Met Station One (MSO)

Five Parameter Weather Station

Description

The new Met Station One (MSO) weather station combines five of the most popular meteorological measurements into one simple, economical package, allowing for efficient and accurate comprehensive weather monitoring to be added to any existing site or new installation.

The MSO features **wind speed, wind direction, temperature, relative humidity, and barometric pressure** sensors. A rainfall measurement option can be added by integrating a tipping bucket rain gage directly into the serial message being outputted by the MSO, or by simply connecting it to another port on a data logger shared with the MSO.

The pre-assembled MSO is ready for immediate deployment and includes u-bolt hardware for mounting to a pole, mast, or pipe. The air temperature, humidity, and barometric pressure sensors are housed in a solar radiation shield positioned below the mechanical wind direction and speed sensor.

www.stevenswater.com 1.800.452.5272

Features

- Five Weather Parameters:
  - Wind Speed
  - Wind Direction
  - Air Temperature
  - Barometric Pressure
  - Relative Humidity
- Built-in solar radiation shield
- English or Metric unit outputs
- SDI-12 or RS-232 outputs standard
- RS-485 or RS-422 outputs optional
- Pre-assembled and ready to deploy out of the box

Applications

- Weather stations
- Site surveys
- Mobile weather measurement
- Verification of weather data from other instruments

Stevens®
Water Monitoring Systems, Inc.

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Since 1911, Stevens Water Monitoring Systems, Inc. has provided complete water monitoring solutions including:

- Water Level Sensors
- Water Quality Sensors
- Soil Moisture Sensors
- Chart Recorders
- Staff Gages
- Telemetry Systems
- Data Collection Platforms

Met Station One (MSO)

Technical Specifications

Power Requirments
9 to 17 VDC @ 4 mA

Communications
SDI-12 and RS-232 standard
(RS-485 and RS-422 optional)

Operating Temperature
-40°C to +60°C

Wind Speed and Direction Specifications
Speed Range: 0 – 50 m/sec (111.8 mph)
Speed Resolution: 0.1 m/sec (0.22 mph)
Speed Accuracy: ± 2%
Direction Range: 0 – 360°
Direction Resolution: 1°
Direction Accuracy: ± 5°
Threshold, both Speed & Direction: 1 m/sec (2.23 mph)

Temperature and Humidity Specifications
Temperature Range: -40°C to +60°C (-40°F to +140°F)
Temperature Resolution: 0.1°C
Temperature Accuracy: ± 0.5°C
Relative Humidity Range: 0 - 100%
Relative Humidity Resolution: 1%
Relative Humidity Accuracy: ± 4%

Barometric Pressure Specifications
Range: 500 – 1100 mbars (14.76 - 32.48 inHg)
Resolution: 0.1 mbar (0.002 inHg)
Accuracy: ± 2 mbars (0.059 inHg)

ORDERING INFORMATION	
Part #	Description
51127	Met Station One, SDI-12 and RS-232 output Includes 50 feet of cable and mounting hardware

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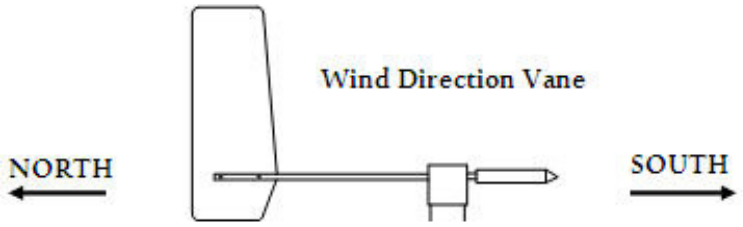
Met Station One (MSO)

Installation Instructions

Siting
- Find suitable location within cable length of recording electronics / display.
- Locate true north.

Mounting
- Use quick mount u-bolts to install on vertical or horizontal mast, pole or pipe.
- Tighten nuts, keeping sensor level.

Direction Alignment
- Install alignment shoulder screw into wind direction vane hub.
- Align sensor so wind direction counterweight is to the South, vane tail is to true North.



Check Operation
- Check that the vane and cups rotate freely.

RS-232 Configuration
- 9600 baud, 8 data bits, no parity, 1 stop bit, and no flow control

SDI-12 Configuration
- Default address 0
- Conforms to SDI-12 V1.3

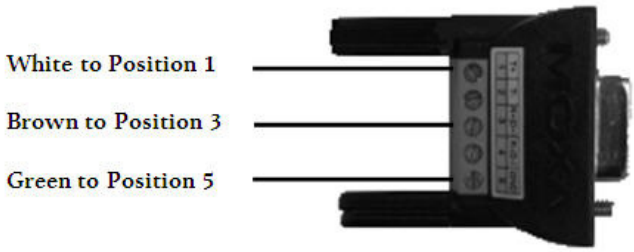
Output String Format
- SSS.S, DDD, +TTT.T, HHH, PPP.P, RRR.RR, XXXX, VV.VV, *CCCC<CR><LF>
- SSS.S = Wind Speed
- DDD = Wind Direction
- +TTT.T = Temperature
- HHH = Relative Humidity
- PPP.P = Barometric Pressure
- RRR.RR = Rain (Optional)
- XXXX = Solar (Future Option)
- VV.VV = Battery Voltage
- *CCCC = Message Checksum

Met Station One (MSO)

Installation Instructions

Connections

- Run cable to recorder or computer
- Connect using included screw-terminal DB-9 adaptor or solder DB-9 or DB-25.



Wiring

• RED	+9 TO +17 VOLTS DC @ 4mA
• BLK	POWER COMMON
• WHT	RS-232 TX
• BRN	RS-232 RX
• GRN	RS-232 / SDI-12 COMMON
• BLU	SDI-12
• WHT/BRN	SHIELD (must be grounded for transient protection to function)