

MONITOR SENSORS

Wind Alarm

μSMART Wind Alarm

The ***μSMART*** Wind Alarm monitors the wind speed and optionally, the wind direction and provides visible and audible alarms when the readings are out of the user set limits.

The alarm settings include...

- The wind speed threshold and whether the alarm should sound above or below this value.
- The centre direction of the alarm arc.
- The total alarm arc width.
- The time period for which the wind conditions must persist before the alarm is triggered.
- The time period for which the wind conditions must desist before the alarm resets.

Mechanical • Powder coated aluminium case

Specifications

Range: 0 – 200 kph, 0 – 50 m/s
360°

Accuracy: 1 kph – wind speed
3° – wind direction centre
6° – wind direction arc

Operational: -20°C to +60°C

Output options: • **Monibus** serial data ASCII format
• voltage free contacts – NO/NC

Power Supply: 6-24 Vdc unregulated
Supply current: 15 mA active

WAL weight: 800g

WD2 weight:

AN2 weight:

Dimensions: Overall height – 200 L x 150 W x 100 D mm

Mounting: 4 x M6 holes

Cable Details: Customer should detail any extra cabling requirements

Warranty: **12 months** – full details can be found in the Monitor Sensors standard warranty document
http://www.monitorsensors.com/docs/std_warranty.pdf



Order codes:

	see order code matrix on last page		

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Wind Alarm Instructions

The Wind Alarm Unit is to detect a significant wind coming from a particular direction. The strength of the wind to cause the alarm may be set from 1 km/h to 80 km/h in 1 km/h increments.

The wind direction alarm may be set from 0 to 360 degrees in 3-degree increments. The width of the alarm arc about the centre direction may be set from 6 to 360 degrees in 6-degree increments. If the alarm arc is set to the maximum of 360 degrees, then all wind will fall within the alarm arc and the alarm will depend on wind speed alone.

The time period for which the wind conditions must persist before the alarm is triggered is called the on-time. The on-time can be set from 1 to 80 minutes in 1 minute increments. Selecting a longer on-time prevents cycling of the alarm when the wind is gusting over the threshold. Similarly, the time period for which the wind conditions must desist before reset is called the off-time. The off-time can be set from 1 to 80 minutes in 1 minute increments. This is the period of time for which non-alarm conditions must persist before the alarm is cleared.

Connecting the Unit

The alarm unit must be connected to **μSMART** Anemometer AN2 and a **μSMART** Wind Direction Sensor WD2. These instruments each have three wires for power and communications.

The colour code for Monitor Sensors HCG003 cable is...

Red wire	6-24 Vdc power
Yellow wire	Monibus communications bus
White wire	Common/ground

The instruments are wired in parallel and the connection may be made at any convenient point. The resulting three wires must be extended to the alarm unit and connected via the three-pin **Monibus** socket. The alarm unit provides the correct power supply for the sensors from this socket. The wind instruments can be supplied with matching 3 pin plugs, and a distribution board and an extension cable with matching plugs if required. By default, the alarm unit expects an AN2 anemometer with address 6, and a WD2 wind direction sensor with address 7.

The alarm unit requires power of 12 Volts D.C. at 100mA.

The power input, **Monibus** communications and alarm relay contacts are 4mm² screw terminals.

Operating Instructions

When the Wind Alarm Unit is switched on, the alarm relay will be off. The LCD display will briefly show the software version number and will then display the current wind conditions. The top line of the display shows the current wind speed in kilometres per hour. If a * symbol is visible at the beginning of the first line, it indicates that the current wind speed is within the alarm range. The second line shows the current wind direction in degrees from North, together with the nearest compass point. A * symbol at the beginning of the second line indicates that the current wind direction is within the alarm arc. A ! symbol at the beginning of the second line indicates that the direction alarm has been overridden because the wind speed is below the threshold of the anemometer. This feature is only operative if wind speeds below the threshold are set to alarm. When both wind speed and direction are in the alarm regions, the count down to full alarm begins. Provided the alarm conditions persist, the alarm will be activated, when the alarm on-time has expired. Pushing the alarm mute button will silence the alarm. The flashing beacon and alarm relay will continue to operate until the wind conditions desist and the alarm off-time has expired.

Alarm settings lock

The alarm settings cannot be changed unless the change key has been inserted into the key switch and turned clockwise to the change position.

With the key switch in the locked position the **menu** button will still step through the menus so that the alarm values can be checked. The up/down buttons will be inoperative.

Setting the speed alarm

- Press the **menu** button once.
- Observe the display. The normal operating mode is to activate the alarm when the threshold value is exceeded and this is indicated by the display indicating - Alm if > xx km/h.
- Press the **up/down** buttons to adjust the wind speed threshold to the desired value.
- To activate the alarm when the wind is less than the threshold value, continue to scroll the threshold until the display indicates - Alm if < 1 km/h. Now set the desired value with the **up/down** buttons.
- Press the **menu** button once to accept the new alarm condition.

Setting the wind direction alarm

- Press the **up/down** buttons to adjust the centre direction of the alarm arc to the desired value.
Eg. if an easterly wind is required to trigger the alarm, set the centre to 90°. The value increments in 3° steps and will roll over from 357° to 0°.
- Press the **menu** button once to accept the new alarm condition.
- Press the **up/down** buttons to adjust the total direction alarm arc width to the desired value. The arc increments in 6 degree steps, which is equivalent to $\pm 3^\circ$ degrees about the centre direction.
Eg. if the centre direction is 90° (East) as in the previous example and the arc is also set to 90°, the alarm segment will be from 45° (North East) to 135° (South East). Note: If the arc is set to 360 degrees, the wind direction will always be in alarm condition and the Wind Alarm Unit will function solely as a wind speed alarm.
- Press the **menu** button once to accept the new alarm condition.

Setting the alarm times

- Press the **up/down** buttons to adjust the on-time to the desired number of minutes. The on-time is the number of minutes that the alarm conditions for speed and direction must be satisfied before the alarm is sounded. The on-time may be set from 1 to 80 minutes. The on-time is normally set to a shorter period than the off-time.
- Press the **menu** button once to accept the new alarm condition.
- Press the **up/down** buttons to adjust the off-time to the desired number of minutes. The off-time is the number of minutes that the alarm conditions for speed and direction must desist before the alarm is reset. The off-time may be set from 1 to 80 minutes.
- Press the **menu** button once to accept the new alarm condition. The normal operation display will be indicated.

Ordering

All wind alarms have NO/NC voltage free alarm contacts.

All wind alarms require an AN2 anemometer – the WD2 wind direction sensor is optional.

A power supply is optional.

Any extra cabling should be ordered as required. Monitor Sensors recommends HCG003 cable – a very tough 3-conductor cable.

order code	Xenon beacon	piezo alarm	NO/NC relay	wind speed units		
				kph	m/s	knots
WA1-1			X	X		
WA1-2			X		X	
WA1-3			X			X
WA2-1	X		X	X		
WA2-2	X		X		X	
WA2-3	X		X			X
WA3-1		X	X	X		
WA3-2		X	X		X	
WA3-3		X	X			X
WA4-1	X	X	X	X		
WA4-2	X	X	X		X	
WA4-3	X	X	X			X

Example orders

WA1-2 Alarm unit wind speed & direction, m/s, voltage free contacts
 AN2 Anemometer – 1.8m cable
 WD2 Wind direction sensor – 1.8m cable
 CH8 plug pack power supply

WA4-1 Alarm unit wind speed & direction, kph, voltage free contacts, xenon beacon, piezo alarm
 AN2 Anemometer – 1.8m cable
 WD2 Wind direction sensor – 1.8m cable
 CH8 plug pack power supply
 HCG003 25m - cable