

# SKYWATCH® AWS

## Air Warning System


### Instructions for use



This instrument consists of 2 or 3 parts, depending on the options:

- A display unit for the wind force, the percentage humidity and the temperature.
- The measurement system:
  - **Kit 1:** A TrH clip for temperature and humidity and a 15 m cable for use in measuring the wind.
  - **Kit 2 & 4:** A 2 m cable for the temperature and humidity and a 15 m cable for use in measuring the wind.
  - **Kit 3:** A single 5 m cable for measuring the wind, the humidity and the temperature.

SKYWATCH AWS Kit 4 has 4 relays that can be assigned to the different alarms.

The SKYWATCH AWS 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 sensor 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. The bracket can be used in 2 orientations depending on its position. (See pictures on [www.jdc.ch](http://www.jdc.ch))
  3. Connect the cable to the housing:
    - Kit 1: Insert the cable connector into the 3-pole socket on the left and the TrH clip into the 5-pole socket on the right.
    - Kit 2: Insert the plug of the 15 m cable into the 3-pole socket on the left and the plug of the 2 m cable into the 5-pole socket on the right.
    - Kit 3: Insert the plug of the 5 m cable into the 5-pole socket on the right.
    - Kit 4: Insert the plug of the 15 m cable into the 3-pole socket on the left and the plug of the 2 m cable into the 4-pole socket on the right.
- Take care not to insert the 3-pole plug into the 5-pole socket as this risks damaging the equipment.

#### DISPLAY




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##### Before an alarm:

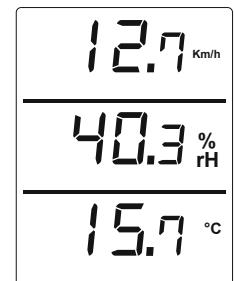
The top line provides for the display of information about the wind (instantaneous and alarms 1-2).

The middle line provides for the display of information about the humidity (instantaneous and alarms 3-4).



The bottom line provides for the display of information about the temperature (instantaneous and alarms 5-6).

Pressing the button  (even alarms) or  (odd alarms) for 2 seconds will display the alarm thresholds. To return to the current values wait for 10 seconds or press the  button for 2 seconds.

Temperature and humidity are measured every 10 seconds. A short press of the  button will make a measurement immediately.



##### During an alarm:

An alarm is activated 3 seconds after the threshold is passed for the wind, and 30 seconds for the temperature and humidity. 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. 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 but the displayed value is the instantaneous value.

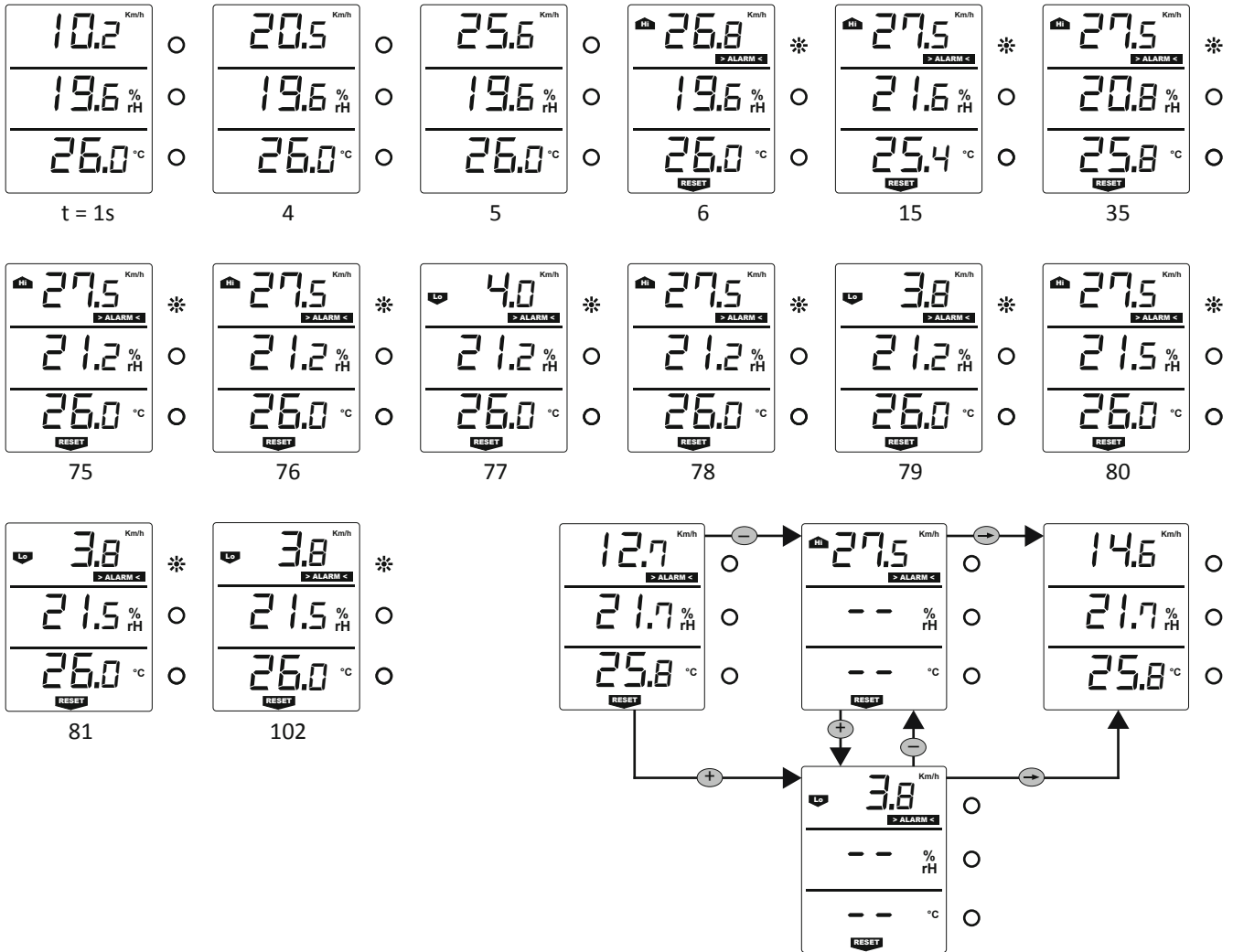
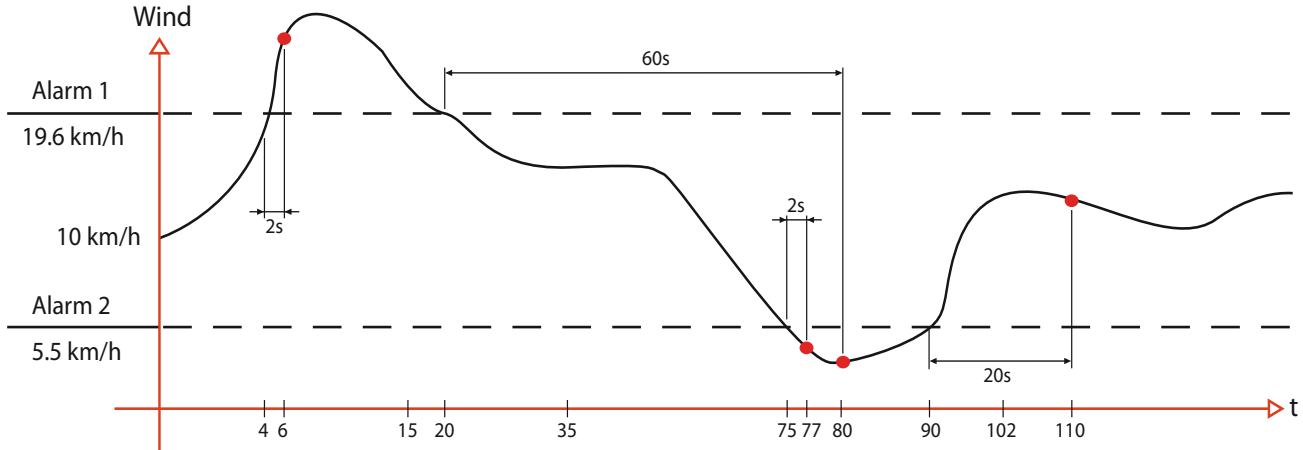
To display the alarm value, press the  button (even alarms), or the  button (odd alarms).

The non-activated alarms are indicated by -- . After 10 seconds the system reverts to displaying the current values

EXAMPLE

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 time has passed, displaying these alarm values requires use of the buttons ⊕ & ⊖. The system reverts to displaying the current values. To return to normal operation, the alarms must be acknowledged with the button ⊖.

- Configuration:**
- Alarm 1: 19.6 km/h, rising edge, 60s
  - Alarm 3: 40 %rH, rising edge, 30s
  - Alarm 5: 28.6 °C, rising edge, 50s
- Alarm 2: 5.5 km/h, falling edge, 20s
  - Alarm 4: 50 %rH, rising edge, 40s
  - Alarm 6: 24.3 °C, falling edge, 60s

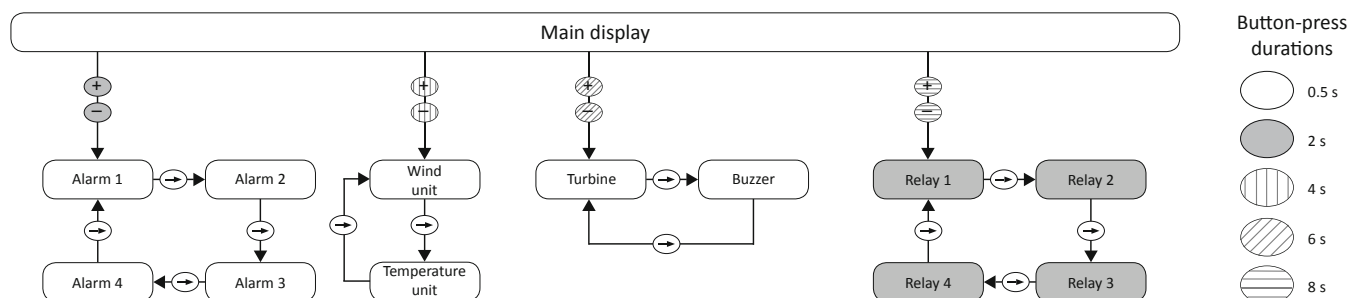


t > 110: display and acknowledgement of the alarms

## STANDARD SETUPS

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

Once the adjustment mode is entered, the buttons  $\oplus$  and  $\ominus$  enable values to be increased, decreased or switched. One short press on the button  $\ominus$  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 4). If the threshold is set to **OFF**, briefly pressing  $\ominus$  goes to the setting up of the next alarm.

- **Threshold level**

The limit setup value of the threshold depends on the unit selected, but corresponds to 150 km/h for wind,  $-30^{\circ}\text{C}$  /  $80^{\circ}\text{C}$  for temperature and 10 %rH / 90 %rH for humidity. 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 -  $\text{max}$ ) or lower (falling edge -  $\text{min}$ ) than the threshold for the alarm to be triggered.

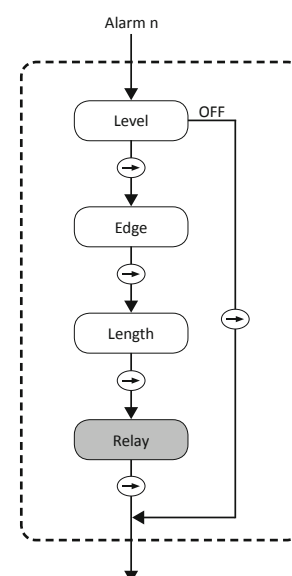
- **Duration of activation**

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 4)**

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



### Setting the units

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

The measurement unit for temperature can be selected from the following units:  $^{\circ}\text{C}$ ,  $^{\circ}\text{F}$ ,  $\text{☼}^{\circ}\text{C}$ ,  $\text{☼}^{\circ}\text{F}$ ,  $\text{♁}^{\circ}\text{C}$ ,  $\text{♁}^{\circ}\text{F}$ . The symbol  $\text{☼}$  defines the perceived temperature, and the symbol  $\text{♁}$  indicates the dew-point temperature.

### 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**

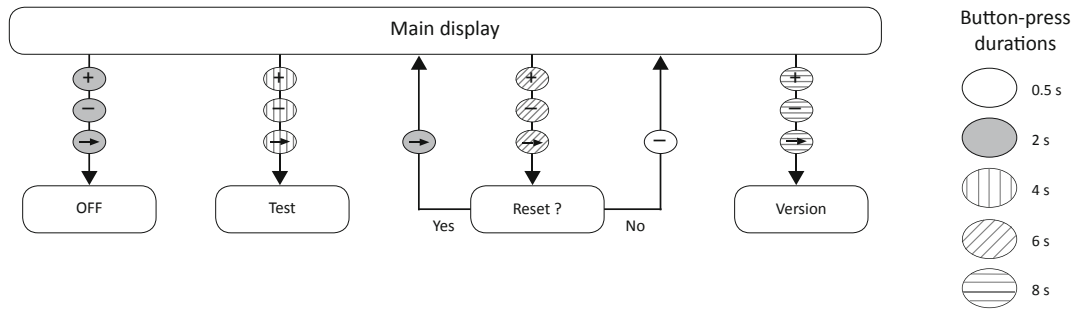
The acoustic signal can be turned on or not (saving energy) for 1 minute when an alarm occurs.

### Setting up the relays (only Kit 4)

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  $\oplus$ ,  $\rightarrow$  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  $\rightarrow$  button 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  $\rightarrow$ .

### Version

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

## TECHNICAL DATA

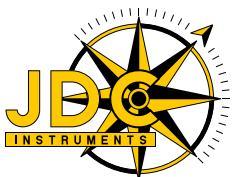
	Wind speed	Humidity	Temperature
Unit	km/h, mph, knots, m/s, fps	%rH	°C, °F, $\text{°C}$ , $\text{°F}$ , $\text{°C}$ , $\text{°F}$
Measuring range	5 - 150 km/h (WindSENS3D)	0 - 100 %rH	-40 - +90 °C
Resolution	1/10 of the unit	0.1 %rH	1/10 of the unit
Precision	$\pm 3\%$ in the horizontal plane (WindSENS3D)	$\pm 3\%$ (20 to 80 %rH)	$\pm 0.4$ to 25 °C
Measuring cycle	every second	10s	10s

## FURTHER INFORMATION

The SKYWATCH AWS 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 AWS 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® Air Warning System 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.



JDC ELECTRONIC SA  
Avenue des Sports 42  
CH-1400 Yverdon  
Switzerland

www.jdc.ch  
info@jdc.ch  
T: +41 24 445 21 21  
F: +41 24 445 21 23

