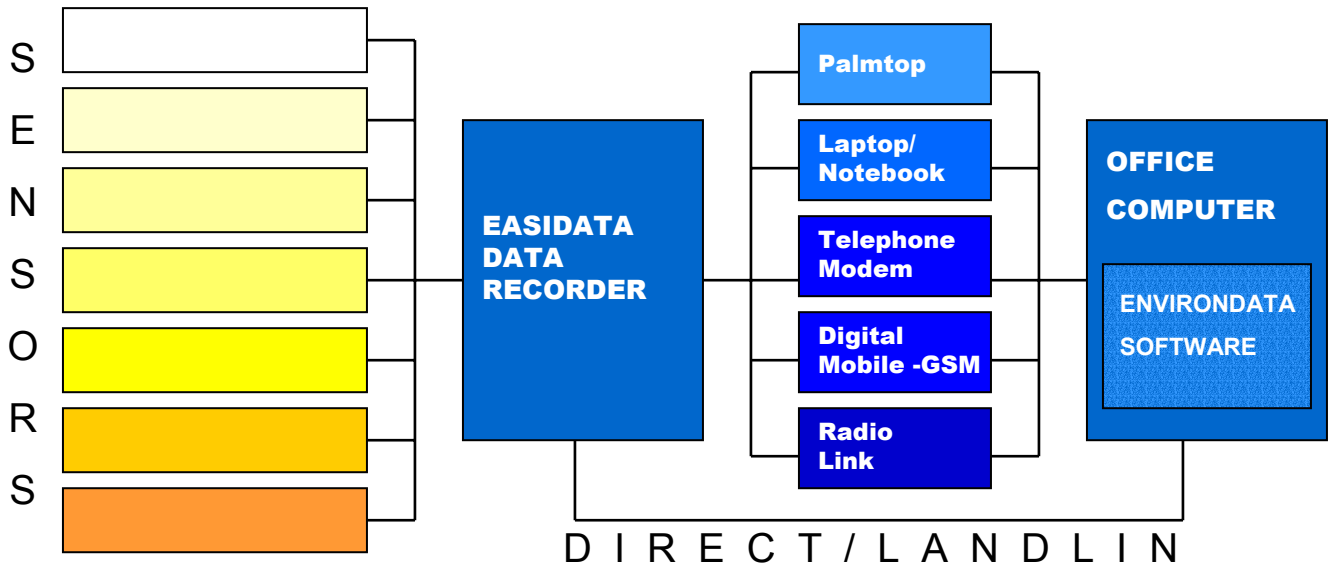


# The Weather Station to handle all your monitoring needs

The Envirodata EASIDATA Mark 4 Weather Station is a robust computerised system of compatible components that measures and records environmental conditions in real time.

Each system consists of four key components:

**External sensors** that measure environmental parameters and transmit raw data to a **data recorder** that analyses the raw data and calculates the results before storing into internal memories, ready for the **communications system** that retrieves and transmits the results to an external computer, where **Envirodata software** will store, display and convert your data into useful information.



Each system is programmed and customised to measure the environmental factors you need.

## Unique Sensors

Envirodata uses a unique digital pulse (frequency) transmission system to ensure accurate and reliable data is collected from the sensors.

This means long cables can be used, so that sensors can be located at the appropriate heights and positions without regard to the distance between any sensor and the data recorders.

All sensors of the same type or model are identically calibrated in the factory, so that they are fully interchangeable in the field. This means on-site calibration is not necessary.

Each full system includes a free test box, which can test sensors independently of the system to diagnose faults quickly and reliably.

In addition to Envirodata's sensors, a wide range of other sensors can be connected to the system.

## Sensors

- Solar radiation
- Relative humidity (electronic)
- Air temperature
- Wet and dry bulb temperature
- Grass temperature
- Soil temperature
- Rainfall
- Wind speed
- Wind direction
- Barometric pressure
- Soil moisture
- Radiant heat
- Ultra violet radiation
- Photosynthetically active
- Radiation

Currently, Envirodata manufactures 14 different types of sensors to operate with the EASIDATA system.



# Data Recorders - the brains of the system!

The recorder stores up to 80,000 separate readings, making it suitable for very intensive data collection as well as for situations where long intervals between data downloading are necessary.

## Flexible Memory

We've designed our data recorders to segregate data into four memory areas. Daily summaries are stored separately from hourly data, which in turn is stored separately from intensive data.

What's more, the recorder's memories operate like a revolving storage drum: Once each memory is full, only the oldest data is overwritten to make way for new data.

Important information can, therefore, be held for longer periods, which translates to fewer site visits. And there's no risk of the more intensive data collection overwriting the important daily summaries.

## Reliable Long-term Operation

Our systems have two levels of protection from lightning and other power surges.

Firstly, our digital "pulse" data transfer technology is intrinsically more robust to interference than typical analogue systems used by other manufacturers. Secondly, our data recorders also include an extra "watchdog" circuit which automatically restarts the system within 10 seconds of a failure, ensuring data collection is not compromised even under the most inhospitable or isolated conditions.

## Reprogrammability

Our systems are easily re-configured to change sensors, data collection rates, stored information and data per memory, using a simple readable text file.



## Sensor Inputs

Our recorder is designed to handle and analyse any combination of up to 16 plug-in sensors, making it ideal for even the most intensive environmental monitoring situations.

## System Status Indicator

A simple visual system status indicator lets you know the recorder is working correctly at a glance.

## Power Miser

There's no need for mains power. All systems include a solar rechargeable battery that can run the system for several weeks of poor or no sunlight.

## Easy to Collect and Analyse Data

Collection of data from the system is simple and foolproof. Our software automatically transfers the information onto your computer in standard form.

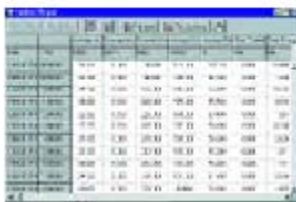
Then it will provide the information in many forms:

- Standard text (columns) – for transfer to other computer software
- Graphs - to review the data visually and make comparisons.
- Spreadsheet form - to analyse and do further calculations.
- Database form - to maintain long term records for easy retrieval



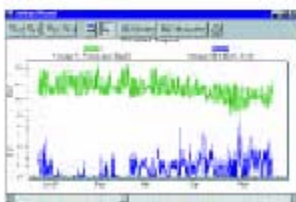
### DATABASE

To maintain long term records for easy retrieval



### TEXT

Standard text (columns) - for analysis and easy transfer to other computer programs



### GRAPHS

To review the data visually and make comparisons

## Communication Options

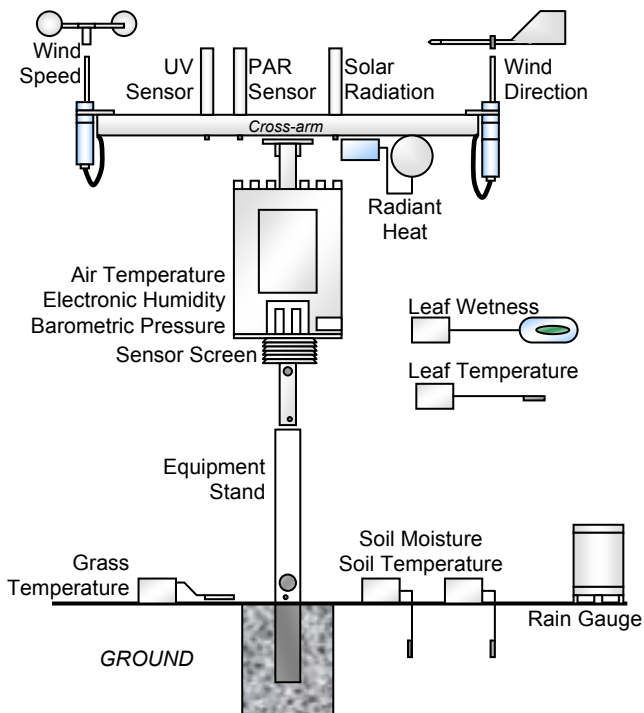
Data can be collected from the weather station by visiting the site with:

- Data Courier Device
- Laptop computer

or Remotely by:

- Direct Cable Connection up to 5 kilometres
- Telephone Line
- Digital GSM Cellular
- Data Terminal
- Radio Link

# System Layout



# Selection Guide

## RELATIVE HUMIDITY

- Wet Bulb or
- Electronic
- Air Temperature
- Sensor Shelter

## WIND SENSORS

- Wind Speed
- Wind Direction
- AirData Software

## ADDITIONAL SENSORS

- Solar radiation
- Grass temperature
- Soil temperature
- Rainfall
- Barometric pressure
- Soil moisture
- Radiant heat
- Ultra violet radiation
- P.A.R.
- Other

## MEMORY

- 64 K
- 256 K

## DATA RECORDER

- 2 Sensor
- 4 Sensor
- 8 Sensor
- 16 Sensor

## OPTIONS

- Solar Powered
- Mains Powered
- External Battery Power
- Lockable Housing
- LCD Display

## STAND HEIGHT

- 2 metre
- 3 metre
- 10 metre

## COMMUNICATIONS

### OPTIONS

- Data Courier or Laptop
- Direct Cable
- Telephone
- Digital GSM Cellular Data Terminal
- Radio

# Specifications

## GENERAL

### Sensors

2,4, 8 or 16 digital (pulse counting) inputs with individual, plug-in sealed connectors

### Resolution

16 bit (1 part in +/- 32,000): 0.002% of full scale

### Memory

64 k battery backed RAM - stores 20,000 values, allocated to 4 independent memory areas. Optional 256 k - 80,000 values

### Real Time Clock

32 KHz Crystal, accurate to better than 5 minutes per year  
Systems Status Indicator  
High intensity LED with 3 distinct flash rates

### Power

Recorder consumption typically 10 mA and 35mA while communicating. Sensor consumption typically 0.1 to 5.0 mA

### Battery

12 volt 6 AH internal sealed rechargeable gel cell - capacity for 4 weeks operation without solar panel

### Solar Power (Optional)

5 or 10 watt panel connects to internal regulator. External supply options also available

## CAPACITY

### Sensors

Independent rescaling to readable units for each sensor

### Sample Period

1 second to 10 minutes

### Storage

Each storage command refers to up to 7 sensors, and 1 memory area and can be activated independently at a fixed time or a repeating interval (32 commands available)

### Commands

Current value, maximum, minimum, average, total, over any period.

Relative humidity calculation (from wet and dry bulb), degree - days (heat units), Penman evaporation, wind vector analysis (Air Data). Special event storage if: greater than, less than, average greater than, difference greater than. Special commands on request

## READOUT

### Data Format

Readable (ASCII) text file, including calendar, dates and times, 1 per memory

### Communications

RS232c standard, 300 to 9600 baud

### Connector

9 pin "D" type female

Sensor	Units	Model	Range	Resolution	+/-Accuracy	Drift
Air Temperature	degrees C	TA10	-20 to 60	0.1	0.2	0.15
Relative Humidity	%	RH21	0 to 100	1%	5%	5%
Rain Gauge	mm	RG12	0 to 350	0.2	0.2mm	*
Wind Speed	kph	WS30	0 to 200	0.1	1	*
Wind Direction	degrees	WD32	0 to 360	1	5	*
Solar Radiation	W/m2	SR10	0 to 1500	1	5%	2%
PAR	umol	PR10	0 to 2500	1	5%	2%
Ultra Violet	W/m2	UV10	0 to 100	1	5%	2%
Soil Temperature	degrees C	TS10	-20 to 60	0.1	0.2	0.15
Soil Moisture	Bars	SM10	0 to 10	0.1	0.2	*
Leaf Wetness	%	LW10	0 to 100	1%	5%	*

\* Annual drift not applicable to the technology or too small to be relevant.