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SKYWATCH® AERO

Operating manual

SWISS  MADE



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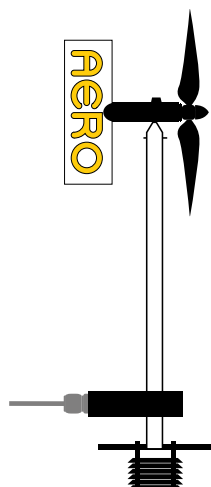
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Introduction

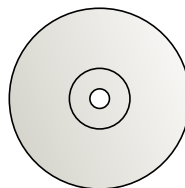
Items included



1 x transmitter
with remote box



1 x AERolog SKYWATCH CD



1x mini USB cable



Warranty

Your **SKYWATCH® AERO** is guaranteed by JDC ELECTRONIC SA for one year starting on the date of purchase in respect of all defects of manufacture. 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.

General description of operation

This meteorological station can measure the following parameters:

- Maximum, minimum and average windspeeds
- Maximum, minimum and average wind directions (as an option)
- Temperature and humidity (as an option)
- Pressure (as an option)

The station, powered by two LR6 batteries, can be easily installed at isolated sites and in extreme conditions.

The starting and stopping of the measurement process can be done via the SKYWATCH AEROlog software using the button to be found in the remote control box.

An LED on the control box indicates the system status. Its flashing indicates that the system is taking measurements.

Meteorological measurements

The SKYWATCH AERO station takes windspeed and direction (as an option) measurements every second. Temperature, humidity and pressure (as options) are measured once per cycle. The time for calculating the average is adjustable using the SKYWATCH AEROlog software.

Recording measurements

All measurements are saved in the station memory. They can be downloaded to a PC using the USB port and then automatically saved in a CSV file.

Clock and synchronization

The station has an internal clock that allows measurements to be time stamped.

Technical Specifications

General data:

Dimensions (L x H x D)	Housing: 64x110x38 mm Transmitter: 160x410x200 mm
Weight	Housing: 400g Transmitter: 550g
Protection class	Housing: IP 65 Transmitter: IP 67
Materials	Housing: aluminum Transmitter: stainless steel
Power Supply	2 batteries LR6
Battery autonomy	More than one year
Measuring channels (all options)	Average wind direction Average windspeed Maximum windspeed Air temperature Air relative humidity Atmospheric pressure
Recording	More than 600,000 time stamped measurements in non-volatile memory
Clock	Internal
Communication connector	Mini USB
Operating temperature	Measurement and recording: -30 ... +80 °C
Cable length	5m, other lengths on request

Meteorological transmitter:

GB

Wind (direction as an option)	
Sampling	1 measurement per second
Average wind direction Measuring range Precision Resolution	0 ... 360° ± 5° 1°
Average and maximum windspeed Measuring range Precision Resolution Units	3 ... 200 km/h ± 3% 0.1 km/h km/h, m/s, mph, fps, knots

Temperature and humidity (as an option)	
Air temperature Measuring range Precision Resolution Units	-40 ... +90 °C ± 0.6 °C (0 .. +50 °C) ± 1.5 °C (-40 .. +90 °C) 0.1 °C °C, °F, K
Air relative humidity Measuring range Precision Resolution	0 ... 100 %RH ± 1.8 %RH (10 .. 90 %RH) 0.1 %RH

Barometric pressure (option)	
Measuring range Absolute precision Resolution Units	10 ... 1100 mbar ± 1.5 mbar (750 ... 1100 mbar) 0.1 mbar hPa, Pa, bar, atm, psi, mmHg

SKYWATCH AEROlog software

SKYWATCH AEROlog software was developed as a user interface for configuration, viewing measurements in real time and downloading of measurements recorded by the station.

Installation of the software

If the computer is connected to the internet, double-clicking on the "setup.exe" file under "AEROlog" on the CD initiates software installation. In the first instance the installer proceeds to analyse whether the PC has the necessary prerequisites for software use; otherwise, the ".net" framework will be updated.

If the computer is not connected to the internet, the ".net" framework must first be installed by double-clicking on the "dotNet...exe" file in the "AEROlog" directory on the CD.

USB driver

When the AERO station is connected to the PC by USB cable, a new virtual serial port is installed on the computer. If needed, the driver is available on the CD in the "Driver" directory. Before installing the driver, make sure you disconnect the station USB cable.

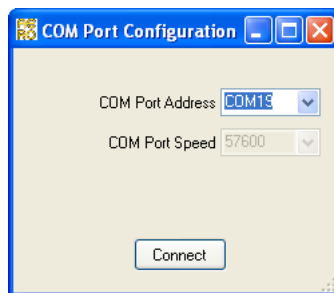
Connecting to the station

Once the SKYWATCH AEROlog software is installed, the first step is to connect up to the AERO station: click on "Connect" menu, then choose between "Auto" and "Manual".

The "Auto" mode scans all USB ports and connects up to the first station it finds. The "Manual" mode allows the user to choose which port is to be connected to. This mode is used particularly when several stations are connected to the same PC. The desired port has to be selected from a pull-down list, then click on the "Connect" button. The port selected will be saved to memory.

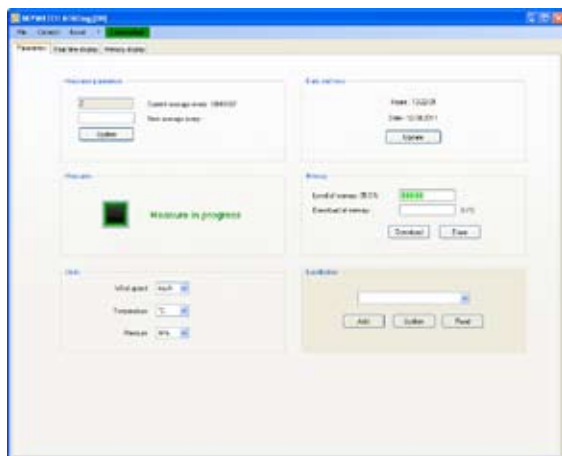
When the station is connected, the "Connected" status is displayed on a green background in the menu bar.

Click on "Disconnect" in the "Connect" menu to disconnect.



Measurement parameters

The station takes a wind measurement every second. The duration in seconds on which the average is to be calculated has to be defined. This interval can be changed by entering the desired value to the field set up for this. When the new average is indicated to you, press on "Update" to transmit the information to the station. The other parameters (temperature, humidity, pressure) are measured once per interval.



Measurements

Click on ■ button to start the measurement process. Press on ■ button to stop it. If the station is deleting memory, it is not possible to start the measurement process.

When the measurement process is activated, the LED flashes for 3 seconds, then flashes once every three seconds. When the measurement process is complete, the LED flashes again for 3 seconds before going out.

Date and Time

The software displays the station time. To update this time in relation to the PC, press on "Update" button.

Please note that the changing non DST / DST is not automatically done by the station.

Units

The user can choose in which unit the measured values should be displayed. The units selected are used for real-time display and for saving the measurements in the CSV file. These units are saved in memory.

Memory

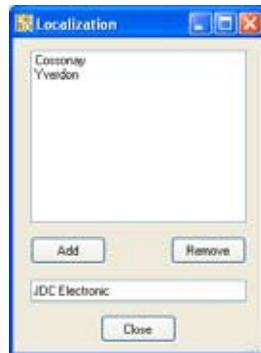
This is the station memory. The memory level indicates the percentage of the memory used by the measurements. The measurements can be changed and saved in a CSV file. Afterwards the memory can be deleted.

Localization

The user can define a station position so as to differentiate between the stations. This information will be recorded during downloading to the CSV file. To assign a location to a station, select the latter from the list set up by the user, then press "Update".

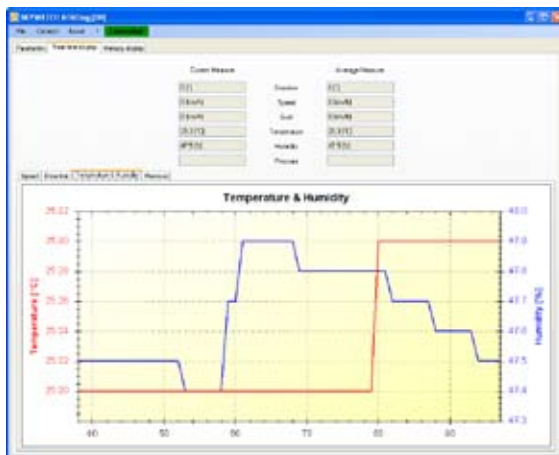
To add a location to the list, press on "Add". The "Localization" window opens. Enter the new location in the field prepared for this then press on "Add".

To delete a location from the list, select the location and press on "Remove".



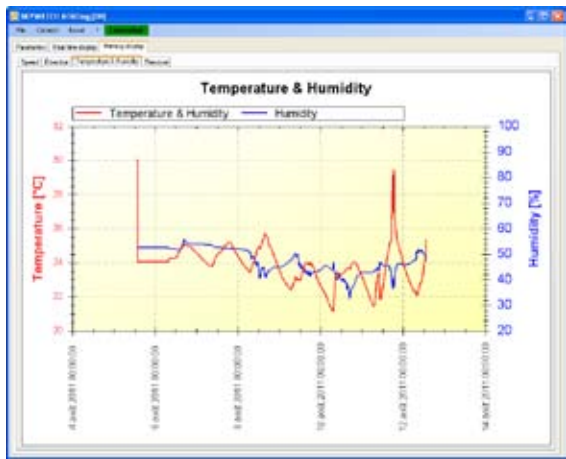
Real time viewing

When the measurement process is active, the user can view the readings in real time in the "Real time display" tab. Readings along with a graphic for each of the parameters are then available for viewing.



Viewing of recorded measurements

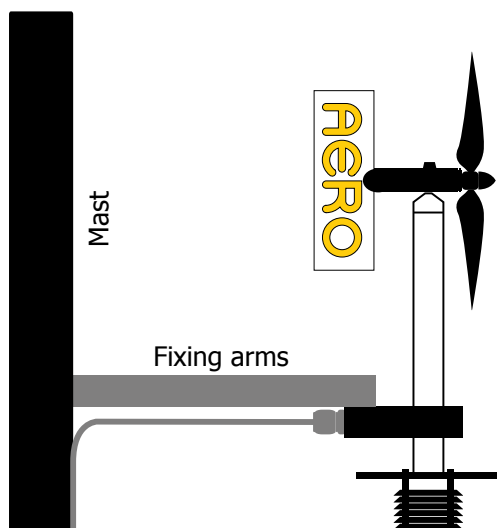
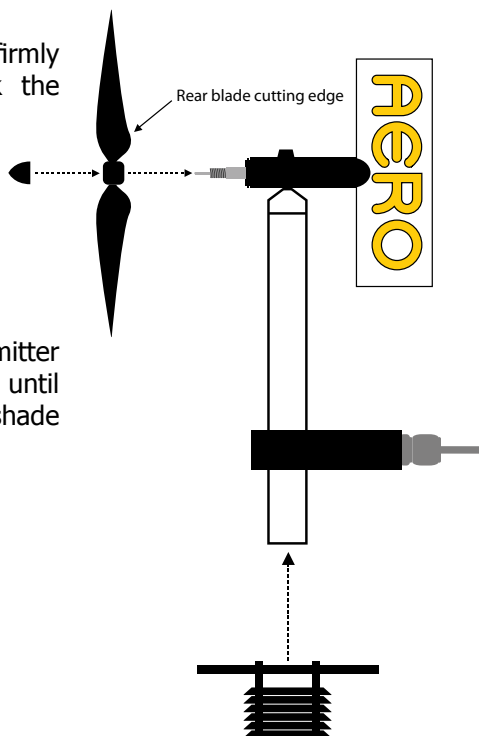
Following station memory downloading, the user can view the graphic of each of the parameters saved in the memory.



Installation guide

Step 1 - Fitting transmitter

- 1 Place blades horizontally, then firmly screw in propeller nose to lock the blades.
- 2 Place propeller with its axis vertical and lock it in the throat using 2.3mm circlips and flat pliers. Retighten metal plug.
- 3 Fit anti-radiation shade to the transmitter lower part. Gently push in shade until tube touches anti-radiation shade protection grid



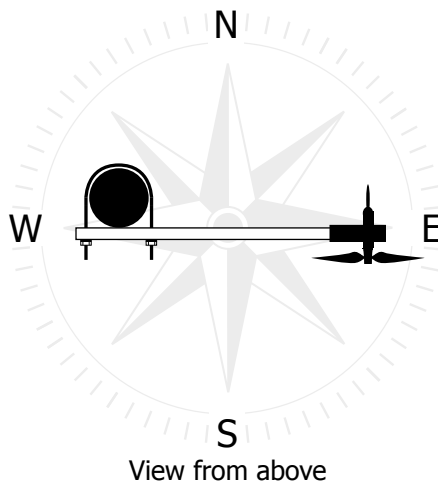
Step 2 - Installing transmitter

The transmitter should be placed as far as possible from any obstacles that could disturb air flow, such as the roof of a house, for example.

Ideally the transmitter should be fixed on a horizontal arm using two holes M4 or four holes 5.5mm dia, and the arm then fixed to a mast.

Step 3 - Station orientation

The arm to which the transmitter is fixed should be oriented so that the cable exit points to the west.



Step 4 - Fixing remote box



The remote box is totally watertight. Therefore it can be located outside.

It is advisable to fix the remote box, for example to the mast.

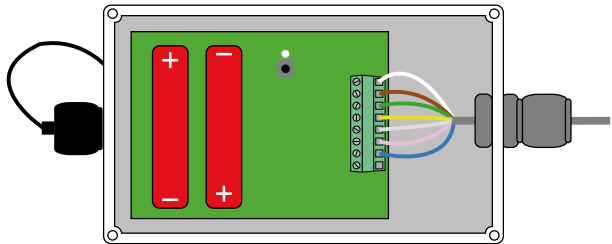
Step 5 - Wiring up remote box (as an option)

This operation is reserved for personnel who have a basic knowledge of electricity. The cable of the remote box can be removed so as to shorten it or to pass it through a hole.

Batteries must be removed before changing the cable.

To carry out such a modification, take out the leads by unscrewing them from the terminal box and then, following modification of the length or passage of the cable through a hole, reconnect leads in the following order:

- Terminal n°1 → white + screening
- Terminal n°2 → brown
- Terminal n°3 → green
- Terminal n°4 → yellow
- Terminal n°5 → grey
- Terminal n°6 → pink
- Terminal n°7 → blue



This modification causes the lost of the product warranty.

Step 6 - Station states

The remote box has a red LED that gives information on the station condition:

LED condition	Measurements	Battery level
No light	Stopped	Good
Flashing once every 3 seconds	Running	Good
Flashing twice every 10 seconds	Running	Medium
Flashing 3 times every 30 seconds	Stopped	Low

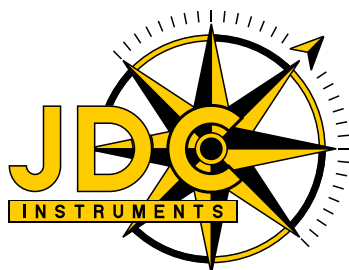
Contact

If there is a problem and for all technical questions, please contact us directly:

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