

## AUTOMATIC WEATHER STATION [COMPACT SERIES]

### Product Introduction

**RK-Compact-AWS** having the industrial grade micro controller ensure the reliability, accuracy and continuous performance in the toughest weather condition. **RK-Compact-AWS** is the best choice for the research works in the market. Design makes easy to installed by one person and reduce the transportation cost. AWS **Compact series** all model comes with the tripod stand, solar panel and battery an intelligent solar and AC power circuit make the system self-powered.

**RK-Compact-AWS** AWS is categorized the four models **Compact 3 in 1** | **Compact 5 in 1** | **Compact 6 in 1** | **Compact 7 in 1** | **Compact 8 in 1** which can be selected by the user according the measuring weather parameters.

Compact Data logger having the facility of the measuring the Temperature, Wind Speed, Wind Direction, Barometric Pressure, Relative Humidity, Dew Point, Solar Radiation and Rainfall. All the above model measuring the Data logger for the collection of real time data automatically. **16 X 2** alphanumeric display and **1 X 4** keypad is provided at front of data logger for programming data logger and monitoring sensor reading at site without the help of computer.



### Data Logger View



PROFESSIONAL LINE	SPECIFICATION
<b>Model</b>	Compact-datalogger version v-21.7
<b>Display</b>	16 Characters x 2 Lines alphanumeric display
<b>Measured Parameter</b>	Date, Time, Air Temp. (°C), Max Air Temp.(°C), Min Air Temp. (°C), RH (%), Max RH (%), Min RH (%), Wind Speed (m/s), Maximum wind speed (m/s), Average wind speed (m/s), Wind Direction (Deg), Rainfall (mm), Dew Point (°C), Solar Radiation (watt/m), Air pressure (hPa), Open Pan Water Level (mm), Battery (volts)
<b>Real Time Clock</b>	Stability long-term: ±1 ppm / year Stability (temperature): ±3.5 ppm or better form -40° to 85°C
<b>Logging Rate</b>	1 min to 1 hours
<b>Data Storage</b>	16 GB (sufficient for more than 5 years of logging in 1 min. logging rate)
<b>Power supply</b>	5 volts
<b>Battery Life</b>	< 5 years in continuous operation
<b>Clock accuracy</b>	±2 seconds per year
<b>Battery Charging</b>	Through solar panel or 220 Volts AC
<b>IP rating</b>	IP 65
<b>Operating Temp.</b>	-40°C to 75 °C
<b>Operation Humidity</b>	0 to 95% no-condensing
<b>Data Retrieval</b>	SD Card and RS 485 (Optional) No need of any software direct copy and past
<b>Data Transmission</b>	GPRS telemetry or WIFI in IOT (optional)
<b>Watchdog timer</b>	System Reset Upon Microprocessor Failure
<b>Weatherproof encl.</b>	IP 67 weatherproof enclosure provides Optional



### Battery Charges and Battery


PROFESSIONAL LINE	SPECIFICATION
<b>Model</b>	BC-life6
<b>Output Voltage</b>	5 Volts DC
<b>Protection</b>	Reverse Polarity Battery over Charge Protection Battery over Discharged Protection
<b>Battery Charging</b>	Provided Inbuild solar charging Circuit through solar panel (6 V, 6 watts) 220 volts AC supply (optional)
<b>Battery Life</b>	More than 2 years
<b>Battery Indicators</b>	2 wire for the logger to show in logger Soft Start Charging or good health of battery
<b>Advance Feature</b>	Battery Temperature measurement inside Disconnect charging when temperature of batter goes high than normal



## SENSOR SPECIFICATION

TEMP. AND HUMIDITY	PROFESSIONAL LINE	SPECIFICATION	AIR PRESSURE
	Measuring range temperature	-40° C to 123 ° C	
	Measuring humidity	0 to 100 %	
	Accuracy temperature	± 0.3 ° C @ 5 to 40° C	
	Accuracy rel. humidity	± 2% @ 20 to 80 %	
	Resolution of temperature	0.01 ° C Typical	
	Resolution rel. humidity	0.05 % RH Typical	
	Operating condition	-40°C to +70 ° C @ 0...100 %	
	Supply voltage	0 to 5 volts	
	Weather shield	IP 65 provided	
	Dew point	Calculated Provided	
Measuring range air pressure	300 hPa ~ 1100 hPa		
Accuracy air pressure	±0.12hPa or better		

WIND SPEED	PROFESSIONAL LINE	SPECIFICATION	WIND DIRECTION
	Measuring range wind direction	0 ° to 360 °	
	Measuring range wind speed	0.8 ... 50 m/s	
	Accuracy wind direction	2°	
	Accuracy wind speed	0.5 m/s at 0.8 ... 5 m/s and 2 % FS at 5.02... 50 m/s	
	Resolution of the wind direction	2°	
	Resolution wind speed	0.06 m/s	
	Operating condition	0...+70 ° C • 0...100 %	
	Supply Voltage	0 to 5 volts	
	Material	Polycarbonate	

RAIN GAUGE	PROFESSIONAL LINE	SPECIFICATION
	Type	Tipping Bucket Self Empty
	Measuring intensity	500 mm/ hours
	Accuracy of rain gauge	150 mm / hour; better than ±3%
	Rain Gauge Diameter	159.6mm
	Collection area	200 cm <sup>2</sup>
	Design	Aerocon for remove the wind effect
	Resolution	0.20 mm
	Operating condition	0°C to +70 ° C 0...100 %
	Output	Switch / pulse output
	Material	Aluminum Powered Coated
Capacity	Unlimited	

SOLAR RADIATION	PROFESSIONAL LINE	SPECIFICATION
	Measuring range	0 to 1800 W/m <sup>2</sup>
	Spectral Response Range	400 - 1100 nm
	Cosine Response	±3% (0° to ±70° incident angle)
	Cosine Response	±10% (±70° to ±85° incident angle)
	Absolute accuracy	±5% of full scale
	Resolution	1 W/m <sup>2</sup>
	Drift	up to ±2% per year
	Operating Environment	- 40 to 65 ° C; 0 to 100% RH
	Response	Less than 1 ms
	Type	Silicon cell
ISO 9060:2018	Class C	

# Meteorological Instruments

## OPEN PAN EVAPORATION

## PROFESSIONAL LINE

## SPECIFICATION

## SHAFT AND PULLY SENSOR



<b>Pan Material</b>	Copper / GI / SS
<b>Pan Diameter</b>	1220 mm ±3 mm
<b>User select the pan material and standard before Getting Quotation</b>	
<b>Standard</b>	IS 5973-1998
<b>Depth of the pan</b>	254 mm
<b>Resolution</b>	0.20 mm
<b>Accuracy of pan</b>	±0.25 % at FS
<b>Stand</b>	Wooden
<b>Protection</b>	MS mesh for bird protection
<b>Sensing</b>	<b>Shaft and Pully</b>
<b>Sensor Operating temp</b>	<b>40 to +140°F (-40 to +60°C)</b>
<b>Measuring Range</b>	<b>0 to 7.8 " (0 to 200 mm)</b>
<b>Linearity</b>	0.25%



## PURCHASER SELECT THEIR MODEL BELOW

Model Sensors	Compact 3 in 1	Compact 5 in 1	Compact 6 in 1	Compact 7 in 1	Compact 8 in 1
Wind speed	✓	✓	✓	✓	✓
Wind direction	✓	✓	✓	✓	✓
Rainfall		✓	✓	✓	✓
Temperature		✓	✓	✓	✓
Humidity		✓	✓	✓	✓
Solar radiation				✓	✓
Air Pressure	✓		✓	✓	✓
Open Pan Evaporation					✓
SS Tripod Stand	✓	✓	✓	✓	✓
Battery case	✓	✓	✓	✓	✓
GPRS Telemetry	✓	✓	✓	✓	✓
SMS Alert up to 3 People	✓	✓	✓	✓	✓
WIFI Telemetry	At Extra Cost	At Extra Cost	At Extra Cost	At Extra Cost	At Extra Cost
RS 485 data communication	At Extra Cost	At Extra Cost	At Extra Cost	At Extra Cost	At Extra Cost



### DATA TRANSFER

Through SD card direct in Excel File no need of the software.

Just Copy and paste to your computer

### WIFI COMMUNICATION (optional)

A WIFI shield provided with the PC software user enter the its modem or WIFI dongle User ID and Password and transmit the data to our server for storage and analyzing the data. A cost-effective solution if the system installed in the WIFI range, reduced user internet and no need to purchase an individual SIM for a station.

Advantage of this feature for abroad user is that a WIFI dongle user connected to the logger given port. Either it is CDMA or GSM network dongle Logger push the data into the sever.

### GPRS Modem (optional)

- A GPRS enabled SIM is supposed to be installed in the modem. Based on the Sim Operator, the GPRS settings have to be configured in the modem.
- Once a proper SIM card is inserted and the terminal is switched ON, it will automatically connected.
- The terminal will continuously monitor serial port for messages received from the device connected.
- When modem receives a valid command in the serial port, it will take appropriate action based on the commands.
- Whenever the modem receives command from controller, it will be pushed through serial port.
- Stores Failed GPRS packets in non-volatile memory until system re-stores proper GPRS connection to server (zero data loss).

### RS 485 Communication (Optional)

A RS 485 communication provide optional, logger transmitted the data every 1-minute interval with date and time stamp. A digital Running display also connected with this communication for the see the current data

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Specification and Design Subjected to Change as per future technology, All rights reserve to the RK Engineering Corporation