

8310 Datalogger

8310-N Series with Enclosures



Overview

The 8310 uses low-power circuitry to achieve long-life battery operation and provide a rugged system for unattended field operation in extreme environments. Full EMI and transient protection are built into each input. Additionally, the 8310 supports two types of communications simultaneously.

Features

- ▶ Simple front panel set-up without PC or other devices
- ▶ Built-in measurement circuitry handles commonly used sensors
- ▶ Flexible measurement schedules and logging schemes
- ▶ Built-in BASIC to support custom measurements, processing and communications.
- ▶ Built-in support for GOES, Iridium, GPRS, and telephone modems including speech
- ▶ Dual communications capability supports 2 separate communications options simultaneously
- ▶ Remote operation without using custom PC programs
- ▶ Weather-proof packaging promotes long field product life
- ▶ Wide temperature operation for extreme environments
- ▶ Long life battery operation with low power consumption
- ▶ SDI-12 support
- ▶ Real-time data views
- ▶ Single and dual point calibration methods
- ▶ Enhanced, useful diagnostic logs
- ▶ 32 MB RAM logging memory
- ▶ Independent *hardware* watchdog
- ▶ *Software* watchdog to monitor important system functions and guide intelligent recovery when required
- ▶ Communications ports: 1 USB, 1 RS-485, 2 SDI-12
- ▶ 32 bit microprocessor



8310-N (Basic)

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-N		ACCESSORIES		
<i>Specifications subject to change without notice.</i>			Part #	Description
Measurement Interval	1.0 second to 24 hours (programmable)	Additional Memory		
Measurements Supported	Unlimited	SD Card, 2 GB	6661-1293	SD Card w/2 Gigabytes memory.
Analog Channels	8	Surge Protection Modules		
Input Voltage	-0.1 to 5V with respect to ground, single ended or differential	Module, SDI-12	6461-1241-2T	Connection for two SDI sensors & surge protection.
Range		Module, Telephone	6461-1240-1T	Connection & surge protection for one twisted pair.
Single-Ended	0-5 V, \pm 78 mV (with respect to ground)	Module, Power	6461-1242-1T	Channels to monitor solar panel voltage, battery voltage & AC current.
Differential	\pm 2.5V, \pm 78 mV (+ input with respect to - input)	Module, RS232	6461-1239-1T	Surge protection for one sensor with RS-232 output.
Accuracy	0.002% of 5V typ 0.003% of 78mV typ	Surge Protection Module, Digital	6461-1238-2T	Surge protection for sensors with digital outputs.
Resolution	16 bit	ORDERING		
Expandable	via I ² C and SDI-12	Ordering #	Description	
Digital Inputs	6 (2 Bi-Directional)	8310-N	8310 With NEMA Enclosure	
Functions Supported	Status inputs, counter inputs, frequency inputs, quadrature input	8310-N-S	8310 With NEMA Enclosure and Satlink	
Pulse Counter	8KHz, minimum pulse width 100 micro-seconds with programmable debouncing	8310-N-G	8310 With NEMA Enclosure and GPRS	
Expandable	via I2C and SDI-12	8310-N-I	8310 With NEMA Enclosure and Iridium	
Digital Outputs	2 (Bi-Directional)	8310-N-P	8310 With NEMA Enclosure and Phone/Speech Modem	
Output Type	Open collector with 100 ohm current limiting resistor, 100 mA max, 15V max	8310-N-S-G	8310 With NEMA Enclosure, Satlink and GPRS	
Excitation Channels	5 Channels	8310-N-S-I	8310 With NEMA Enclosure, Satlink and Iridium	
Type(s)	Precision Voltage Reference, Switched battery, Switched +5, Protected +12V, Protected +5V	8310-N-S-P	8310 With NEMA Enclosure, Satlink and Phone/Speech Modem	
Communication Ports	4 RS-232 ports, RS-485 port, 1 USB port, 2 SDI-12 ports	8310-N-G-I	8310 With NEMA Enclosure, GPRS and Iridium	
Telemetry	Satlink2, Sutron Data & Voice Modem, Radio, Direct Connect, GPRS, IRIDIUM, MODBUS, & custom devices via BASIC	8310-N-S3	8310 With Nema Enclosure and SatLink3	
Communications	4 types of Simultaneous Communications	8310-N-S3-G	8310 With Nema Enclosure, SatLink3 and GPRS	
Operating Temperature	-40°C to +60°C	8310-N-S3-I	8310 With Nema Enclosure, SatLink3 and Iridium	
Display Op. Temp.	LCD operates to -20°C	8310-N-S3-P	8310 With Nema Enclosure, SatLink3 and Phone/Speech Modem	
Display Type	2x20 character sunlight-readable backlit LCD	DIMENSIONS		
Keypad Type	6 buttons	<i>Dimensions for largest & heaviest 8310-N-S-I</i>		
Memory		Height	14" (35.6 cm)	
Built-In	RAM: 32MB Non-volatile: 65MB (1 -3,000,000 readings),	Length	13.5" (34.3 cm)	
SD/MMC Card	For download data & read/write setups or additional log memory	Width	6.5" (16.5 cm)	
Ethernet	Built in Ethernet support	Weight	11 lbs. (5 kg)	
Clock Accuracy	5.4 sec/month (at 0°C - 40°C)	SHIPPING DIMENSIONS		
Power Requirements	10-16VDC (20VDC max)	Height	16" (40.7 cm)	
Current Drain	Typically 3mA standby, 40mA active	Length	14" (35.6 cm)	
Communication Protocols Supported	SSP (Sutron Standard Protocol), MODBUS, YMODEM, Telnet, HTTP, FTP, DHCP, DNS, SLIP, PPP, & custom protocols via Basic using RS-232, TCP, & UDP	Width	12" (30.5 cm)	
Programming	Menu driven setup, Expanded complexity via BASIC, Custom capability via C++	Weight	14 lbs. (6.4 kg) for the heaviest unit.	