



Electric Field Meter

S90008

- CE Compliance
- Operating Range: -25° to 50°C, -55° to +85°C optional
- Easy Maintenance

This Electric Field Meter measures the vertical component of the atmospheric electric field at the earth's surface. These atmospheric electric field measurements are useful for assessing the local lightning hazard and for thunderstorm research.

Instead of the traditional rotating vane field mill, this sensor uses a reciprocating shutter electrically connected to ground potential by a flexible stainless-steel strap. The strap operates below its fatigue limit, resulting in an ultra-reliable electrical ground connection to the shutter. The reciprocating approach provides better low frequency error performance than the traditional rotating vane field mill because it has a convenient zero-field (closed shutter) reference. The zero-field reference allows the sensor to measure and then correct for electronic offset voltages, contact potentials, and leakage currents of each individual measurement.

This device also contains circuitry to measure and compensate for insulator leakage currents occurring on the charge amplifier input, eliminating measurement errors caused by fouled insulators. If insulator surfaces become conductive because of surface contamination, a leakage current compensation circuit applies an equal and opposite polarity current to the charge-amplifier input that prevents saturation of the electronics.





Technical Specifications

S90008

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| Datalogger: | An embedded CR1000M datalogger module (ordered as p/n 18292) is required. |
| Standard Mounting: | 2 m height on a tripod mast |
| Site Correction: | Site correction factors available for several standard mounting configurations. |
| Programmability: | CRBasic programming allows the selection of sample rate, data processing and storage options and setting output ports based on alarm conditions. LoggerNet includes the CRBasic editor and compiler. |
| Sample (Measurement) Rate: | Programmable sample rate up to 5 samples per second, variable sample rates possible. Variable example: sample every 10 seconds until field exceeds threshold then sample once a second until field returns to normal. |
| Power Requirements: | 11 to 16 Vdc; peak-current demand is 750 mA during motor operation. 7 mA @ 12 V = 0.08 W average power consumption at 1 sample per 10 seconds 60 mA @ 12 V = 0.7 W average power consumption at 1 sample per second 120 mA @ 12 V = 1.4 W average power consumption at 2 samples per second 300 mA @ 12 V = 3.6 W average power consumption at 5 samples per second |
| Cables (ordered separately): | CS110CBL3-L power cable is required for the CS110 to operate; it connects the CS110 to its power source and can be used to communicate with an additional datalogger. CS110CBL1-L RS-232 cable connects the CS110 to a laptop or other communication devices with an RS-232 port. CS110CBL2-L CS I/O cable connects the CS110 to the CS I/O port of a Campbell Scientific device such as the COM220, COM320, or NL100. |
| Communication: | 1 RS-232 port; 1 CS I/O port used to interface with our peripherals such as a Voice Modem; digital control ports 1, 2, and 3 for alarm, SDI-12 communications, or asynchronous communications |
| Baud Rates: | Selectable from 300 to 115,200 bps |
| ASCII Protocol: | one start bit, one stop bit, eight data bits, no parity |
| Lightning Protection: | Multi-stage transient protection on all external interfaces |
| CE Compliance Standards to which conformity is declared: | BS EN61326:2002 |
| Rugged Construction: | Ultra-reliable metallic ground connection to reciprocating shutter (no wiping contact), brushless stepper motor, powder-coated aluminum case, Teflon insulators, and electro-polished 316L stainless-steel used for corrosion protection of critical exposed metallic parts |
| Operating Temperature Range: | -25° to 50°C standard, -55° to +85°C optional |
| RH Range: | 0 to 100% RH |
| Dimensions: | 6" x 6" x 17" (15.2 x 15.2 x 43.2 cm) |
| Weight: | 9 lbs (4 kg) |