# VS7 Logger

The VS7 logger is designed to provide an affordable and easy-to-use solution for meteorological and hydrological monitoring as well as other monitoring applications. It easily supports both simple and complex monitoring applications. The VS7 logger records wind speed, gust, wind direction, as well as time and date, temperature/humidity, battery, and other important meteorological parameters.

The VS7 logger's easy-to-use interface includes a 16 character by 2 line backlit LCD screen, which displays current information and is used for configuring the logger. A simple menu-driven interface using the LCD and three front panel buttons makes setup easy. A bright backlight makes the data logger easy-to-use at night. A SD card slot makes recording and accessing data easy.

The VS7 logger can be used not only for meteorological monitoring application, but also for hydrological monitoring as well as for water quality monitoring, gas monitoring, solar power monitoring, wind power monitoring and other applications, etc.

The VS7 logger can be mounted in a weatherproof enclosure on a tripod or tower for long term monitoring purpose on site, or fitted in a portable rugged instrument case for portable measuring purpose.
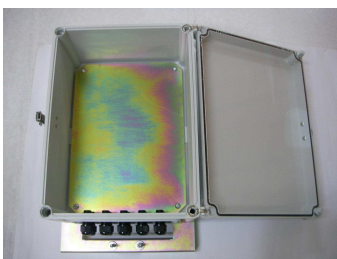
weatherproof enclosure
@ L:38cm W:28cm H:18cm

portable rugged instrument case
@ L:58cm W:40cm H:35cm

← →

inner of portable rugged instrument case

movable polypropylene instrument box
@ L:69cm W:48cm H:39cm

← →

inner of movable polypropylene instrument box

Technical Specifications:

A. WIND / COUNTER
- a. Three pulse inputs including fast & low switch closure signals (normally for wind speed sensors or rain gauges)
- b. Supports dry contact switch or TTL level signal
- c. RC low pass filter on each input
- d. Capable of displaying and logging in meters per second (m/s), kilometers per hour (KPH), miles per hour (MPH)

B. WIND VANE
- a. Two analog inputs, specifically support for potentiometer type of wind direction sensor
- b. Displays 0° to 359°

C. ANALOG INPUTS
- a. Five channels
- b. 0 to 5 volt range
- c. 12 bit A/D converter (A4 thru A7), 10 bit A/D converter (A3)
- d. User configurable linear functions for displaying real units as well as voltage

D. POWER OUTPUTS
- a. Supports 2 continuous 5 volt outputs
- b. Supports 3 continuous 12 volt outputs

E. REAL-TIME CLOCK
- a. Less than +-1 minute per month
- b. Battery: CR1225 or BR1225, 3 volt lithium
- c. Battery life: 10 - 15 years
- d. Leap year compensation
- e. Accurate calendar until year 2099

F. OPERATOR INTERFACE
- a. 16 character by 2 line LCD display
- b. Backlight with automatic shutoff
- c. Three momentary buttons

G. LOGGING AND STORAGE
- a. Logs at 2 to 59,999 second intervals
- b. SD card or MMC card
- c. Supports 2 gigabyte or 512 Mbyte SD card (included) standard
- d. Data files in Comma Separated Vertical (CSV). Can be used with spreadsheet software, databases, or other package software
- e. One data file per calendar day

H. RS-232 INTERFACE
- a. EIA/TIA-232 voltage levels
- b. Four position screw terminals
- c. 1200, 2400, 4800, 9600, 19200, 57600, 8 bits, no parity, 1 stop bit (8N1)
- d. No hardware handshaking
- e. Accessible through terminal block marked "RS-232"
- f. Outputs raw data logger record in same format as written to memory card

ELECTRICAL AND MECHANICAL:

A. POWER REQUIREMENT
- a. 8 to 32 volts DC (power rating: max. 800 mA @12VDC)
- b. 50mA peak power while writing to SD card
- c. 35mA with backlight on
- d. 15mA with backlight off
- e. All sensors inputs have Transient Voltage Suppression (TVS) protection

B. WEIGHT, DIMENSIONS AND HOUSING
- a. Weight: @ 480 gram
- b. Dimensions: @ 19.0 cm Length, 9.5 cm Width, 6.0cm Depth
- c. Housing: Anodized aluminum material

Sensor Series:

EE-04 Wind Sensor:
a. Measuring range: Wind speed: 0 – 75 m/s

Wind direction: 0 – 360°

b. Accuracy: Wind speed: ±1 m/s (0-20 m/s)

±5% (>20m/s)

Wind direction: ±7°

c. Signal output: Wind speed: magnetically switch

Wind direction: potentiometer

TH-50VS Temp./RH probe:
a. Measuring range:

Temperature: 0℃to +50℃

Humidity: 0 – 100%

b. Accuracy:

Temperature: ± 0.5℃

Humidity: ±3% RH (40 – 60% RH) ; ±5% RH (other range)

c. Signal outputs: 0 – 5 VDC

d. Power requirement: 12 VDC (10.5 – 13.5 VDC)

e. Optional 884 Solar Radiation Shield

## THV5 Temp./RH probe:
a. Measuring range:

Temperature: -10℃ – +60℃

Humidity: 0 – 100%

b. Accuracy:

Temperature: ± 0.6℃

Humidity: < ±3% (0 – 90%)

< ±5% (90 – 100%)

c. Signal outputs: 0 – 5 VDC (-40℃ – +60℃)

0 – 5 VDC (0 – 100%)

d. Power requirement: 8 – 28 VDC

e. Optional 884 Solar Radiation Shield

PY-SR Pyranometer:
a. Spectral range: 300 – 1100 nm

b. Measuring range: 0 – 1250 W/m^2

c. Accuracy: ±5%

d. Signal output: 0 – 5 VDC

e. Power requirement: 5 – 24 VDC

f. Cable length: 5M standard
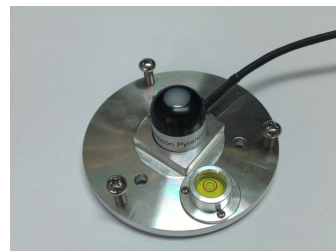
PAR-QS Quantum Sensor:
a. Spectral range: 400 – 700 nm

b. Measuring range: 0 – 2500 umols^{-1}m^{-2}

c. Accuracy: ±5%

d. Signal output: 0 – 5 VDC

e. Power requirement: 5 – 24 VDC

f. Cable length: 5M standard

BP0611A Barometric Pressure Sensor:

a. Measuring range: 630 – 1130 hPa (mBar)

b. Response time: @ 10ms

c. Accuracy: ±0.125% FS

d. Signal output: 0 – 2 VDC

e. Power requirement: 12 VDC (10 – 24 VDC)

f. Mounting accessories included

BP1100 Barometric Pressure Sensor:

a. Measuring range: 400 – 1100 hPa (mBar)

b. Sensitivity: 217.865 hPa/V

c. Response time: @ 1ms

d. Accuracy: ±1.5%

e. Power requirement: 5 VDC

f. BP sensor should be put with logger
  inside an environmental enclosure
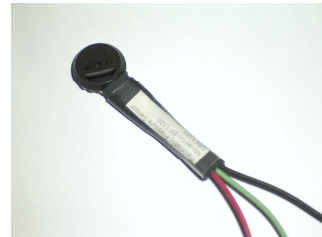
6463M Rain Gauge:

a. Sensor type: Tipping Bucket with magnetic reed switch

b. Sensitivity: 0.2mm per tip

c. Output: Contact closure

d. Housing Material: UV – stabilized ABS plastic

e. Dimensions: Rain Collector –> 16.5cm diameter * 24cm high
            Collection Area –> 200cm^2

f. Air bubble for leveling

g. Optional RG-BASE Metal base for Rain Gauge series

WM-SMV2 Soil Moisture Sensor:

a. Measuring range: 0 – 239 centibars

b. Response time: @ 500ms

c. Fully solid state and will not dissolve in soil

d. Not affected by freezing temperature

e. Internally compensated for commonly found salinity levels

f. No maintenance required

g. Signal output: 0 – 2.8 VDC (2.9 VDC = frozen fault ;
                        3.0 VDC = open circuit fault)

h. Power requirement: 5 – 30 VDC

i. Cable length: 3M standard