

Sutron's Most Powerful & Modular Data Logger, Engineered for Maximum Value!



# XLITE 9210 DATA LOGGER

## 9210-0000

**32 MB Memory & 32 Bit Processor**  
**Removable Media Support:**

- ▶ SD Cards
- ▶ MMCards
- ▶ USB Thumb Drives



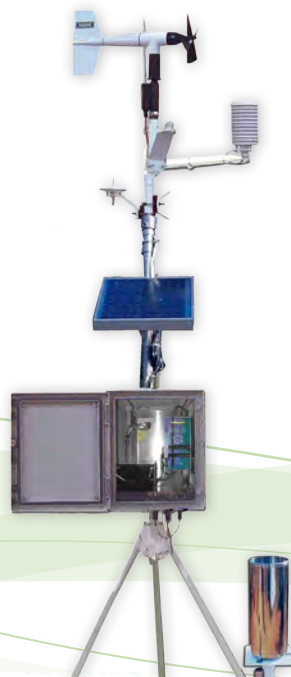
### Description

The XLite 9210 Data Logger, a high performance data recorder & communications device for UNATTENDED, REMOTE DATA ACQUISITION, CONTROL & COMMUNICATIONS, is a multi-tasking logger with a 32-bit processor capable of making measurements & communicating SIMULTANEOUSLY.

- ▶ Connect a wide variety of sensors to the system using built-in high-precision analog & digital interfaces as well as via RS232, RS485, & SDI-12.
- ▶ Expand sensor capacity via I/O modules plugged into XLite's I<sup>2</sup>C port.
- ▶ With 32 MB of Flash disk (& 32-bit processor) on board for data storage, the 9210 also has 4 communications serial ports for satellite transmitters, modems, radios & other serial communication devices.
- ▶ Retrieve data using any communication interface, USB or SD memory cards.
- ▶ View data, calibrate & adjust the XLite using its built-in LCD & buttons. Locally or remotely, all 9210 functionality is accessed through communications ports using easy to-understand set-up, data display & system maintenance GUIs.
- ▶ Easily customize with BASIC or C++ routines to invigorate any hydrological, meteorological &/or control application including:
  - ✓ Automatic Weather
  - ✓ Synoptic Weather
  - ✓ Climatic Weather
  - ✓ Airport Weather
  - ✓ Agricultural/AgMet
  - ✓ Oceanic, Tidal & Coastal
  - ✓ Flood Warning
  - ✓ Irrigation/Gate Control
  - ✓ Stream Gaging, Stage & Discharge
  - ✓ Flow Monitoring
  - ✓ Rainfall Stations
  - ✓ Water Distribution

### Features

- ▶ Built-in I/Os
  - ✓ 8 digital I/Os & 10 Analog inputs
  - ✓ Expandable I/O capacity using modules
- ▶ BROAD SENSOR SUPPORT:
  - ✓ Analog & Digital Sensors (expandable w/add-on modules)
  - ✓ SDI-12 Sensors
  - ✓ Serial Sensors (RS-232 and RS-485)
- ▶ 32 MB EXPANDABLE FLASH MEMORY Standard for Log & Config Files
- ▶ Built-in ETHERNET
- ▶ Multiple Telemetry - 4 SIMULTANEOUSLY!
  - ✓ GOES, INMARSAT, METEOSAT, INSAT, more!
  - ✓ VOICE/DATA MODEM
  - ✓ LOS RADIO
  - ✓ MODBUS
  - ✓ IRIDIUM
- ▶ Wide Operating Temperature (-40 to +60°C)
- ▶ Remote Access & Control (XTerm Software)
- ▶ Flexible Scheduling
- ▶ Custom Programming (BASIC, C++)
- ▶ Battery Operated, Low Power (<3.0 mA quiescent)
- ▶ Secure access (user names & passwords)



# XLITE 9210 DATA LOGGER

## 9210-0000 (-2B & -3B)

### Features Detail

#### ▶ Unparalleled Sensor Support

XLite provides unparalleled sensor support through expansive I/O capabilities & built-in program libraries. XLite supports a wide variety of measurement types: single voltage, differential voltage, resistance, 4-20mA, frequency, counter, binary, binary alarm, grey-code binary, smart serial (RS-232 and RS-485), SDI-12, etc.

Most Sensors are supported specifically by name using an XLite Sensor "Block" from the extensive built-in library. Support for new sensors not already in the Sensor Library can be easily added using Xpert Basic. More complex custom processing tasks also can be added using C++ (required development tools are available for free from Microsoft).

#### ▶ Robust Logging

XLite boasts 32 MB built-in memory expandable via removeable media. Logged data is compressed and not affected by changes to the Setup. System events are logged independently of measurement data.

#### ▶ Flexible Scheduling

EACH MEASUREMENT CAN BE INDEPENDENTLY SCHEDULED. Sample intervals can be set from 1 sec. to 24 hr., in 1-second increments. Built-in functions to support min, max, average, & accumulation calculations included.

#### ▶ Event Driven Processing

Digital inputs can be configured to trigger measurement processing, including logging and telemetry transactions.

#### ▶ Easy to Use Display

XLite provides a 2-line LCD character display & 3 front panel control buttons, making it very simple to view data & make minor Setup changes in the field.

#### ▶ Intuitive Set-Up

System Setup & configuration uses Sutron's XTerm, with the same interface as Sutron's Xpert (based on Microsoft Windows CE, intuitive & easy to use).



### XLite Ordering

9210-0000-2B	XLite, basic
9210-SL2-2B	XLite with SatLink
9210-0000-3B	XLite with 4 additional ports
9210-ENC-B	XLite within rugged enclosure
9210-SL2-ENC-B	XLite & SatLink within enclosure
<b>EXPANSION ACCESSORIES</b>	
8080-0002-1	Xpert Digital I/O Module, 8 channels
8080-0002-4	Xpert Digital I/O Module w/surge protection & 24" cable
8080-0003-1	Xpert Analog I/O Module, 6 channels, 24 bit
8080-0003-3	Xpert Analog I/O Module w/ surge protection & 24" cable
8080-0005-1	Voice Modem Module
8080-0007-1	Xpert Analog I/O Module, 10 channels, 16 bit, built-in surge protection
6661-1275-1	Enclosure for XLite (empty)
6661-1276-1	Enclosure for XLite w/SL2 (empty)

### SatLink2 & XLite

XLite can be ordered with or without an enclosure and packaged with or without SatLink2 GOES Transmitter/Logger.

ENCLOSURE FEATURE	9210- ENC- B	9210-SL2-ENC-B
Enclosure for 9210 only (6661-1275-1)	✓	
Enclosure for 9210 & SatLink2 (6661-1276-1)		✓
Size: 14.13" x 12/26" x 6.13"	✓	✓
3 DIN rail mount optional equipment inside (ie/ I/O modules, modem setc)	✓	✓
Protection Board Mounting Holes	✓	✓
3 digital, 4 analog, VREF, SW'D 12, 4 SDI-12 Input Power & a phone line (RJ to Terminal block) supplied	✓	✓
3 PG-9 and 2 PG-11 plugs	✓	✓
Cable strain relief fittings for additional wires	✓	✓
Single point grounding connector	✓	✓
GPS and RF-out connections		✓
RF-out configured for panel-mounted Polyphase Lightning Protection (in RF-out & ground connections)		✓



# XLITE 9210 DATA LOGGER SPECIFICATIONS

<b>DIMENSIONS</b>	11"x6"x3": Aluminum, IP52 drip resistant when installed vertically. Suitable for gauge house, shelter, NEMA enclosure	<b>SDI-12</b>	Dedicated SDI-12 V1.3
<b>WEIGHT</b>	3.0 lbs.	<b>COMMUNICATIONS</b>	4 RS-232 ports Up to 4 of the following types: SIMULTANEOUSLY: Satellite Radio, LOS Radio, Data & Voice Modem, Direct Connect MODBUS
<b>TEMPERATURES</b>	Operating: -40°C to +60° (extended temperature range available*)	<b>ANALOG INPUTS</b>	10 Inputs single ended, or up to 5 differential, expandable using external I <sup>2</sup> C modules, 16 bits
<b>DISPLAY (VIEWING) TEMP.</b>	-25 ≤ T ≤ +60 °C	<b>OUTPUT</b>	+12VDC SW power available
<b>SUPPLY VOLTAGE</b>	8-16 VDC recommended, 20 V max	<b>DC EXCITATION OUTPUT</b>	+2.5, +12V Expandable using external I <sup>2</sup> C modules
<b>VOLTAGE MEASUREMENT</b>	5 V single ended ± 2.5 V differential	<b>I/O INTERNAL PROTECTION</b>	Outputs internally protected against short circuits.
<b>REFERENCE VOLTAGE</b>	2.5 Volts	<b>OPERATION MODE</b>	Operation mode is software selectable w/ frequency, analog & counter inputs.
<b>POWER CONSUMPTION</b>	Quiescent: < 3.0 mA	<b>DIGITAL INPUTS &amp; OUTPUTS</b>	8 digital I/O lines 2 input only 6 bi-directional 1 high frequency 8kHz ▶ Supports shaft encoders, tipping buckets, counters & binary inputs. Software Control of switched 12VDC power. ▶ Expandable I/O using external I <sup>2</sup> C modules ▶ 2 low level for tipping bucket or wind speed/wind direction without amplifier. Includes CMOS.
<b>TYPICAL AVERAGE</b>	3 mA @ 15 min sample intervals of shaft encoder	<b>SHAFT ENCODERS</b>	Quadrature output encoder (3 max.) uses 2 digital inputs each.
<b>BATTERY BACKUP</b>	Internal lithium backup battery (for clock, not required for logged data) 2 years min		7 bit gray code encoder (1 max) uses 7 digital inputs
<b>TCXO REAL-TIME CLOCK</b>	Real-time clock accuracy better than 10 seconds per month (-40°C to +60°)		Expandable using external I <sup>2</sup> C modules
<b>WATCHDOG TIMER</b>	System resets upon microprocessor failure	<b>TIPPING BUCKET</b>	Input: 100 Kohm pullup for switch closure software de-bounced uses 1 digital input each
<b>AMBIENT RH</b>	0 to 95%	<b>COUNTER INPUTS</b>	Input Frequency: 1 channel @ 8kHz max, 7 channels @ 1 kHz max, with 32 bit resolution. Expandable by external I <sup>2</sup> C modules.
<b>MEMORY</b>	32 MB Flash Memory for log & configuration files. Expandable! 16MB Flash Operating System 32 MB RAM	<b>FREQUENCY ACCURACY</b>	± 0.1%
<b>SAMPLE INTERVALS</b>	Multiple Sample Intervals set from 1 sec. to 24 hr. in 1-second Increments	<b>ACCURACY RATIO METRIC</b>	± 0.01% of full scale
<b>DATA RETRIEVAL</b>	RS-232 Ports, Memory Cards	<b>ABSOLUTE ACCURACY</b>	0.1% -40 to +60°C
<b>ETHERNET</b>	802.3 10BaseT	<b>INPUT RANGE</b>	0-5 V full scale
<b>REMOVABLE MEDIA</b>	SD Cards, MMC Cards, USB Thumbdrives		
<b>DISPLAY</b>	2 line by 20 character alphanumeric LCD		
<b>EXTERNAL DISPLAY</b>	Full feature Windows display		
<b>SERIAL PORTS</b>	4 RS-232 ports, 1 RS-485 port		

\*Specifications subject to change without notice. Please contact the Sales Administrator at (703) 406-2800 or your Sutron Sales Manager.



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# XLITE 9210 DATA LOGGER XTERM COMMUNICATIONS

*Sutron's XTerm communications program allows any PC to remotely setup and operate an Xpert or XLite - without using a front panel.*



## Features

- ▶ Remote operation of Xpert or XLite
- ▶ Automatically displays the graphic display of the Xpert or XLite
- ▶ Sends mouse clicks to the Xpert or XLite as if you were pressing the touch screen
- ▶ Easy file transfer to allow uploading and downloading of setups, programs, and data files
- ▶ Set the clock of the Xpert or XLite with a single button
- ▶ Export the log to your PC
- ▶ Communicate to an Xpert or XLite via RS232 com ports 1-9 at up to 115200 baud.
- ▶ Supports direct connect modems, and keyed half duplex radio systems
- ▶ Communicate to an Xpert or XLite via a TCP/IP network.
- ▶ Communicate over the internet by using XTerm as a proxy
- ▶ Automatically prompts for login account and password when needed.
- ▶ Display system information regarding running processes, threads, and memory usage
- ▶ Also available for Windows Mobile & pocket PC PDAs

## Applications

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## XTerm Screen

No special installation is needed for XTerm. Simply copy it to any folder on your PC.

To setup, use the controls on the screen to select the com port, baud rate, type of hardware (direct, modem, radio, TCP/IP) and related values. Then select OK and Xterm will begin operation with the type of communications you have selected.

