Data Sheet of **Weather Station** (SMKB-MET-ROAD-FS2)

This Met Station is specially designed for Road weather monitoring applications. This system employs low power data logger system and rugged sensors for extreme road conditions. The system uses 12V operating voltage with a SLA battery backup while energy is harvested from a 12V/40W solar panel. Ethernet Interface is provided for Real time sensor monitoring. A stainless steel tripod stand is offered along with this system for robust mounting of data logger enclosure and sensors.

Sensors Specification

Rain Gauge Sensor
Operating Voltage: 5V DC
Interface: Digital Pulse
Range: 100mm/hour
Accuracy: 5%
Least Count: 0.2mm

Road Temperature Sensor
Operating Voltage: 5V DC
Interface: Analog Linear o/p
Range: -10 to 100 degC
Accuracy: 0.2 degC
Least Count: 0.1degC

Wind Direction Sensor
Operating Voltage: 12V DC
Interface: RS485
Range: 0 to 359 deg
Accuracy: +/- 3 deg
Least Count: 1 deg

Temperature & Humidity Sensor
Operating Voltage: 5V DC
Interface: Digital & Analog
Temperature
Range: -40 to 85 degC
Accuracy: 0.2 degC
Least Count: 0.01 degC
Humidity
Range: 0 to 100%
Accuracy: 2%
Least Count: 0.01 %

Visibility Sensor
Operating Voltage: 12V DC
Interface: RS485
Range: 0 to 3000 mtrs
Accuracy: 5% full scale
Sensor type: IR
Wavelength: ~880

Wind Speed Sensor
Operating Voltage: 12V DC
Interface: RS485
Range: 0 to 70 mps
Accuracy: 2%
Least Count: 0.1m/sec

Pollution Sensor with parameters PM2.5, SO2, NO2
Resolution: 10μg/m^3, 1PPM
Output: Digital/RS485
Power: 12VDC

Data Logger Specifications
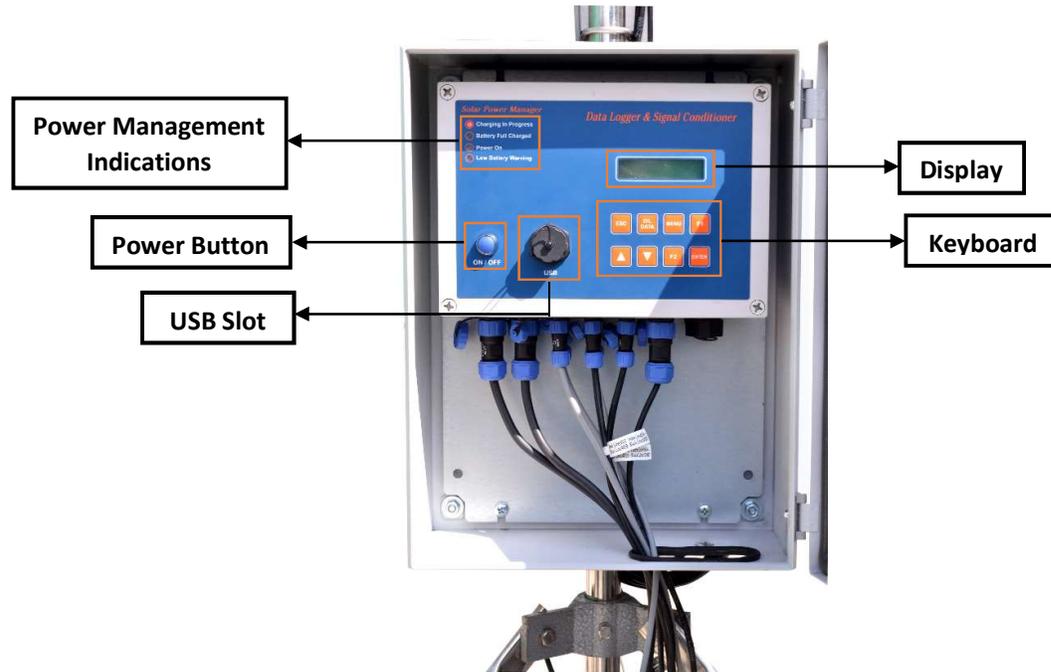
This is a 32bit Micro controller based data logger reflect state of the art in micro controller based instrumentation design. All sensors can be attached with this data logger for the collection of real time data automatically. The micro controller converts the analog signals from these sensors to digital format. The micro controller has their individual operating software's programmed in their internal Flash & FRAM and the data acquired by them is stored in their internal data RAMS. This micro controller remains in the sleep mode and wake up only when either a signal from the sensors is available or when they receive control signals from the master controller for acquiring the stored data. The micro controller has its internal memory along with an additional memory for data logging, a real time clock with an LCD (16 X 2) to display the instrument status.

Display	:	16 Characters X 2 Lines LCD with momentary back light
Real Time Clock	:	Provided with 1PPM TCXO
Number of Channels	:	8/16
Data Storage	:	64M FLASH, up to 1M FRAM.
Power Supply	:	12V SMF batteries
Clock accuracy	:	±5 seconds per week
Weatherproof enclosures	:	Provided.
Logging Interval	:	User Programmable from 1 minute to 24 Hour.
Operating Temperature	:	- 40 to 85 °C.
Operating Humidity	:	0 to 95 % non-condensing.
Battery Charging	:	Through Solar Panel default or as opted by customer.
Data retrieval	:	Default Through USB Pend Drive to Computer or as opted by customer.
Sensor Channels	:	8 or more channels consisting of Analog, Digital, RS485, RS232, SDI-12 etc.
Optional Connectivity	:	Ethernet

Accessories

		12V DC Battery
		Battery Box
		Stainless Steel Tripod Stand
		12V 40W Solar Panel
		IP65 Enclosure for Data Logger
		Mounting Accessories for sensor installation and solar panel installation.
		Stainless Steel Arms for sensor installation