Weather Monitoring Station

AUTOMATIC | DATALOGGER | TELEMETRY

ENGINEERING AND ENVIRONMENTAL SOLUTIONS

Creating sustainable tomorrows

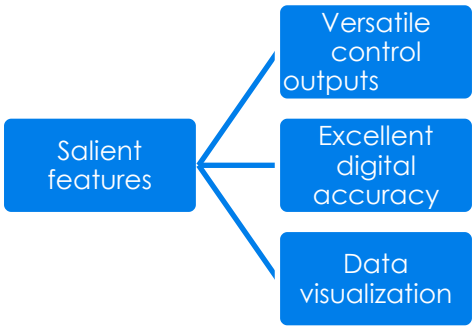
EE-WMS-01

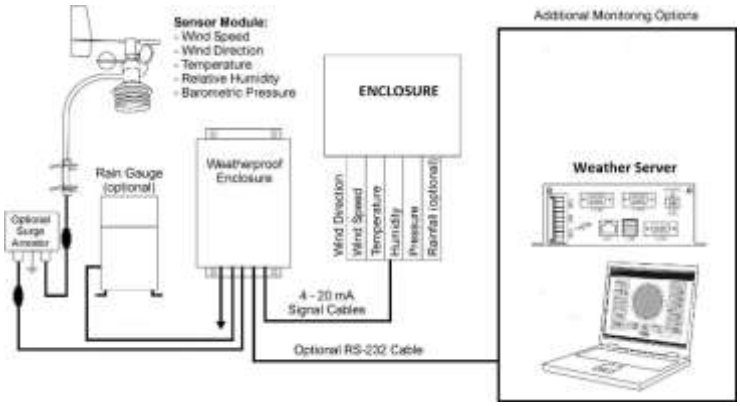
Meteorological Station

EE-WMS-01 Weather Stations are highly sophisticated monitoring & logging of intrinsic weather conditions like temperature, barometric pressure, wind direction, wind speed, wind chill and other optional parameters according to your requirements.

Application areas include agriculture, hydrology, ecology and meteorology. For any sort of customized application, E&E Solutions can give assistance to select the best blend of sensors, data logger and accessories accordingly.

- ✓ ***Field proven in severe weather conditions.***
- ✓ ***Unattended weather recording at remote and exposed sites.***
- ✓ ***Wide choice of sensors and accessories.***
- ✓ ***GSM Modem communication.***





With data-logger

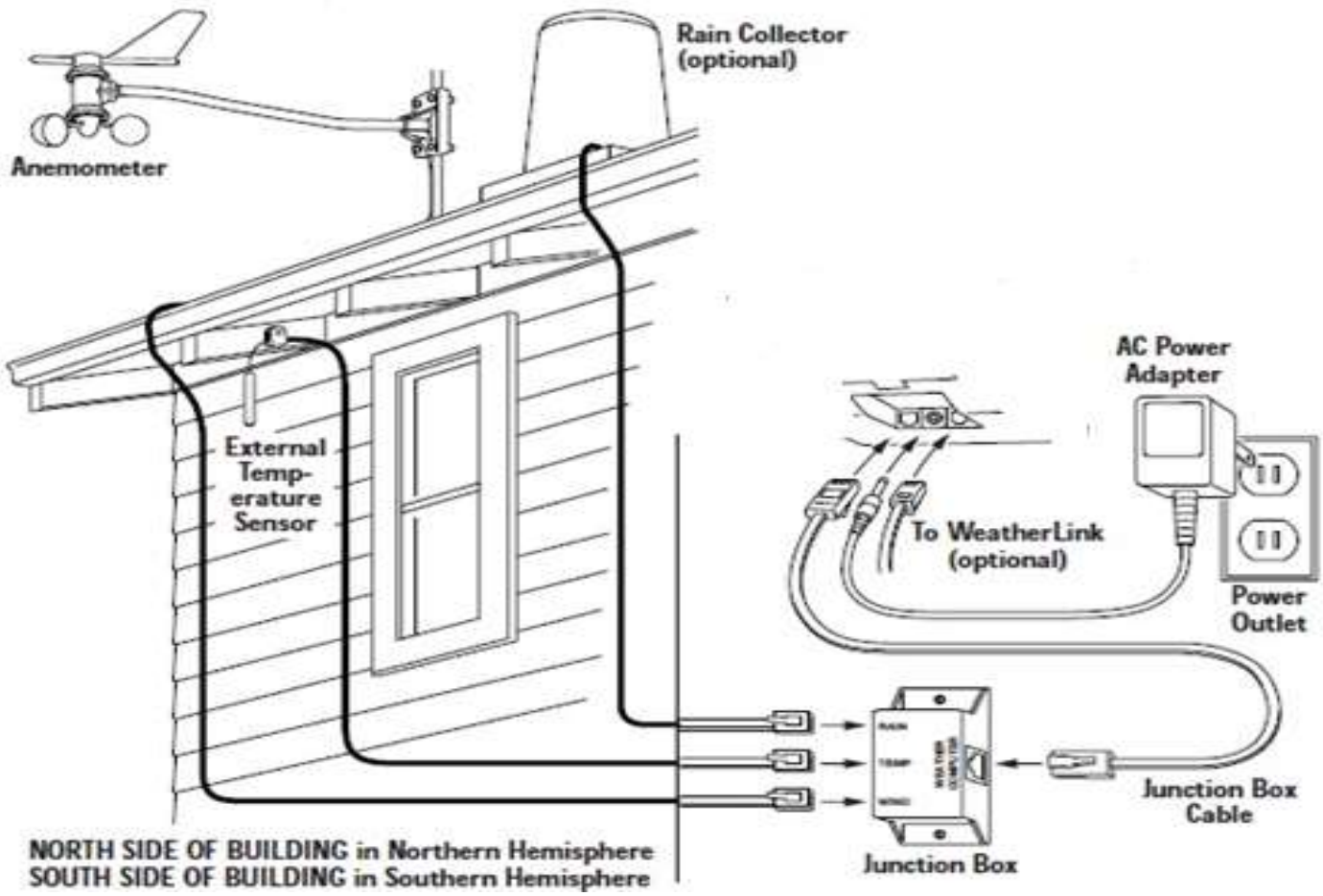
Right at the core of any Weather Station or Environmental Monitoring System is the DL-W (Wired) field data logger. The DL-W is easy to use, reliable and preferably suited for remote site applications.

- ✍ The Basic System type EE-WMS-01 comprises 7 sensors (rain, wind speed and direction, solar energy, RH, air and soil temperature), with 2m mast, canopy and accessories.
- ✍ *The High Performance System type WS-HP1 (illustrated) also comprises 7 sensors, measuring the same variables, but some sensors are higher specification model.*
- ✍ *Complex systems Delta-T has extensive experience of supplying complex weather stations. These often involve a wide range of inputs, including soil moisture sensors and hydrological sensors.*

INTRODUCTION

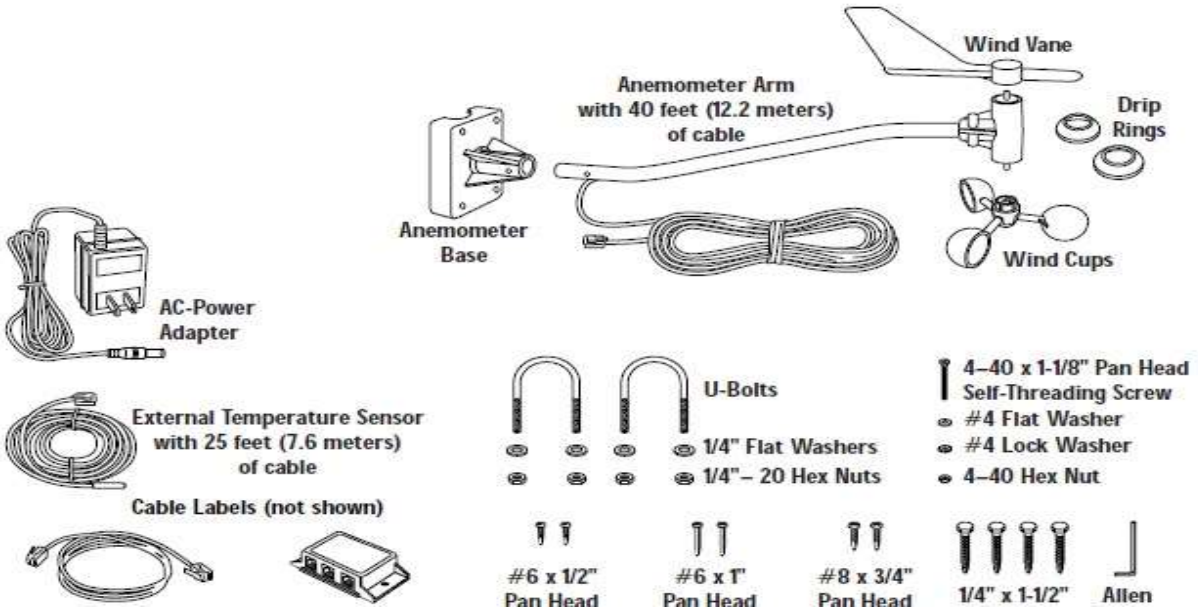
The EE-WMS-01 provides sophisticated monitoring and logging of essential weather conditions such as inside and outside temperature, barometric pressure, wind direction, wind speed and wind chill. This instruction manual takes you step-by-step through the process of assembling, testing, and installing your Weather Monitor II so you can begin collecting data as soon as possible.

The standard station comes with all the sensors necessary to monitor the essential weather conditions described above. For instructions on how to install and operate optional accessories, such as the Rain Collector or the External Temperature/Humidity Sensor, please refer to the appropriate manual.



The diagram shows the typical Weather station in

SYSTEM COMPONENTS



EE-WMS-01 consists of the following components.

Tools and Material needed for Installation

In addition to the enclosed components, you will need the following tools and materials to complete the installation. Please be sure you have everything you need before proceeding with the installation.

- Cable clips or weather resistant cable ties—with screw holes or other means for mounting.
- Small and medium-sized screwdrivers.
- Hand-held magnetic compass or local area map.
- Hammer.
- Small adjustable wrench.

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–Optional Tools and Materials

• 12-volt | 7.2Ah lead acid battery to be used as backup power supply.

• Carpenter's level to level the anemometer base.

• Electric drill with 3/16" (4.8 mm) and/or #29 (0.136" or 3.5 mm) drill bits to drill pilot holes.

• Electric tape if mounting the anemometer on metal mast or pipe.

• 2 stainless steel hose clamps if mounting the anemometer on pipe with diameter

Greater than 1 1/4" (32 mm).

• Standard switch box if mounting the console with the wires running inside the

Wall.

• Medium Phillips screwdriver if mounting the console on a wall.

Optional Accessories

The following accessories are designed for use with the Weather Station EE-WMS-01.

• The standard external temperature sensor, allows you to measure outside humidity addition to temperature.

• Rain Collector enables you to measure daily and accumulated rainfall. Separate models measure rainfall in either 0.01 inch or 0.2 mm increments.

• Weather Software which integrated in the mother board accesses the GSM modem built in, to log the data through Data Logger and generates reports and graphical displays of your weather data in the server using API protocol.

• Sensor Mounting Arm, A single-location mounting option for all your sensors. Includes positioning for anemometer, external temperature or temperature/humidity sensor (with Radiation Shield), and Rain Collector (with Rain Collector Shelf).

• Radiation Shield protects the temperature or temperature/humidity sensor from the sun and the effects of radiated and reflected heat. Increases the life of the sensor and the accuracy of the readings.

• IP65 under IEC529 rating Ingress protection Junction Box-Enclosure Provides upgraded protection against radio frequency interference (RFI), electrostatic discharges (ESD), Water proofed and power surges that can come through sensor wires.

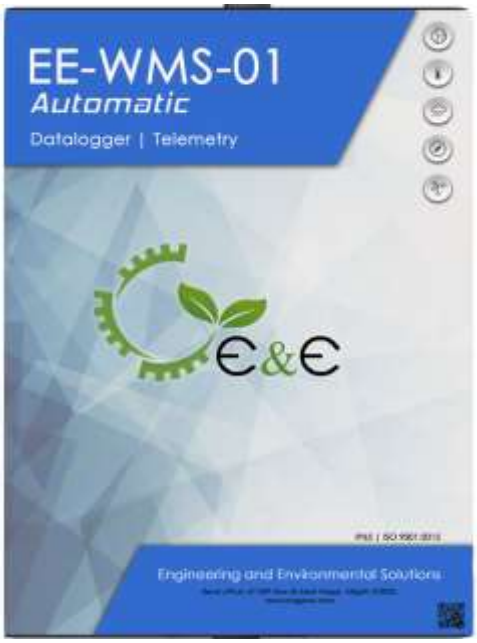
• Extension Cables Extends cable length for total cable runs of 80-140 feet (24-42 m) sensor to console. Order the 4-Conductor Extension Cable [in lengths of 40 feet (12 m) or 100 feet (30 m)] for use with the anemometer, external temperature sensor, Rain Collector. Order the 6-Conductor Extension Cable [in lengths of 40 feet (12 m) only] for use with the External Temperature/Humidity Sensor.

• Junction Box Cables Order a Standard 8-Conductor Cable for greater flexibility in the placement of your console. Comes in lengths of 25, 50, and 100 feet (7.6, 15.2, and 30.4 m).

About Data Logger

DL-W Data Logger

The DL-W provides a versatile solution for both simple and complex recording and control applications. For many applications the DL-W is quicker and simpler to set up and install than competitive systems, while still providing full access to a rich set of advanced features. The relay outputs can control experiments and applications with exceptional sophistication using the Script Editor.



Flexibility and customization

The DL-W's analog inputs can be fully customized. Each channel can have its own input type and recording parameters. Software gives the user control over reading frequency, thresholds and units, and provides recording options for average, min and max, plus specialized wind options - including wind rose, gusts and wind averaging Users can add their own custom sensor types to the sensor library, exploiting the DL-W's detailed configuration options. The DL-W provides 4 input ranges down to microvolt resolution with adaptive auto-ranging, excellent analog accuracy, and configurable sensor excitation - enabling it to support nearly all analog sensors. Calculations based on the measurements from several input channels can be recorded and displayed as additional virtual channels (calculated measurements).

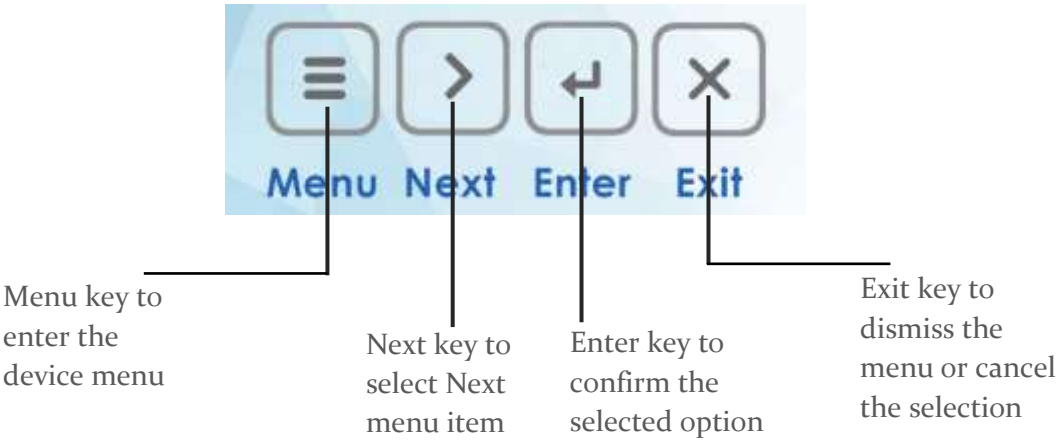
Ease of use

Simple point and click software makes it easy to configure channel set-up and recording intervals. The menus that support the advanced customization options can be displayed or hidden as required. Sensor connections are laid out logically with clear, easy-to- follow diagrams and notes. The DL-W weatherproof case, battery power and convenient accessories make it very easy to install in the field – often without the need for a secondary enclosure.

Instruction Manual

This section walks you through the step-by-step standard operational procedures on how to use the monitor/data logger.

Section 1: Button functionality



Section 2 : Start up Screen

Under the normal functioning of the Weather station, the above screen is visible, displaying the real time parameter values.

Section 3 : Menu

This is the Menu screen which appears when the Menu key is pressed.
There are three option provided namely:

- System Setup
- Data Backup
- Product info

- The System set up menu option provides three sub menu to set up clock, Cellular operator and Logging time interval, which is discussed in further sections.
- Data backup provides the options to manipulate the data backup functionality.
- Product info option displays the information related to the Weather Station unit, like the product id and IMEI no of the GSM module.

Section 3.1 : System setup

System set up contains three sub menus:

- Set Clock
- Network
- Log Time

a.Clock Setup

This menu option is provided to set the time of the device. Use the combination of **Next** and **Enter** key to change time.

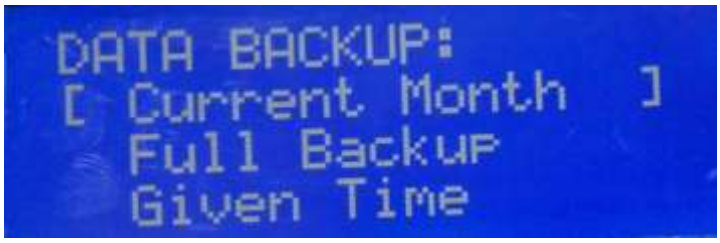
b. Network setup

Here the operator for the SIM card is selected. Only Airtel, BSNL and Vodafone are supported. Choose the operator as per your requirement.

c. Log Time

Choose one of the three log intervals, amongst 60, 30 and 5 minutes.
After choosing the desired time interval, press Enter key to save the selected time interval value.

Section 3.2: Backup



The screen where you will be entering the desired month to backup data

This menu option takes you to the screen where you can choose to backup the logged data in the memory of the device.

- **Data Copy:** this sub menu provides the detailed option of how you want your backup (of current month, all previous month data excluding current month and the desired date data.)
- **Delete data:** Be careful while going through this option. This is where you will be deleting the previous recorded data. Choose carefully which data you want to delete. Data once deleted cannot be recovered.
- **Format memory:** To completely erase the internal memory of the data logger, proceed with this option.

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