XLite 9210B Datalogger & Controller

1/12/2016

Overview

Designed for maximum value and functionality, the XLite 9210B is a high performance data recorder and communications device ideal for remote real-time data acquisition, control, and communications. The XLite 9210B datalogger has the ability to simultaneously take measurements and transmit information for a wide range of applications.

XLite 9210B without Enclosure
9210-000-2B

XLite 9210B with Enclosure
9210-ENC-B

XLite 9210B Applications

- Meteorology and Climatology
- Agrometeorology
- Oceanography
- Aviation (AWOS)
- Flood Warning
- Water Level and Flow Monitoring
- Water Quality
- Hydrology
- Air Quality
- Visibility
- Geotechnical
  - Dam Safety
  - Structural Stability
- Energy
  - Solar Farm
  - Wind Farm

XLite 9210B Features

- Support for SD or USB memory
- 32MB Internal Flash Memory
- 32-Bit Processor
- Multiple Communications Simultaneously
- Sensors connect to the system via analog and digital I/O modules that plug into the I2C port as well as via RS232, RS485, and SDI-12.
- 4 communications serial ports for satellite transmitters, modems, radios & other serial communication devices.
- Retrieve data using any communication interface, USB or SD memory cards.
- Wide Operating Temperature (-40 to +60°C)
- Built-In Ethernet
- Built-in Display/Buttons for viewing data
- Built-in 10 channel A/D, 8 channel DIO

XLite 9210B Features

2x20 Backlit LCD display

Menu and Data Entry keys

B Terminal Strip: 8 channel Digital I/O, RS485, SDI-12

A Terminal Strip: 10 channel Analog input, DC Power connection

Earth Connection

3 RS232 Ports, I^2C Bus to additional I/O modules, Optional PCMCIA card

XLite 9210B Specifications

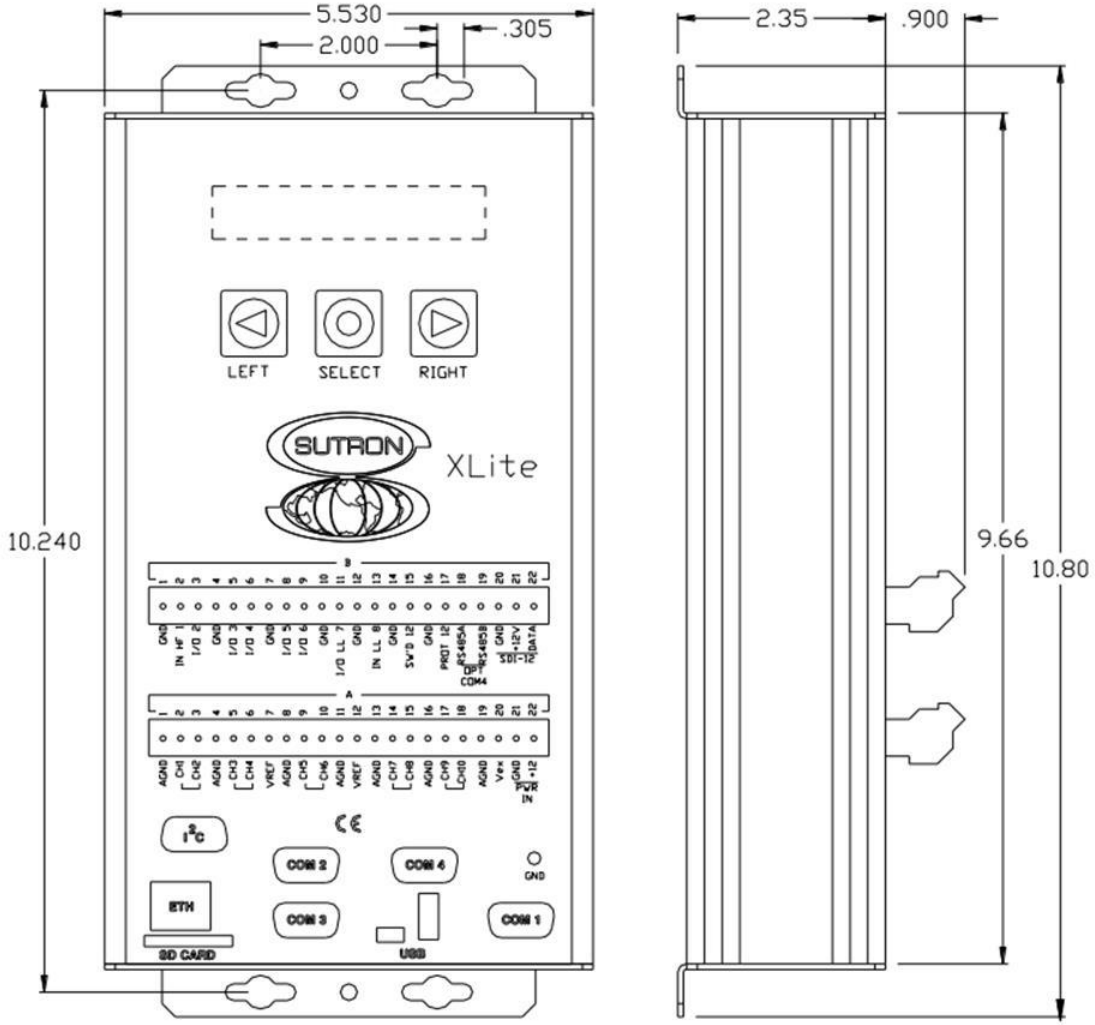
•Measurement Interval	0.1 Seconds to 24 hours (Programmable)
•Number of Measurements Supported	Unlimited
•Analog Channels	10
•Input Voltage Common mode voltage	-0.1 to 5V with respect to ground, single ended or differential
•Range	
Single-Ended	0-5 V, ± 78 mV (with respect to ground)
Differential	±2.5V, ± 78 mV (+ input with respect to – input)
•Accuracy	0.002% of 5V typ 0.003% of 78mV typ
•Resolution	16 bit
•Expandable	via I2C and SDI-12
•Digital Inputs and Outputs	8 (6 Bi-Directional, 2 input only)
•Functions Supported	Status inputs, counter inputs, frequency inputs, quadrature input
•Max Frequency	Channel 1, 8KHz; other channels 1KHz
•Support for Low Level AC inputs	Channels 7 and 8 support low level AC frequencies (e.g. RMYoung)
•Output Type	Open collector with 100 ohm current limiting resistor, 100 mA max, 15V max
•Expandable	via I^2C and SDI-12
•Excitation Channels	5 Channels
•Type(s)	Precision Voltage Reference, Switched battery, Switched +5, Protected +12V, Protected +5V
•Communication Ports	4 RS232 for communications

XLite 9210B Specifications - Continued

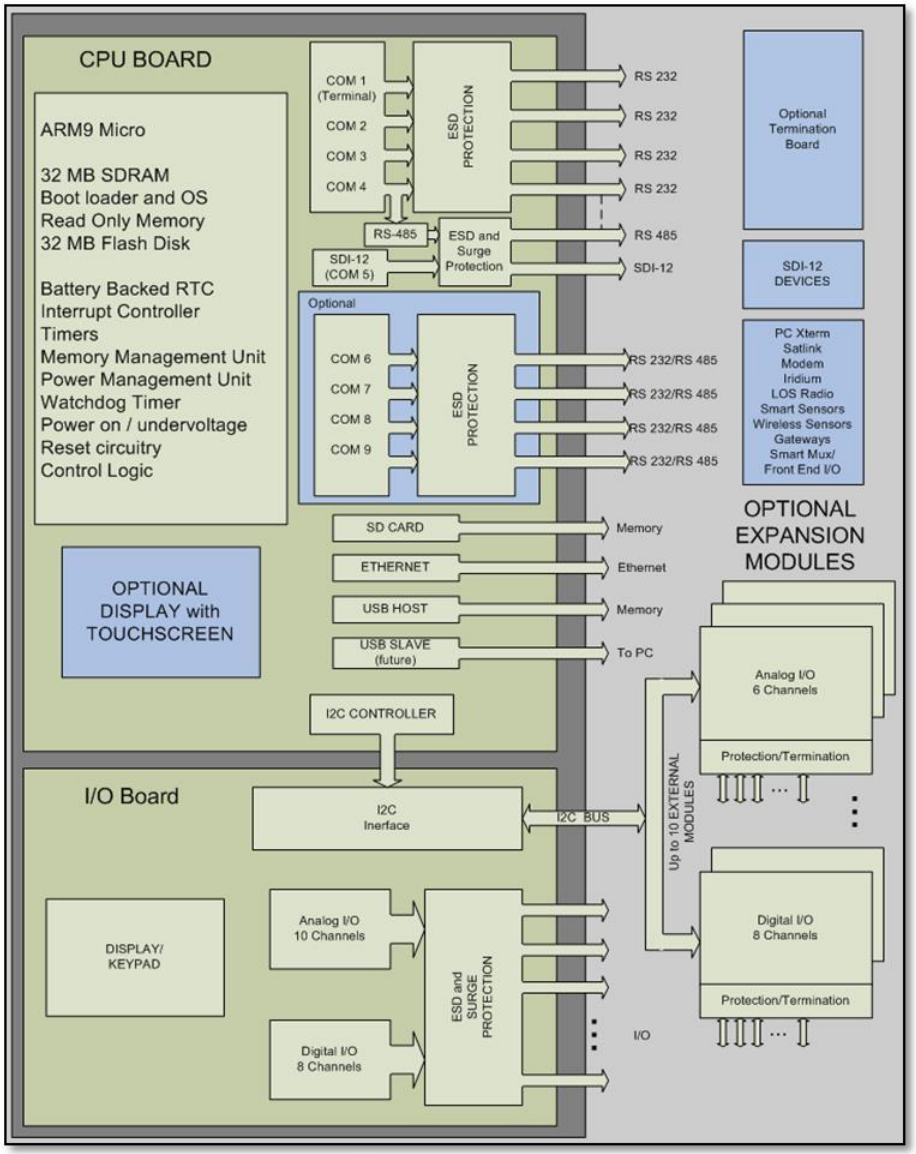
•Telemetry	Satlink2, Sutron Data & Voice Modem, Radio, Direct Connect, GPRS, IRIDIUM, MODBUS, and custom devices via BASIC
•Number of Simultaneous Communications	4
•Operating Temperature	-40°C to +60°C
•Display Operating Temperature	LCD operates to -20°C
•Display Type	2×20 character sunlight-readable backlit LCD
•Keypad Type	3 buttons
•Memory	
Built-In	Non-volatile memory: 65MB (1 to 3 million readings), RAM: 32 MB
SD/MMC Card	For download data and read/write setups or additional log memory
•Ethernet	Built in Ethernet support
•Clock Accuracy (at 0C – 40°C)	5.4 sec/month
•Power Requirements	10-16VDC (20VDC max)
•Current Drain	Typically 3mA standby, 40mA active
•Communication Protocols Supported	SSP (Sutron Standard Protocol), MODBUS, YMODEM, Telnet, HTTP, FTP, DHCP, DNS, SLIP, PPP, and custom protocols via Basic using RS-232, TCP, and UDP
•Programming	Menu driven setup, Expanded complexity via BASIC, Custom capability via C++
•Device Dimensions	
Height	11″ (28 cm)
Length	6″ (15.3 cm)
Width	3″ (7.7 cm)
Weight	2 lbs. (0.9 kg)

XLite 9210B Dimensions

Dimensions are shown in inches:



XLite 9210B Block Diagram



Key Client Portfolio – U.S.A

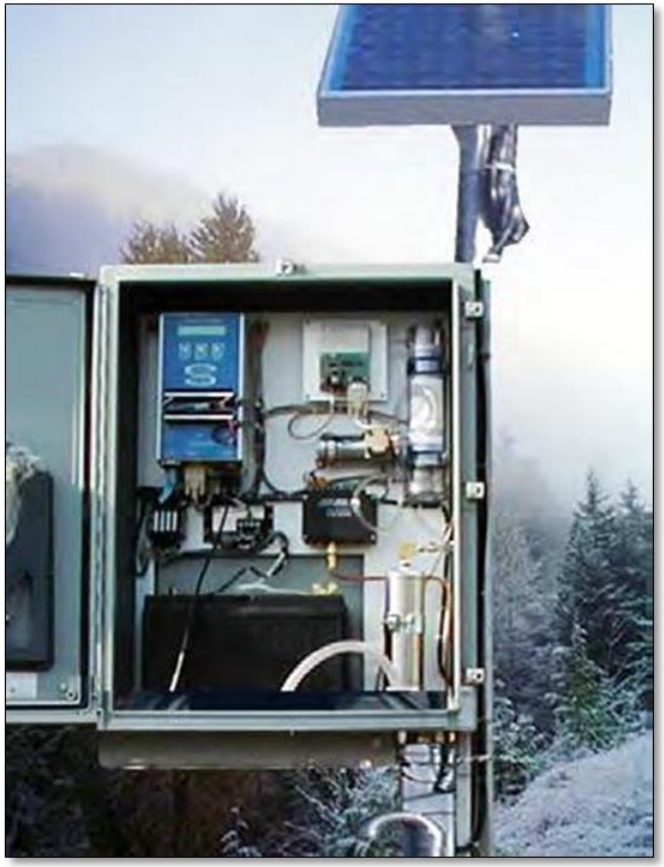
- NWS
- NOAA/NOS
- USACE
- USBR
- USGS
- USGS HIF
- CRREL
- NYPA
- EWEB
- PACIFICORP
- SRP, Arizona
- CH2MHILL
- Gannett Fleming
- URS Corp.
- TETRA TECH
- John Hopkins University
- Texas A&M
- Montgomery County

Key Client Portfolio – International

- Environment Canada
- Water Survey of Canada
- BC Hydro
- Hydro Quebec
- TRCA – Toronto Regional Conservation Authority
- FAO - UN
- UNESCO
- MARINEMET
- AEMET
- Niagara Peninsula Conservation Authority
- WMO

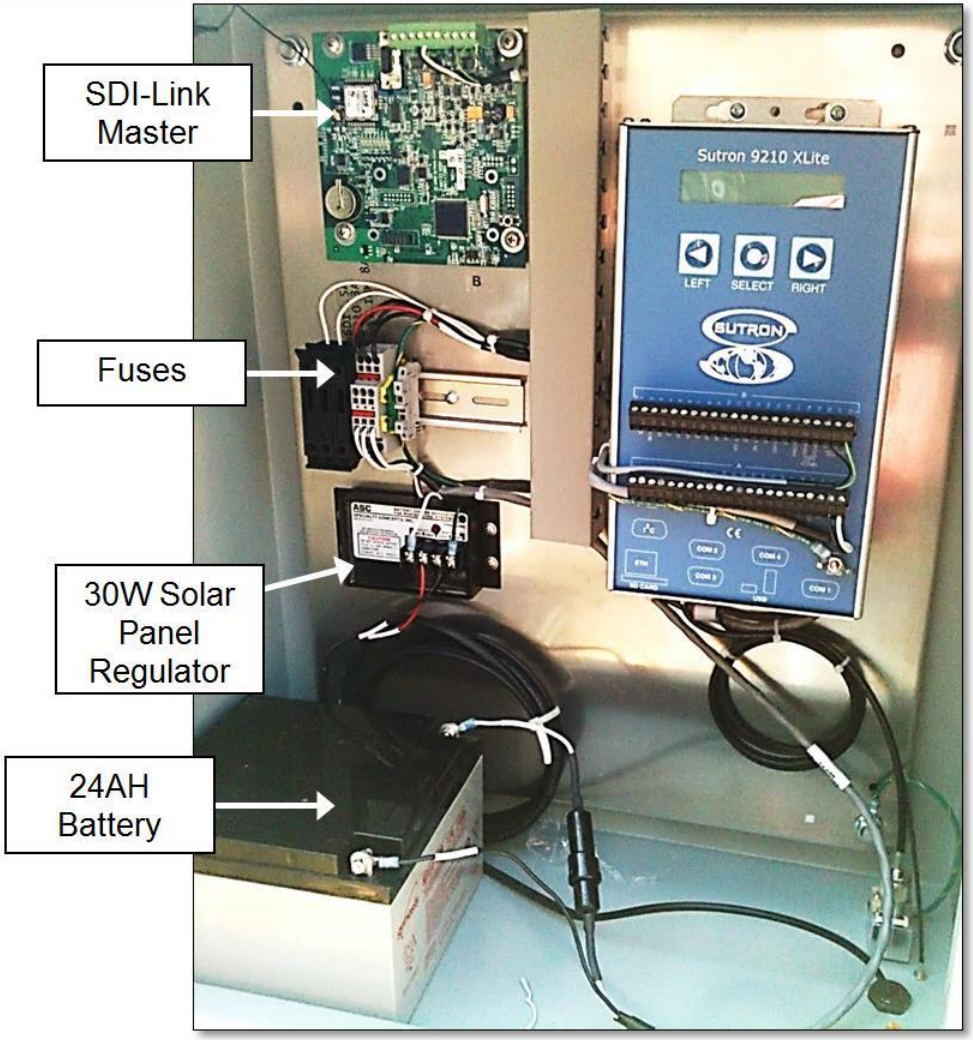
- SASE – India
- CWC – India
- IMD – India
- IMGW – Poland
- CVC – Colombia
- INAMEH – Venezuela
- SNET – EL Salvador
- INETER – Nicaragua
- ETESA – Panama
- IDEAM – Colombia
- SENAMHI – Peru
- FURNAS – Brazil
- SIMEPAR – Brazil

Installation Examples



XLite 9210B in Afghanistan

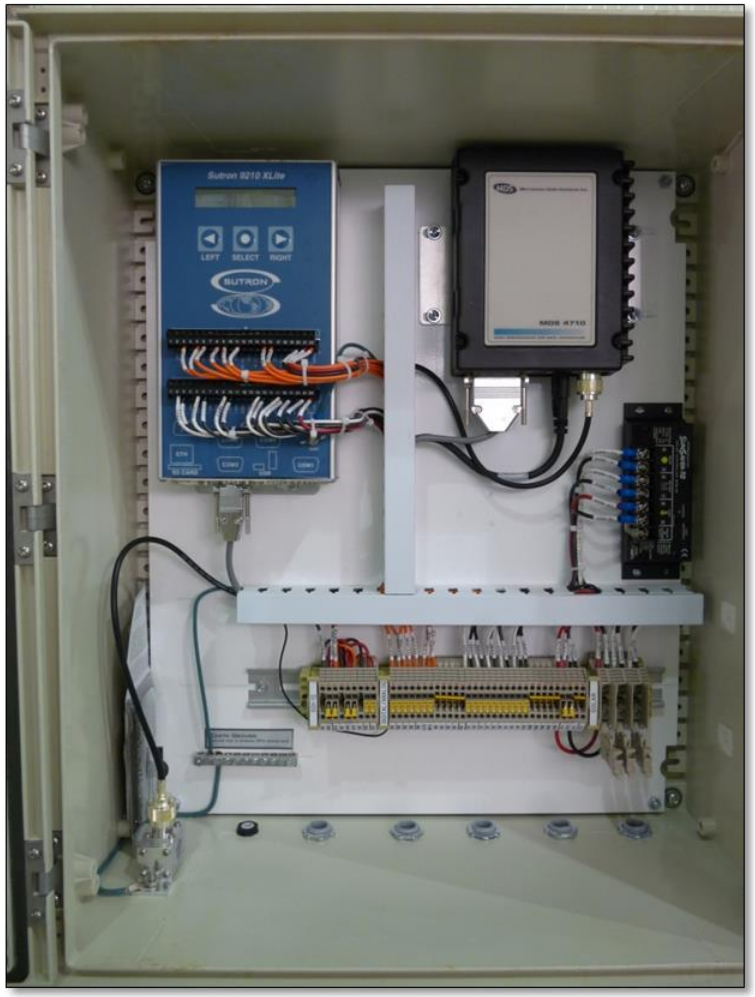
Installation Examples



XLite 9210B with SDI-Link Master Station

Installation Examples

XLite 9210B with MDS Radio



Installation Examples

XLite 9210B – Cali, Colombia

Installation Examples

XLite in a Tide Station

Installation Examples

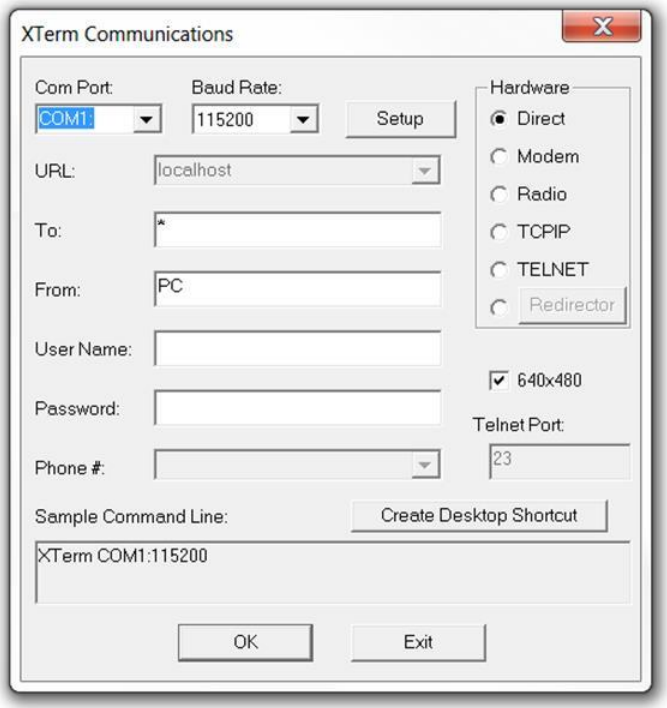
XLite in a Tide Station

Installation Examples

XLite 9210B with Range Finder and Camera for Glacier Monitoring – Hubbard Glacier, Wrangell-St. Elias National Park & Preserve, Alaska

XTerm Software for Remote Operation

Sutron's XTerm communications program allows any PC to remotely setup and operate an XLite without using a front panel. No special installation is needed for XTerm. Simply copy from our website to any folder on your PC.



- Free software shipped with loggers and available on our website
- Remote operation of XLite
- Automatically displays the graphic display of the XLite
- Easy file transfer to allow uploading and downloading of setups, programs, and data files
- Set the clock on the XLite
- Export logged data to your PC
- Communicate with an XLite via RS232 com ports 1-9 at up to 115200 baud
- 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, and PDA

XLite 9210B Models & Options

Models

9210-0000-2B	XLite Data Recorder, 4 Comms
9210-0000-3B	XLite Data Recorder, 8 Comms
9210-ENC-B	XLite Data Recorder in Enclosure
9210-SL2-ENC-B	XLite Data Recorder with Satlink-2, in Enclosure
9210-SL2-ENC-M	XLite Data Recorder with Satlink-2, in Enclosure, With Modem
9210-SL2-2B	XLite Data Recorder with Satlink-2 Transmitter

Xpert/XLite Models & Options

Datalogger Modules & Communications Options

- Analog/Digital Expansion Modules – I^2C
- Surge Protection Modules
- Communication Options
- SDI-12 Analog Plus

Xpert/XLite Expansion Modules - I²C

Options

8080-0003-1	Xpert/XLite Analog I/O Module: 6 Channels	
8080-0003-3	Xpert/XLite Analog I/O Module: 6 Channels with Surge Protection	
8080-0007	Xpert/XLite Analog I/O Module: 10 Channel, 16 Bit.	
8080-0002-1	Xpert/XLite Digital I/O Module: 8 Channels	
8080-0002-4	Xpert/XLite Digital I/O Module with Surge Protection	
8080-0008-1	Fire Weather I/O Module	

Xpert/XLite Surge Protection Modules

Options

6461-1241	SDI-12 Surge Protection Module
6461-1242	Power Surge Protection Module
6461-1239	RS-232 Surge Protection Module
6461-1240	Telephone Surge Protection Module

Xpert/XLite Communications Options

Options

SL2	SatLink2-V2 Logging Transmitter
GPRS-I-O	GSM GPRS Modem
-various plans available-	Cellular Data Plans
ISBD-1-O	Iridium® Short Burst Data (SBD) Transceiver
-various plans available-	Iridium Data Plans
8080-0005-1B	Voice Modem Module
8080-0005-2	Modem with King Radio

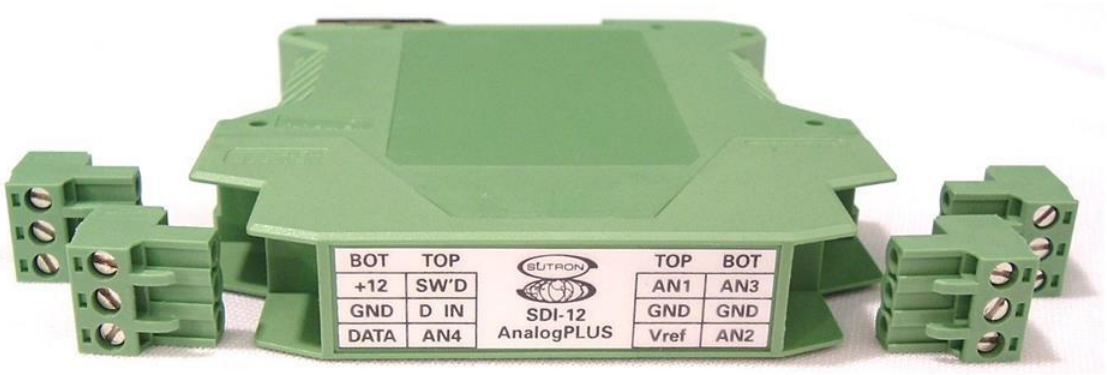
verizon Sprint wyless T-Mobile

iridium Global Satellite Communications

Universal SDI-12 Converter

Options

6661-1248-1 Universal SDI-12 Converter



5 Ports to accommodate a vast array of sensors: Highly accurate and stable, programmable input range, and supports low level 10 mV and high level 0-5V sensors.

Converts the following to SDI-12:

- Analog
- Digital/Frequency
- Quadrature

Universal SDI-12 Converter

Analog to SDI-12

AT/RH (2 Channel)

Water Temp (1 Channel)

Pyranometer (1 Channel)

Analog

- 0-5 VDC
- 4-20 ma
- Differential
- Ratiometric

Universal SDI-12 Converter

Digital/Frequency to SDI-12

Prop & Vane Wind Sensor
(1 digital, 1 analog)

Tipping Bucket
Rain Gauge

Digital/Frequency

- Switch Closure
- Frequency (20KHz)
- Period

Universal SDI-12 Converter

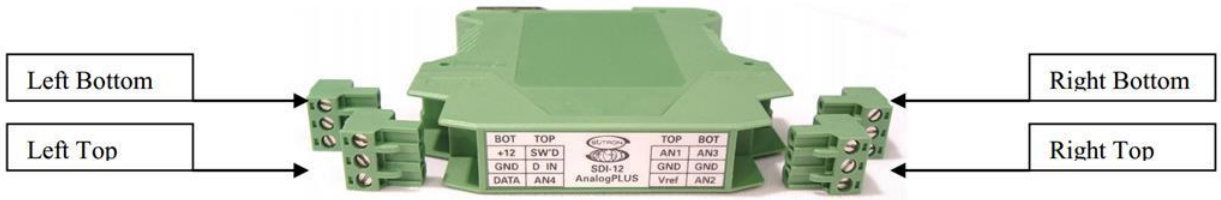
Quadrature to SDI-12

Quadrature Shaft Encoder

Universal SDI-12 Converter

Interfaces with many of these sensors

- Air Temperature
- Water Temperature
- Relative Humidity
- Wind Speed
- Wind Direction



Left Side Top	
Label	**Description**
SW'D	Switched Voltage out (+5 or +12)
D IN	Digital input
AN4	Analog input 4 / optional digital in

Right Side Top	
Label	**Description**
Vref	Reference Voltage out (2.5V)
GND	Ground
AN1	Analog input 1

Left Side Bottom (SDI-12 connection)	
Label	**Description**
+12	+12V SDI power from recorder
GND	Ground connection to recorder
DATA	SDI-12 data line to recorder

Right Side Bottom	
Label	**Description**
AN2	Analog input 2
GND	Ground
AN3	Analog input 3