

# SKYWATCH® WWS

## Wind Warning System

### Instructions for use




This instrument was developed for protecting persons and properties that may be subject to strong winds. It consists of 2 parts.

- A display unit of the wind force, with 4 programmable warning thresholds.
- A multidirectional turbine (wind sensor) enabling measurement of the wind in the horizontal plane and in the vertical a well (turbulence behind objects). The turbine sends its signal magnetically to a transducer located at the end of the cable connected to the display. This transmission system simplifies the installation process.

**Kit 1:** includes only the visual and acoustic alarms.

**Kit 2:** has 4 relays that can be assigned to the different alarms.

**Kit 3:** corresponds to Kit 2 in a waterproof case with an external 240 V power supply.

The SKYWATCH WWS operates from two 1.5 V batteries of type LR6/AA/AM3 (sufficient for over 2 years without replacement) and equally well from an external supply of 6 to 30 VDC  (cigar lighter socket, mains power etc.). When an AC-DC adapter is connected, the batteries are disconnected. If the power fails, the batteries automatically take over.

#### INSTALLATION

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1. Install the display housing with the fixing clamp, sheltered from the rain and from excessive humidity.
2. Install the turbine with the aid of the aluminium bracket, in an open location and sufficiently far from any wall or any other obstacle to the wind, to ensure the greatest accuracy for the measurements. (See pictures on [www.jdc.ch](http://www.jdc.ch))
3. Connect the cable to the housing.
4. Install the cable up to the turbine.
5. Position the transducer on the end of the cable close to the impeller, and preferably perpendicular to its axis of rotation.

#### DISPLAY



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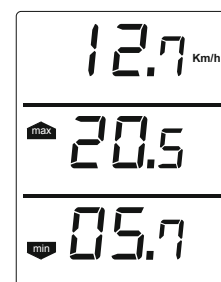
SKYWATCH WWS always displays the instantaneous wind speed on the top line of the display.

##### Before an alarm:


The middle line can display the values of alarms 1 and 2.

The bottom line can display the values of alarms 3 and 4.

To switch from displaying the even-numbered alarms (2 and 4) to the odd-numbered alarms (1 and 3), press for 2 seconds on  (even) or on  (odd).



##### During an alarm:

An alarm becomes active 3 seconds after the threshold is passed. The alarms are activated and the symbol  flashes. When the alarm is activated, the LED for the corresponding line flashes. The acoustic signal sounds for 1 minute. In the case where the active alarms are displayed on the same line, the display switches between the alarms. If the other alarms are not active, the display shows -- .

To acknowledge the alarms, press the  button for 2 seconds.




##### Remarks:

If the ambient temperature is positive, the display flashes during an alarm.

If the ambient temperature is between 0°C and -10°C, the display no longer flashes but if 2 alarms are active on the same line, the display switches from one alarm to the other every 5 seconds.




If the ambient temperature is lower than -10°C, the display does not flash and the switching occurs every 10 seconds when 2 alarms are active.

##### After an alarm:

The symbol  of the corresponding line flashes and the alarm's extreme value is displayed. If 2 alarms have been activated on the same line, use the buttons  and  to switch from one to the other.

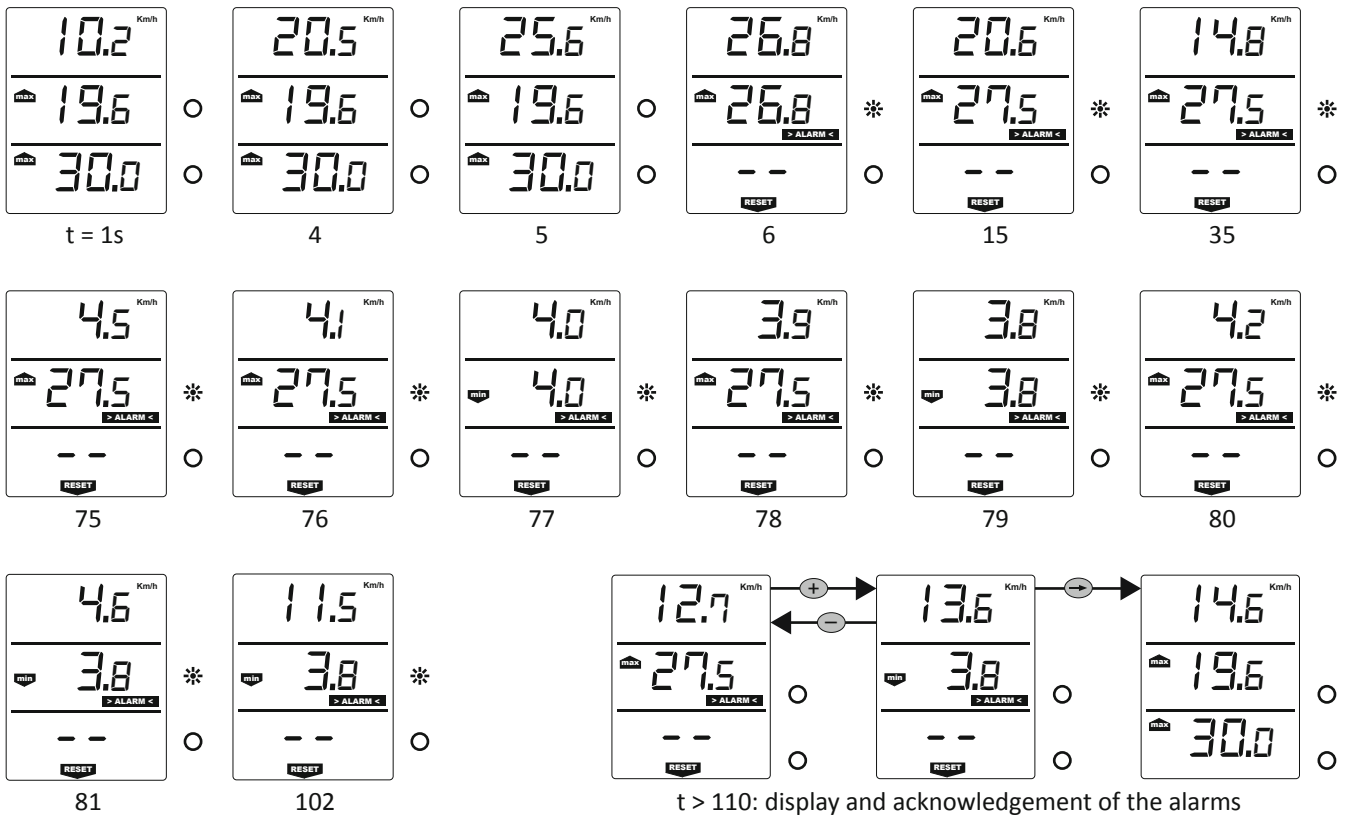
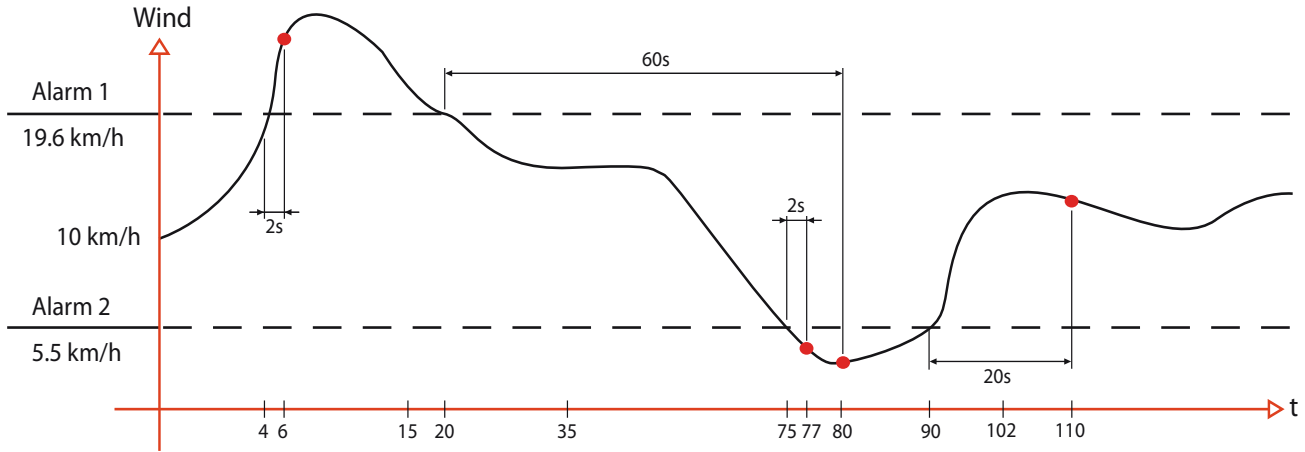
#### EXAMPLE

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In the following example, two alarms will be activated in succession: alarm 1 with a rising edge, and then alarm 2 with a falling edge. After the second alarm the two extreme alarm values are displayed alternately on the same display line. Once the activation times have passed, displaying these alarm values requires use of the buttons  & . To return to normal operation, the alarms must be acknowledged with the button .

**Configuration:** Alarm 1: 19.6 km/h, rising edge, 60 s  
 Alarm 3: 30 km/h, rising edge, 30s

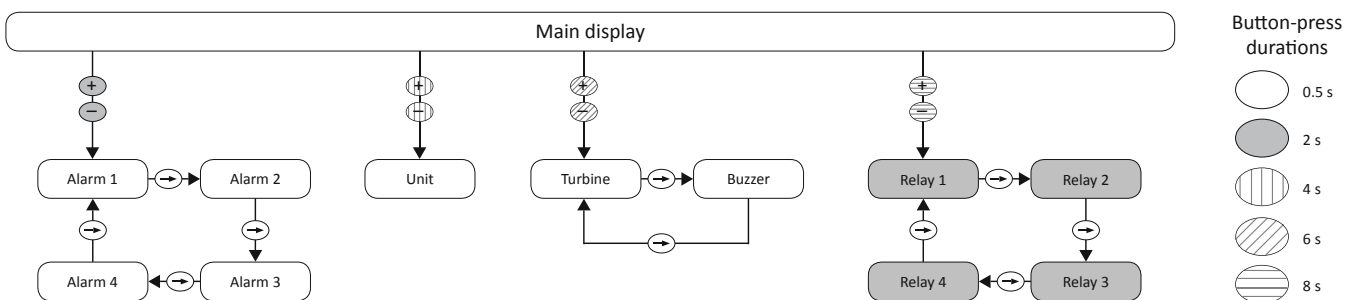
Alarm 2: 5.5 km/h, falling edge, 20s  
 Alarm 4: 50 km/h, rising edge, 40s



**STANDARD SETUPS**

The main parameters of SKYWATCH AWS can be modified in the standard controls, accessible by simultaneously pressing the 2 buttons ⊕ and ⊖ for a certain time.

Once the adjustment mode is entered, the buttons ⊕ and ⊖ enable values to be increased, decreased or switched. One short press on the button ⊖ switches to the next adjustment, and pressing the button for 2 seconds at any time gives an exit from the adjustments and return to the main display.



### Setting alarm values

The setup of each alarm consists of the level of the threshold, of the triggering edge, of the release time after the alarm and the relay selection (Kit 2). If the threshold is set to **OFF**, briefly pressing  $\ominus$  goes to the setting up of the next alarm.

- **Threshold level**

The maximum threshold value depends on the selected unit but corresponds to 150 km/h. Decrementing the value to obtain **OFF** will de-activate the alarm.

- **Triggering edge**

The trigger edge determines whether the measurement must be higher (rising edge -  $\blacktriangle$ ) or lower (falling edge -  $\blacktriangledown$ ) than the threshold for the alarm to be triggered.

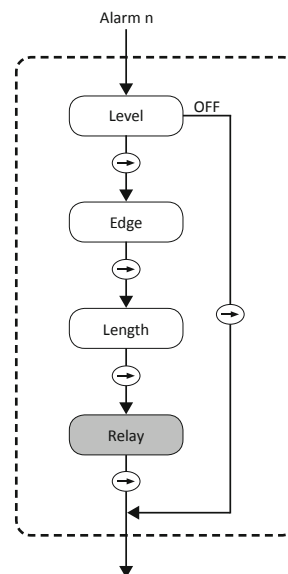
- **Duration of activation**

When an alarm is activated, it will be turned off when the alarm conditions are not met for x seconds.

The times to be selected are: 0 s, 10 s, ... 60 s, -- (infinite; the alarm will not be automatically cancelled).

- **Selection of relay** (only Kit 2)

The desired relay can be selected depending on the alarm. It is possible for several alarms to operate the same relay.



### Setting the unit

The measurement unit for wind speed can be selected from the following units: km/h, mph, knots, m/s and fps.

### Adjusting the special parameters

The special parameters are the model of wind turbine and the activation of the acoustic signal.

- **The turbine model**

The turbine model determines the turbine calibration used by the instrument. In general for the SKYWATCH AWS, the model Pr1 should be selected. The other turbine models are used for specific installations.

- **Acoustic signal**

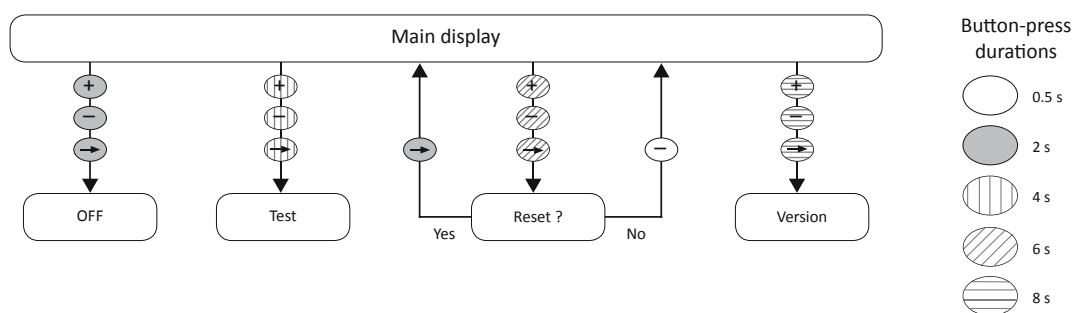
The acoustic signal can be turned on or not (saving energy) for 1 minute when an alarm occurs.

### Setting up the relays (only Kit 2)

The inactive state of each relay can be selected from **no** (normally open) and **nc** (normally closed).

## ADVANCED FUNCTIONS

To access the advanced functions of SKYWATCH AWS, press the 3 buttons  $\oplus$ ,  $\ominus$  and  $\ominus$  for a certain time.



### Mode OFF

The instrument is turned off: no measurements are carried out and the alarm thresholds are not tested. The alarm programming is not modified.

ON: Press the button  $\ominus$  for 2 seconds.

### Self-test

The instrument tests the display, the acoustic signal and the LEDs.

### Reset

The instrument can be initialised to its factory settings on confirmation by pressing the button  $\ominus$ .

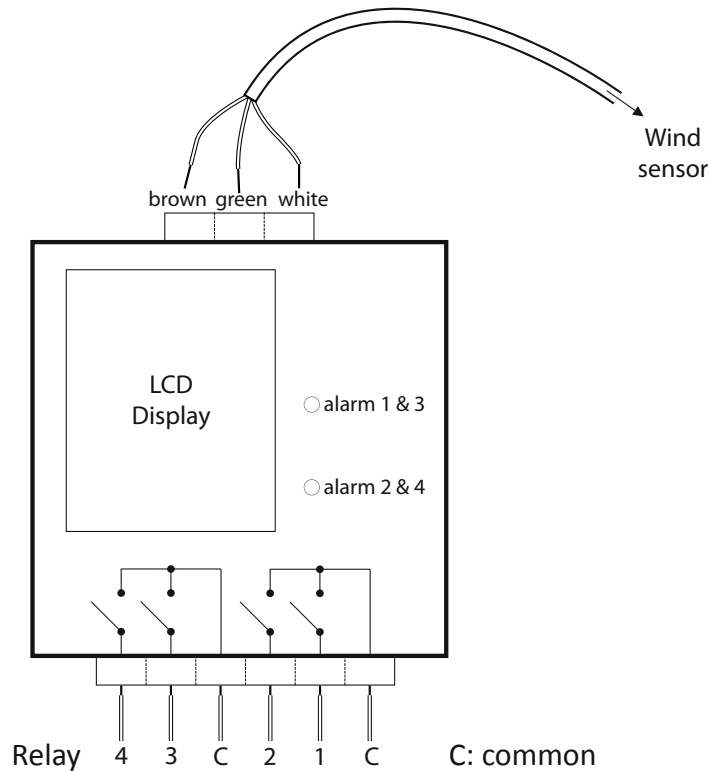
### Version

The version ID of the instrument is displayed for 2 seconds.

## RELAY WIRING (only Kit 2)

SKYWATCH WWS Kit 2 has 4 internal bistable relays that maintain their state (activated or not) even when the power supply is cut. These relays are provided for controlling the power relays or small low-voltage consumers.

Relay characteristics: I max 1 A, V max 48 V (DC or AC)



## TECHNICAL DATA

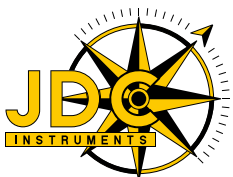
Units	km/h, mph, knots, m/s, fps
Measuring range	5 - 150 km/h (WindSENS3D)
Resolution	1/10 of the unit
Precision	± 3% in the horizontal plane (WindSENS3D)
Measuring cycle	every second

## FURTHER INFORMATION

The SKYWATCH WWS transducer is sensitive to magnetic fields. This enables it to detect the small magnetic pulses sent by the magnet on the axis of the impeller, process them electronically and display the results on the LCD. Because of this sensitivity, SKYWATCH WWS may display values when it is near a magnetic field (coming, for example, from an electric motor, a computer or electric lighting). There is no cause for concern; this does not at all affect the normal operation of the instrument.

## WARRANTY

Starting on the date of purchase your SKYWATCH® WWS is guaranteed by JDC ELECTRONIC SA for one year in respect of all material defects in manufacture, on presentation of the dated sale document. The warranty does not cover damage caused by incorrect use. JDC ELECTRONIC SA cannot be held responsible in any case for any consequences, direct or indirect, nor for any damage that may result from the use of this instrument or from any fault or breakdown in it.



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