

# CDMA Link Logging Transmitter



Supports Modbus over Cellular Networks

## Overview

Sutron's Multi-Sensor Input Logger plus Extremely Flexible & Economical 2-Way CDMA now has WiFi capability for complete station set-up & data access.

## Features

1. Easy-to-use software includes setup program.
2. Terminal strip with screw terminals for I/O and power connections
3. Operates 8-16VDC
4. TCXO real-time clock with battery backup (+/-4ppm)
5. Built-in solar panel regulator
6. Support for up to 16 measurements of the following inputs:
  - ▶ SDI-12/RS485 (shared as is done in the Bubbler)
  - ▶ 5 Analog Inputs:
    - Two (2) single ended inputs (range 0-5V)
    - Two (2) differential inputs (range +/-39mV, +/-312mV, +/-2.5V)
    - One (1) 4-20mA input
  - ▶ 2 Digital Inputs. They can be used for tipping bucket, frequency, and on/off inputs
  - ▶ internal temperature
  - ▶ Battery voltage
7. Options to average or accumulate any measurement.
8. Lightning protection (Gas Tube) on all external inputs.
9. User specified equation on any measurement .
10. User specified alarm detection on any measurement.
11. 2 LED for verification/diagnostics.
12. Log capacity of 240K of data accessible via CDMA and direct connect
13. Switched Battery Output
14. Also operates as a standalone recorder without telemetry
15. USB slave for serial connection to PC. THE USB PORT WILL NOT SUPPORT typical USB devices like memory sticks, modems, etc.
16. RealTime Clock operates with internal lifetime battery.

## Telemetry via CDMA

1. Periodic transmissions at user set times with data in user selectable format (pseudobinary B, C, SHEF & ASCII)
2. Support for primary and secondary master stations via CDMA
3. Alarm transmissions as they are detected.
4. Diagnostics to help track of the amount of data being sent and the performance of the telemetry



Little Box. Big Data.

CDMA-Link dimensions are approximately the same as an iPhone.

5. Support for remote commands for data collection, maintenance or control of two on/off devices
6. Optional authentication of incoming messages to insure they are from a trusted source & optional authentication of messages sent to SUTRONWIN via CDMA
7. SMS transmissions if CDMA fails or in place of CDMA
8. Extremely affordable
9. CDMA modems use wireless cellular technology and provide data access in most areas where a typical cell phone works.









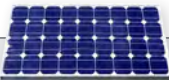
## Advanced Features


- ▶ Equation processing & multiple level averaging
- ▶ GUI Interface for intuitive programming (See LinkComm)
- ▶ Command-line interface for operation without custom programs
- ▶ Separate schedules for each measurement
- ▶ Upgrade firmware via RS232.
- ▶ Supports SDI-12, Analog, 4-20ma input
- ▶ Switched Power Output w/overload protection & Digital Output
- ▶ Gas Tube Protection on Inputs
- ▶ Max min or average computations on measurements
- ▶ LED operational status feedback
- ▶ WiFi access point (IEEE 802.11 b/g) with selectable Auto-Time-Out or Always-On modes

<b>SPECIFICATIONS</b>	
<i>Specifications subject to change without notice</i>	
<b>Measurement Interval</b>	1 second to 24 hours
<b>Number of Measurements</b>	16 supported
<b>ANALOG</b>	2 Single ended, 2 Differential, 1 4-20ma
<b>Single-Ended Analog</b>	0-5 V (with respect to ground)
<b>Number available</b>	2
<b>Input Range</b>	0 to 5V (with respect to ground)
<b>Resolution</b>	0.298 $\mu$ V
<b>Noise (p/p) @25°C</b>	12.0 $\mu$ V (p/p)
<b>Accuracy @25°C</b>	0.003% (typ) Midscale 0.004% Max
<b>Input Impedance</b>	> 1 MegOhm @25°C
<b>Differential Analog</b>	
<b>Number Available</b>	2
<b>Range (SW selectable)</b>	$\pm$ 39mV; Common Mode Voltage Range .3 to 3.9 Volts $\pm$ 312mV; Common Mode Voltage Range .3 to 3.9 Volts $\pm$ 2.5V ; Common Mode Voltage Range .1 to 4.9 Volt
<b>Resolution</b>	4.657 nV @ $\pm$ 39mv scale, 37.25 nV @ $\pm$ 312mv scale, 298 nV @ $\pm$ 2.5v scale.
<b>Noise (p/p) @25°C</b>	1.6 $\mu$ V (p/p) $\pm$ 39 mv / 312 mv scale 5.0 $\mu$ V (p/p) $\pm$ 2.5 v scale
<b>Accuracy @25°C</b>	0.004% max @ $\pm$ 2.5v scale
<b>Input Impedance @25°C</b>	>5 Meg Ohm 312mV FS Differential
<b>4-20 mA Analog</b>	
<b>Range</b>	0 - 22mA
<b>Resolution</b>	<1nA
<b>Accuracy @25°C</b>	0.02%
<b>Loop Power</b>	External
<b>Loop Resistance</b>	200 Ohm
<b>DIGITAL INPUTS/ OUTPUTS</b>	
<b>Digital Input 1, 2 Tipping Bucket Type</b>	Switch Contact Type. Pulse Width: 30ms - 120ms. Range: DC to 120 tips/min. (min).
<b>Digital Input 1,2 Frequency Type</b>	
<b>Minimum Frequency</b>	2.8 Hz
<b>Maximum Frequency</b>	10 KHz
<b>Input Range</b>	0 - 5 V
<b>Digital Input 1,2 Counter Type</b>	
<b>Maximum Frequency</b>	10 kHz (with no debouncing) 300 Hz (with debouncing)
<b>Input Range</b>	0- 5 Volts
<b>INTERNAL TEMPERATURE</b>	
<b>Range</b>	-40 to +60°C
<b>Accuracy</b>	$\pm$ 3 degrees

<b>ELECTRICAL</b>			
<b>Input Voltage</b>	8-16VDC 10 V minimum for SDI-12 sensor support Reverse power protected		
<b>Current Consumption</b>	0.5mA standby typ (all sensors unpowered) 8 to 20mA active typ		
<b>CDMA Transmission</b>	<50mA @ 12 Volts		
<b>Power Connection</b>	2 position terminal strip		
<b>SDI-12 Port</b>	3 position terminal strip		
<b>Red Warning LED</b>	Indicates setup or operation error		
<b>Green Heartbeat LED</b>	Indicates unit operating properly		
<b>Earth GND</b>	.2" screw terminal		
<b>ENVIRONMENTAL</b>			
<b>Temperature</b>	-40°C to +60°C		
<b>Humidity</b>	0-95% Non-condensing		
<b>KEY FEATURES</b>			
<b>Clock</b>	Internal real-time clock w/battery backup.		
<b>Accuracy</b>	$\pm$ 9.3 s /month(Max) -40 to +60°C. (First Year)		
<b>Accuracy</b>	$\pm$ 2.4 min /year (Max) -40 to +60°C. (First Year)		
<b>Accuracy</b>	$\pm$ 4.5 min / 10 years (Max) -40 to +60°C. (10 Years)		
<b>Log Capacity</b>	240,000 readings, flash memory		
<b>USB Port Connector</b>	Serial Communications / USB port		
Mini-B Male USB connector on logger to be connected to USB Type-A Male (Windows PC). LinkComm software included for USB port communications			
<b>Internal Solar Panel Battery Charger</b>	5 - 20W Panels. (Max 30 Watts) Automatic charge & float modes protect gel cell & acid batteries.		
<b>CDMA modem</b>	Modem factory installed, internal with RF output jack for antenna.		
<b>COMMUNICATIONS</b>			
<b>Interfaces</b>			
1 USB Mini-B Male (5 pin) Connector Serial Communications - USB. Not full function USB port. CDMA Modem SDI-12. RS485 (future support)			
<b>SDI-12 interface</b> V1.3 compliant recorder			
Supports up to 16 SDI-12 sensors Automatically combines requests to the same device +12V @ 500mA			
<b>DIMENSIONS</b>		<b>Operating</b>	<b>Shipping</b>
<b>Height</b>	5.3" (13.5 cm)	14 in. (35.6 cm.)	
<b>Length</b>	3.8" (9.7 cm)	10 in. (25.4 cm.)	
<b>Width</b>	1.3" (3.4 cm)	6 in. (15.3 cm.)	
<b>Weight</b>	1 lbs. (.46 kg)	2 lbs. (0.9 Kg)	
<b>NOTES:</b> Please refer to the XLink Product Family User Manual for full product specifications and variations.			

**ORDERING**

Part #	Description	
<b>CDMA Link Models</b>		
<b>CDMA Link-1</b>	Datalogger & CDMA Modem combined plus 4 Mounting Screws for Holes Located on the Back of the Unit. No enclosure.	
<b>CDMA Link-1E</b>	Basic CDMA Link w/ Internal Antenna & Mounting Ears for Wall includes 7AH Battery	
<b>CDMA Link-1C</b>	Basic CDMA Link w/ External Antenna Connector & Mounting Ears for Wall. Includes 7AH Battery (Antenna not included)	
<b>CDMA Link-1L</b>	Basic CDMA Link w/External Antenna Connector, Lightning Protection & Mounting Ears for Wall includes 7AH Battery (Antenna not included)	
<b>MOUNTING KITS</b>		
<b>Pole Mounting Kit</b>		
Part #	Pole Outside Dia.	Schedule 40 Pipe
<b>2911-1365-1</b>	2.38" Most Common	2.0"
<b>2911-1365-2</b>	2.88"	2.5"
<b>2911-1365-3</b>	1.90"	1.5"
<b>2911-1365-4</b>	1.66"	1.25"
<b>2911-1365-5</b>	1.32"	1.0"
<b>Din Rail Mounting Kit</b>		
<b>2911-1362-1</b>	Installs on Back of Unit (Din Rail not included.)	
<b>Wall Mounting Kit</b>		
<b>2911-1361-1</b>	Wall Mount Kit for Basic Unit	
<b>ANTENNAS</b>		
<b>1291-1033</b> (internal antenna)	CDMA/CDMA Antenna Indoor Mount, Adhesive Back, 12" Cable, SMA-M Connector	
<b>1291-1035</b> (external antenna)	CDMA Antenna, 3dB Omni (Cellular) N Type (F)	
<b>CABLES - For Basic Models SMA-(F)</b>		
<b>LL400-15-N-SMA</b>	Cellular Antenna Cable (15 ft) SMA to N	
<b>LL400-20-N-SMA</b>	Cellular Antenna Cable (20 ft) SMA to N	
<b>CABLES - for Enclosure Models N-(F)</b>		
<b>LL400-15-N-N</b>	Cellular Antenna Cable (15 ft) N to N	
<b>LL400-20-N-N</b>	Cellular Antenna Cable (20 ft) N to N	
<b>SOLAR PANELS</b>		
<b>5100-0412</b>	2 Watt Solar Panel	
<b>2271-1087</b>	2 Watt Solar Panel Mounting Panel	

<b>3911-1050</b>	5 Watt Solar Panel
<b>2271-1037</b>	5 Watt Solar Panel Mounting Bracket
<b>3911-1037</b>	10 Watt Solar Panel
<b>2271-1036</b>	10 Watt Solar Panel Mounting Bracket
<b>BATTERY</b>	
<b>5100-0030</b>	7 Ah Gel Cell Rechargeable Battery (NP7-12) 151mm x 65mm x 98 mm 
<b>GROUNDING KIT</b>	
<b>5100-0600-1</b>	Ground Kit w/8ft. ground rod, copper wire, clamps & plate.
<b>VERIZON CDMA FOR DOMESTIC USE</b>	
<b>VCDMA.ACT</b>	Activation, 1 time charge
<b>VCDMA.1MB.PLAN</b>	Monthly Plan, 1 MB
<b>VCDMA.20MB.PLAN</b>	Monthly Plan, 20MB
<b>VCDMA.1MB.ADDL</b>	Overage Charges / MB
<b>VCDMA.SMS</b>	SMS Each
<b>SPRINT CDMA FOR DOMESTIC USE</b>	
<b>SCDMA.ACT</b>	Monthly Plan, 1 MB
<b>SCDMA.1MB.PLAN</b>	Monthly Plan, 20MB
<b>SCDMA.1MB.ADDL</b>	Overage Charges / MB
<b>SCDMA.SMS</b>	SMS Each
<b>DATABASE MANAGEMENT</b>	
<b>SutronWIN</b>	Real-Time Web Hosting, Data Processing, Delivery, Storage, Alarms & Data Display
<b>9400-0400</b>	SutronWIN Client Set Up (1-time fee for new Account)
<b>9400-0401</b>	Custom Starter Page (optional)
<b>9400-0402</b>	SutronWIN Station Set Up (1-time fee/new Station)
<b>9400-0403</b>	SutronWIN /Station Annual Fee, first 10 Stations





# LinkComm Software for CDMALink

## Overview

For user-friendly communications and easy set-up/maintenance of your XLink Product (IridiumLink, CDMALink, etc.) install LinkComm software directly via a USB or remotely over cell, satellite or Wi-Fi connections. LinkComm runs on Windows PC, iPhone/iPad and Android platforms.

## Features

LinkComm can be used to:

- ▶ Set up an XLink station
- ▶ Download the log from XLink

- ▶ Upgrade XLink firmware
- ▶ Check XLink status
- ▶ Calibrate connected sensors

There are several ways to connect to an XLink:

- ▶ Directly via USB cable
- ▶ Remotely via TCP/IP
- ▶ Remotely through the Sutron Redirector
- ▶ Locally via XLink Wi-Fi

