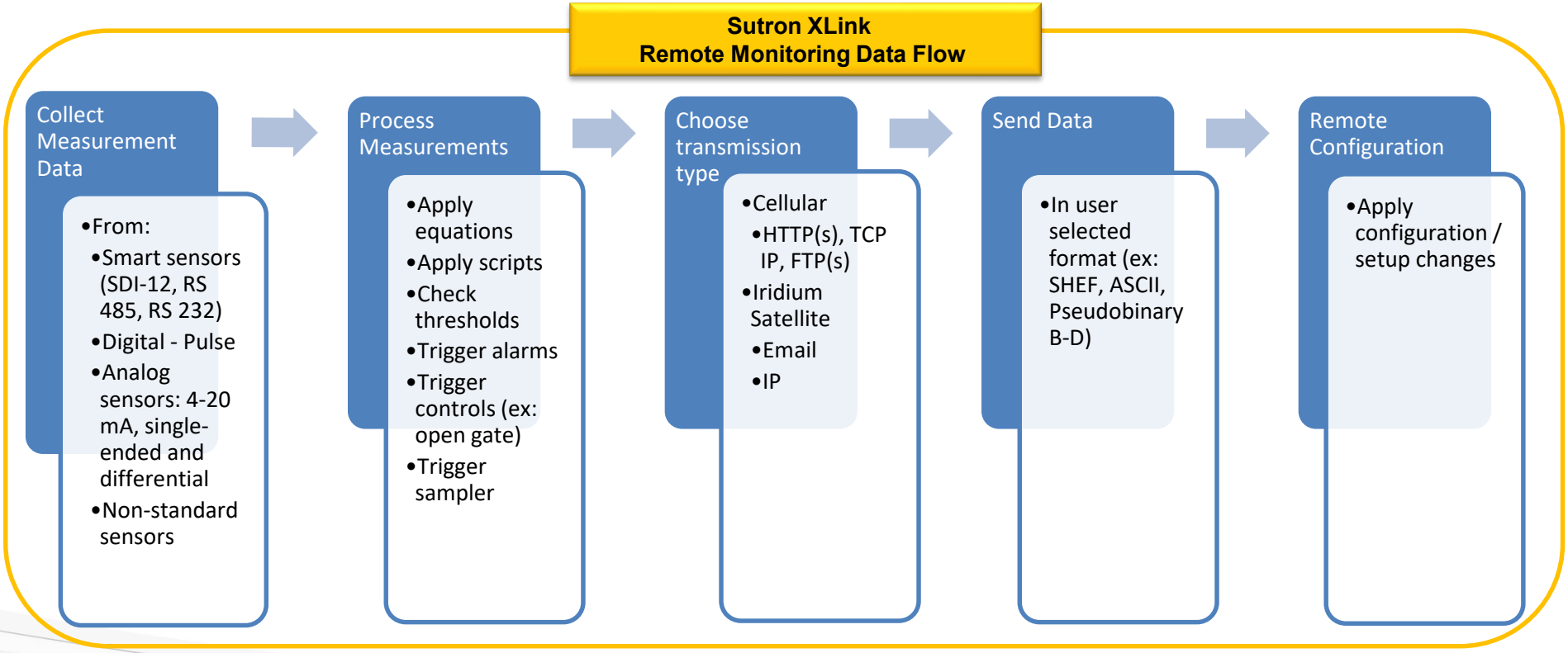
Custom programming using **Python**: Supports applications beyond standard configuration, transmissions and measurements.

RS-232 connection to external modems, displays and others through **Python.**

PRODUCT FEATURE COMPARISON

Sutron XLink Product Feature Comparison		
	XLink 500	XLink 100
Pluggable Cellular or Iridium	✓	✓
Wi-Fi	✓	✓
Fiber Enclosure	✓	✓
Removable Power Terminals	✓	✓
Python Scripting	✓	✗
Solar Regulator	✓	✗
Lightning Protection	✓	✗
Analog Inputs (SE, Diff, 4-20mA)	✓	✗
Digital Input/Output	✓	✓
Protected +12V	✓	✗
RS485	✓	✓
RS232 (DB9)	✓	✓
SDI-12	✓	✓
USB Host	✓	✓
USB Device	✓	✓
Diagnostic LEDs	✓	✓
Expansion Port	✓	✓
SD Card Slot	✓	✓

XLINK DATA FLOW SUMMARY



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