

Features

- Wind speed $\pm 2\%$ accuracy
- 360° wind direction indication
- Low inertia cup assembly for fast response
- Dynamically balanced wind vane with triple ballrace shaft
- Magnetically operated Mercury wetted reed switch for bounce-free pulse output
- 0-1 Kohm output of wind direction
- Flexible mounting arrangements
- Wind tunnel tested
- Clear anodised aluminium housing and mount
- Suitable for naturally ventilated building applications

Wind Speed Sensor

Speed sensor	Magnetically operated, mercury wetted reed switch
Output	1 contact closure per 1.493m (zero bounce)
Min. start speed	0,5 m/s
Accuracy	$\pm 2\%$
Linearity	$\pm 2\%$
Contact rating	50 W (dc resistive)
Supply voltage	100 Vdc max. May be used in circuits down to zero voltage and current
Supply current	1 A maximum

Wind Direction Sensor

Direction sensor	360° endless travel
Electrical travel	357° ($\pm 2^\circ$)
Output	0-1 Kohm for 0-357°
Resistance tolerance	$\pm 3\%$
Temperature coefficient of wire	± 20 ppm/°C
Linearity tolerance	$\pm 0,5\%$
Supply voltage	Max. 80 Vdc
Recommended voltage	24 Vdc
Electrical conn.	Flying lead (3 m long)
Ambient range	-20...+70°C
Dimensions	Height 280 mm Max. arc 120 mm
Protection	IP65
Weight	500 g (excl. mast or bracket)
EMC	EN-50081-1 Emission EN-50082-2 Immunity

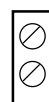
Application

The sensors accurately measures the wind speed and direction, providing output signals compatible with most DDC controllers.

Intended for applications where external weather conditions influence the building control strategy, such as for the automatic closing of windows in high wind conditions.

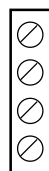
Connections

Windspeed (All versions):



- Green - Supply: 24 Vdc
- Black - Pulse output

Wind direction (WSDA, WSDM and WSDB):



- White
- Black
- Red - Resistance 0-1 Kohm
- Black - 0v

Ordering Code

WSA	Wind speed sensor
WSM	Wind speed sensor incl. mast 2m
WSB	Wind speed sensor incl. bracket
WSDA	Wind speed & direction sensor
WSDM	Wind speed & direction sensor incl. mast 2m
WSDB	Wind speed & direction sensor incl. bracket

Functionality

The wind speed sensor produces one contact closure per rotation of the head which is equivalent to 1.493 m of travel.

This needs to be counted over a time period within the controller to produce a rate of m/.

The optimal direction sensor produces a resistance varying between 0 to 1 Kohm as wind direction varies between 0 to 357°.

Zero degrees is normally set at North with a dead band of 3° (358° to 360° inclusive).

The mounting bracket consists of an anodised aluminium alloy elbow and a bracket plate with two U clamps suitable for fixing to masts or poles.

Description

The sensors provides accurate measurement of wind speed and direction for building applications where the control strategy needs to respond to outside weather conditions.

The unit incorporates an anodised aluminium mounting arm suitable for mast or wall-mounting using the clamp supplied.

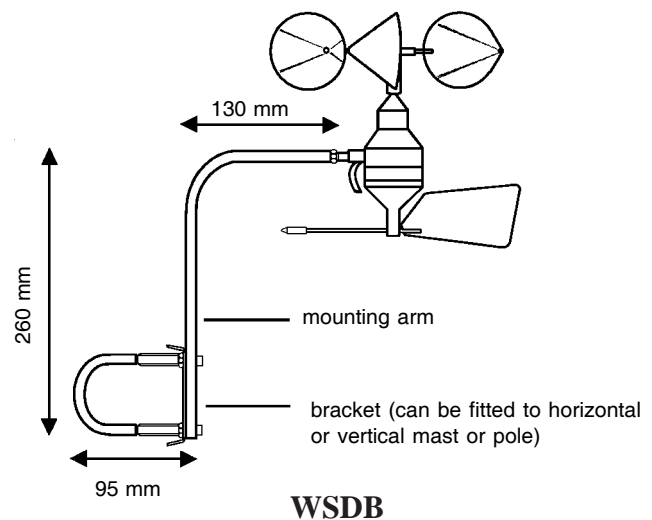
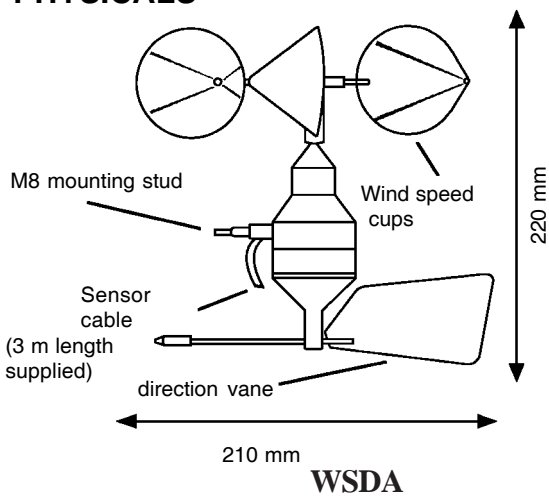
The wind speed component consists of a low inertia ABS cup assembly for fast response, mounted on a dual ballrace supported stainless steel shaft.

A magnet on the rotor operates a long life reed switch producing one pulse per rotation.

The wind direction component consists of a dynamically balanced wind vane operating a triple ballrace supported shaft and microtourque 357° potentiometer with a deadband of 3° at North.

The sensors has been wind tunnel tested at the Meteorological Office to determine its full windspeed characteristics. A wind speed only version is also available.

PHYSICALS



Installation

The installation process involves:

- 1 Find a suitable location
- 2 Fix the mounting bracket
- 3 Attach sensor head to elbow
- 4 Align the direction sensor to the north (if fitted)
- 5 Connect to controller (use correct specification extension cable if necessary)

- 6 Configure controller.

The direction sensor requires six function modules to cater for 3° dead band and hysteresis

- 7 Test and commission

