

# 8310 Datalogger

## 8310-0



### Overview

The new 8310 exceeds Sutron's 8210 logger's capabilities while maintaining the same popular interface 8210 users will recognize. Using low-power circuitry, it achieves long-life battery operation and provides a rugged system for unattended field applications in extreme environments. Additionally, the 8310 supports two types of simultaneous communications. (The 8310-0 model does not include NEMA enclosure.)

### Features

- ▶ Low-power circuitry achieves long-life battery operation for rugged unattended field operation in extreme environments.
- ▶ Full EMI & transient protection built into each input.
- ▶ Maximized Data Dependability - Hardened design, multiple communications paths & field-proven logging power expand the 8310's reliability over other loggers.
- ▶ Built-in measurement circuitry to handle sensors commonly used.
- ▶ Flexible measurement schedules & logging schemes.
- ▶ Built-in BASIC to support custom measurements, processing & communications.
- ▶ Built-in support for GOES, Iridium, GPRS, & telephone modems including speech.
- ▶ Dual communications support allowing combinations of supported communications devices.
- ▶ Remote operation without using custom PC programs.
- ▶ Wide temperature operation for reliability in extreme conditions.
- ▶ SDI-12 support functions.
- ▶ Real-time data views.
- ▶ Single and dual point calibration methods.
- ▶ Upgraded diagnostic logs.
- ▶ Internal real-time clock w/battery backup. + 5 sec/month (typical), +10 sec/month (max). Optional GPS clock.



*8310-0 Datalogger*

### Applications

- ▶ Meteorology & Climatology
- ▶ Agrometeorology
- ▶ Natural Resources
- ▶ Oceanography
- ▶ Aviation (AWOS)
- ▶ Emergency Management
- ▶ Water Level & Flow
- ▶ Water Quality
- ▶ Hydrology
- ▶ Air Quality
- ▶ Visibility
- ▶ Geotechnical
  - ✓ Dam Safety
  - ✓ Structural Stability
- ▶ Energy
  - ✓ Solar Farms
  - ✓ Wind Farms

**SPECIFICATIONS - 8310-0***Specifications subject to change without notice.*

<b>Measurement Interval</b>	0.1 Seconds to 24 hours (Programmable)
<b>Measurements Supported</b>	Unlimited
<b>Analog Channels</b>	8
<b>Input Voltage</b>	-0.1 to 5V with respect to ground, single ended or differential
<b>Range</b>	
<b>Single-Ended</b>	0-5 V, $\pm 78$ mV (with respect to ground)
<b>Differential</b>	$\pm 2.5$ V, $\pm 78$ mV (+ input with respect to - input)
<b>Accuracy</b>	0.002% of 5V typ 0.003% of 78mV typ
<b>Resolution</b>	16 bit
<b>Expandable</b>	via I <sup>2</sup> C and SDI-12
<b>Digital Inputs</b>	6 (2 Bi-Directional)
<b>Functions Supported</b>	Status inputs, counter inputs, frequency inputs, quadrature input
<b>Pulse Counter</b>	8KHz, minimum pulse width 100 micro-seconds with programmable debouncing
<b>Expandable</b>	via I <sup>2</sup> C and SDI-12
<b>Digital Outputs</b>	2 (Bi-Directional)
<b>Output Type</b>	Open collector with 100 ohm current limiting resistor, 100 mA max, 15V max
<b>Excitation Channels</b>	5 Channels
<b>Type(s)</b>	Precision Voltage Reference, Switched battery, Switched +5, Protected +12V, Protected +5V
<b>Communication Ports</b>	4 RS232 for communications
<b>Telemetry</b>	Satlink2, Sutron Data & Voice Modem, Radio, Direct Connect, GPRS, IRIDIUM, MODBUS, & custom devices via BASIC
<b>Communications</b>	4 types of Simultaneous Communications
<b>Operating Temperature</b>	-40°C to +60°C
<b>Display Operating Temp.</b>	LCD operates to -20°C
<b>Display Type</b>	2x20 character sunlight-readable backlit LCD
<b>Keypad Type</b>	6 buttons
<b>Memory</b>	
<b>Built-In</b>	RAM: 32MB Non-volatile: 65MB (1 -3,000,000 readings)
<b>SD Card</b>	For download data & read/write setups or additional log memory
<b>Ethernet</b>	Built in Ethernet support
<b>Clock Accuracy</b>	5.4 sec/month (at 0°C - 40°C)
<b>Power Requirements</b>	10-16VDC (20VDC max)
<b>Current Drain</b>	Typically 3mA standby, 40mA active
<b>Communication Protocols Supported</b>	SSP (Sutron Standard Protocol), MODBUS, YMODEM, Telnet, HTTP, FTP, DHCP, DNS, SLIP, PPP, & custom protocols via Basic using RS-232, TCP, & UDP
<b>Programming</b>	Menu driven setup, Expanded complexity via BASIC, Custom capability via C++
<b>Dimensions</b>	
<b>Height</b>	11.5 in. (30 cm)
<b>Length</b>	6 in. (15.3 cm)
<b>Width</b>	3.5 in. (8.9 cm)
<b>Weight</b>	3.1 lbs. (1.5 Kg)

**ORDERING**

Ordering #	Description
8310-0	8310 without NEMA Enclosure

**ACCESSORIES**

	Part #	Description
<b>ADDITIONAL MEMORY</b>		
<b>SD Card, 2 GB</b>	6661-1293	SD Card w/2 Gigabytes available memory.
<b>SURGE PROTECTION MODULES</b>		
<b>Module, SDI-12</b>	6461-1241-2T	Provides connection for two SDI sensors & surge protection.
<b>Module, Telephone</b>	6461-1240-1T	Provides connection & surge protection for one twisted pair.
<b>Module, Power</b>	6461-1242-1T	Provides channels to monitor solar panel voltage, battery voltage & AC current.
<b>Module, RS232</b>	6461-1239-1T	Provides termination & surge protection for one sensor with RS-232 output.
<b>Module, Digital</b>	6461-1238-2T	Provides a surge protection for sensors with digital outputs.

**SHIPPING DIMENSIONS**

<b>Shipping Height</b>	14" (35.6 cm)
<b>Shipping Length</b>	10" (25.4 cm)
<b>Shipping Width</b>	6" (15.3 cm)
<b>Shipping Weight</b>	5 lbs. (2.3 kg)