

# 12 WIND SPEED AND DIRECTION

## WIND SPEED AND DIRECTION SYSTEMS

Essentially there are two systems available for the PC based wind speed direction. System 1 consists of a system designed for short distances transmission where as System 2 is designed for a longer distance transmission rate between the sensors themselves and the PC operating system.

The wind sensing heads utilise latest OEM sensors manufactured by Casella CEL.

### System 1

Transmits data directly into PC over distances up to 50m.

The wind speed and direction sensors are mounted on a cross arm. No sensor interface module is required, merely a junction box. The outputs from the sensors are linked via a Connection Box to the RS 232 port on the PC.

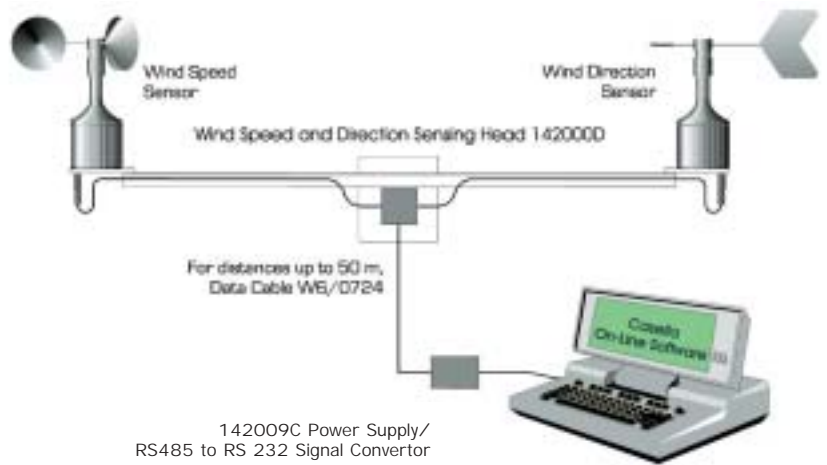
A Universal 12V Power Supply is also included to provide power for the sensors.

The anemometer uses a non-contacting optical encoder transducer providing a pulsed 0-5V output (frequency directly proportional to wind speed).

The wind vane employs the very latest Giant Magneto Resistive (GMR) magnetic sensing technology to offer accurate, frictionless sensing with zero dead-band at north.

Both sensors are manufactured from high quality anodised aluminium, which

guarantees functional reliability even under the harshest of environmental conditions. The sensors are mounted on a zinc galvanised, steel cross arm using corrosion resistant fittings. U-bolts can be provided for fitting to masts from 50 – 115mm in diameter. Heated versions of both sensors are available if required. (see weather sensor section for further details)



### System 2

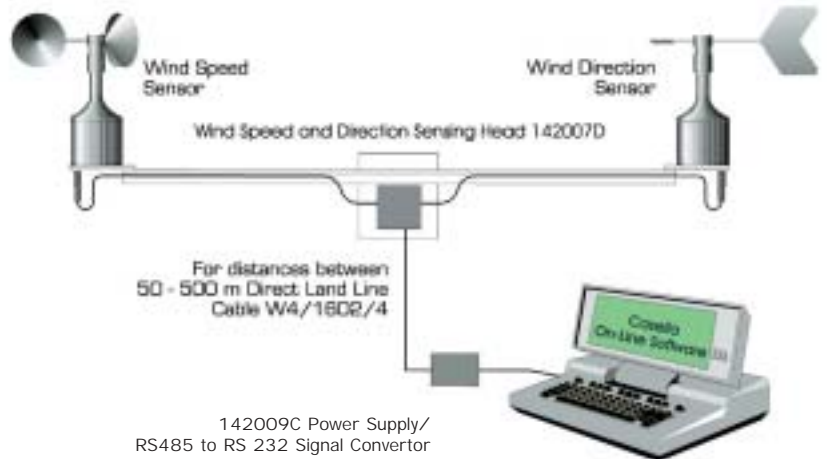
Transmits data directly into PC over distances between 50 and 500m\*.

The wind speed and direction sensors are mounted on a cross arm which includes a signal-conditioning interface that generates an RS 485 output. This output passes via an RS 485 to RS 232 Signal Converter to the PC.

A Universal 12V Power Supply is also included to provide power for the sensors.

\* For distances greater than 500m, please contact the Casella CEL Sales Department.

State cable length when ordering your system.



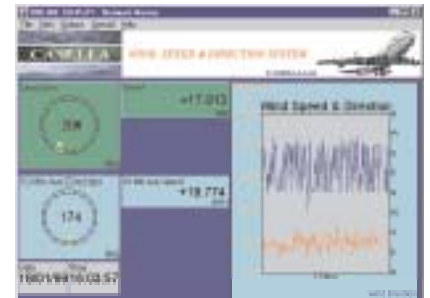
### Online Pro Software

The wind, speed and direction information can be fed to the PC where the Online Pro software enables full manipulation of the data, both historical and real time information. The Online Pro software is a 32-bit programme compatible with most PC set up profiles. It is also available as a networked software programme where additional licences can be purchased.

The screen illustrations show the type of information available on line.



Wind rose screen shot



Software screen shot

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#### MULTIMET - WIND

The Multimet Wind is a professional and easy to use system to display and log horizontal wind speed and direction. The system has been designed in response to a need from both industry and meteorologists alike, for a lower cost, professional installation that suits a wide variety of applications. These may include clients with a requirement for either current or historic wind data e.g. chemical sites, heavy industrial emitters, ports, harbours and airfields. Essentially, the Multimet consists of a versatile and compact display system together with a cross arm with wind speed and direction sensors.  
(See next page.)

#### Display

The display system is based upon a clear graphical LCD with a variety of different screens, to present wind data in a clear and unambiguous format. The signal from the sensors is transmitted to a junction box at the rear of the display and a microprocessor performs the required calculations. A high contrast, transfective LCD display with back light facility maintains crystal clarity in all lighting conditions from a darkened radar room, to bright sunlight.

The display screen may be either panel mounted (for typical aviation installations) or contained within an optional freestanding desktop enclosure. The range of data that may be displayed on the screen is as follows:

- Instantaneous wind speed and direction
- 2 minute rolling average wind speed and direction
- 10 minute rolling average wind speed and direction
- 2 or 10 minute maximum and minimum wind speed

- 2 or 10 minute extreme variation of wind direction
- Wind gust warning
- Scrolling wind speed graph

Different display screens are accessed via tactile keys on the front of the display. A user friendly menu system appears on the screen when one of these keys is pressed, allowing simple and quick access to the other screens. These consist of real-time wind speed and direction values in both graphical and numerical formats. For example, wind direction can be displayed as a compass, or as a value. Data can also be displayed in large figures for easy reading at a distance. Where there is a requirement for observing longer time scales, data can be displayed as a scrolling graph, over the preceding hour.

An audible alarm is available whenever the instantaneous or 2 minute wind speed exceeds a user-defined threshold. Logic level output is provided for interfacing to other equipment.

A gust warning message identifies when the peak wind speed exceeds the associated rolling mean wind speed by a programmable limit. CAN™ bus networking protocols are used to network multiple displays via a two wire data transmission link at distances of up to 1.5km between displays.



Multimet Wind, Speed & Direction Sensing Head

### Data and Software

Data may be recorded within the internal flash memory of the unit with a capacity for storing up to 4,500 readings. The user may set the logging interval from 1 to 120 minutes. As an example, data being logged every 10 minutes will give a total storage of over 30 days. Data can then be transferred to an IBM compatible PC via the RS232 interface and interrogated via Windows™ based display and analysis software. This is an easy to use flexible package providing multi-user Windows™ network access to real-time and historical data.

### Features

- Low cost, professional system
- Clear, bright, transreflective LCD
- Full datalogging capabilities
- Audible and visual alarm facility
- User-friendly display and analysis software
- High quality Met. sensors

### Applications

- Industrial emissions monitoring
- Wind monitoring at harbours, airports and helipads
- Wind monitoring for bridge management
- Nuisance dust monitoring for construction sites
- Landfill and waste management sites

### Display Specification

Power supply	12V DC supply @ approx. 250mA
Display	160 x 128 transreflective graphics LCD with CCFL backlight
Display units	mph, km/h, m/s, knots
Sensor polling	Approx. 5 readings per second
Processed data	Instantaneous value updated every second 2 and 10 minute rolling averages updated every 5 seconds 2 and 10 minute maximum and minimum values updated every 5 seconds 2 and 10 minute and 5 second direction variation sector
Datalogging interval	1 to 120 minutes
Memory capacity	4500 readings
Logged data comprises	Date, time, average, maximum and minimum speed and direction over logging period
Alarms	Instantaneous or 2 minute wind speed, Loss of sensor data
Dimensions	Panel mounting: 110 x 110 x 80mm, Desk top enclosure: 125 x 125 x 133mm

### Ordering Information

Wind display unit (panel mount) with power supply unit	175000D
Wind display with enclosure and power supply unit	175001D
Wind speed and direction sensing head	142000D
(Specify length of cable when ordering)	W6/0724

### Contact Details

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