SKYWATCH®
N.E.W.S.

Operating manual

SWISS MADE

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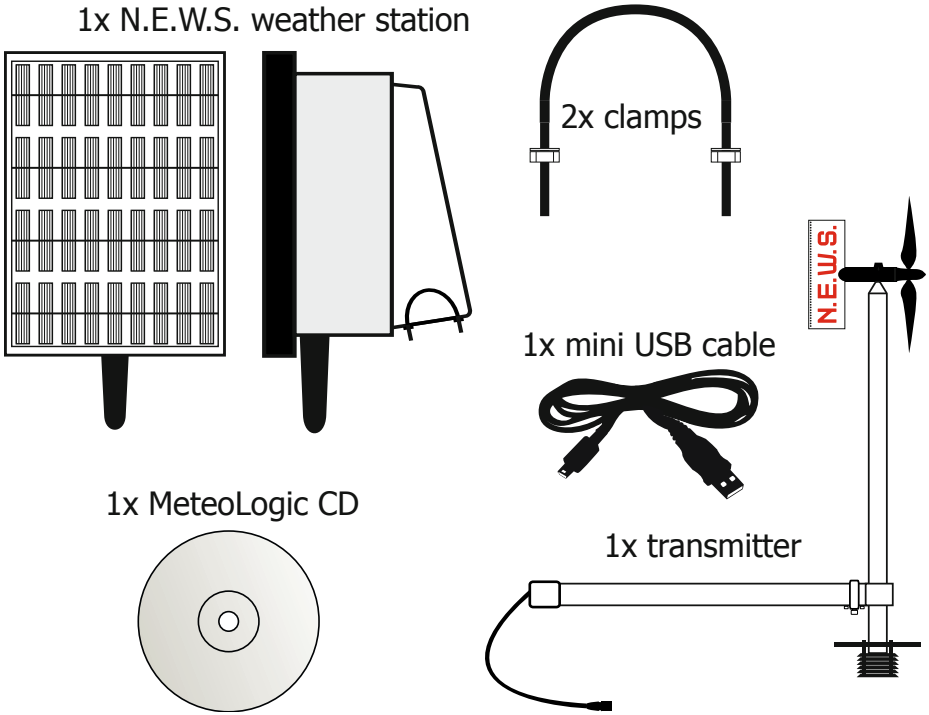
Items included



Warranty

Your **SKYWATCH® N.E.W.S.** is guaranteed by JDC ELECTRONIC SA for one year starting on the date of purchase in respect of all material 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

Skywatch® N.E.W.S. is an autonomous meteorological station designed for monitoring the atmospheric conditions at a site.

It is fitted with a meteorological transmitter that measures wind, temperature, relative humidity, and (as an option) barometric pressure.

Powered from a small solar panel and a battery, the station can easily be installed on sites that are isolated and have extreme conditions.

Finally, with its GPRS modem, it automatically and periodically transmits its measurements to the Internet site http://meteo.jdc.ch.

Meteorological measurements and transmitter

The Skywatch® N.E.W.S. station acquires and records a series of measurements from the transmitter every 10 minutes (recommendation of the WMO).
The meteorological transmitter is fitted with an anemometer to measure the mean direction, the mean speed and the maximum speed of the wind, with a humidity and temperature sensor and optionally with a pressure sensor.

Publication of the measurements

The site meteo.jdc.ch publishes the measurements in graphical form for the 3 preceding days. This data is sent by the station via GPRS at regular intervals and in a defined daily time limit.

Since each transmission consumes a large amount of energy, the sending of measurements for publication can be made different between summer and winter. From the start of October to the end of March, when the solar panel receives less solar energy, perhaps none, the daily time limit and the frequency of transmissions can be reduced. These parameters are defined when the station is set up by using the MeteoLogic software.

Clock and time synchronization

The station has an internal clock which enables time stamping of the measurements and synchronization of the measurements and transmissions. At the end of each sending of data, the clock is resynchronized with the date and time of the GSM network. The local time zone is also included in this synchronization.

Technical Specifications

General data:

Dimensions (L x H x D)	Housing: Transmitter:	210 x 330 x 220 mm 540 x 500 x 150 mm
Weight	Housing: Transmitter:	6.5 kg 1 kg
Protection class	Housing: Transmitter:	IP 67 IP 67
Materials	Housing: Transmitter:	stainless steel stainless steel and PVC shock
Power Supply	Solar panel 12 V, 5 W Battery 6 V, 12 Ah	
Battery operation (without sun)	Approx. 3 months (transmitting 10 times per day)	
Measuring channels	Wind direction, mean wind speed, maximum wind speed, air temperature, relative air humidity. Pressure as an option.	
Recording	90,000 time-stamped measurements in non-volatile memory	
Clock	Internal with time zone	
Configuration connector	mini USB	
Operating temperature	Measurement and recording: Data transmission:	-30 … +80 °C -25 … +70 °C

Meteorological transmitter:

Wind	
Sampling	1 measurement per second
Average wind direction Measuring range Precision Resolution	 0 to 360° ± 5° 1°
Mean and maximum wind speed Measuring range Precision Resolution	 3 to 200 km/h ± 3% 0.1 km/h

Temperature and humidity	
Air temperature Measuring range Precision Resolution	 -40 to +90 °C ± 0.6 °C (0 to +50 °C) ± 1.5 °C (-40 to +90 °C) 0.1 °C
Air relative humidity Measuring range Precision Resolution	 0 to 100 %RH ± 1.8 %RH (10 to 90 %RH) 0.1 %RH

Barometric pressure (option)	
Measuring range Absolute precision Resolution	10 to 1100 mbar ± 1.5 mbar (750 to 1100 mbar) 0.1 mbar

SIM card and GSM subscription

The Skywatch® N.E.W.S. station has a GPRS modem for data transmission via the GSM network. To make use of the latter, an active SIM card must be installed, with or without a subscription. The type of subscription linked to this SIM card needs to permit data transmission via GPRS. Options that include the volume of data could be appropriate. For information, one data transmission can be between 5 kB and 30 kB, depending on the interval between sendings.

Please note: the SIM card should be configured without a security PIN code before it is inserted into the device. This can be carried out on an ordinary mobile telephone.

MeteoLogic software

The MeteoLogic software was developed as a user interface for setting up the station.

Installation of the software

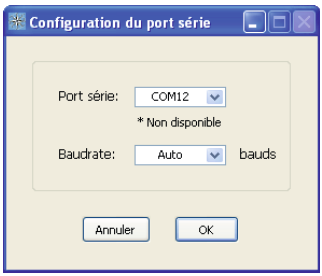
To start the installation of the software, double-click on the file *setup.exe* on the CD under software. Then all that is required is to follow the instructions.

USB driver

When the station is connected to the PC by using the USB cable, a new virtual serial port is installed on the computer. If necessary, the driver is available on the CD under *// misc/driver*.

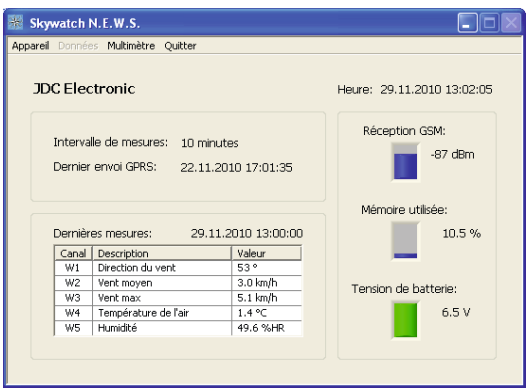
Connecting to the station

Once installed, the MeteoLogic software can be run and the first step is to select the serial port to be used. By clicking on *Serial port* in the *Configuration* menu, the list of available serial ports is generated and displayed for selection. Click *OK* after making the selection.



Remark: the USB cable must be connected to the station before carrying out this configuration.

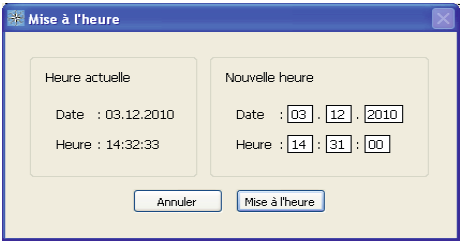
Click on the menu *Connect* to open communications with the Skywatch® N.E.W.S. weather station. The following window appears and displays the configuration and parameters of the station.



Setting the time

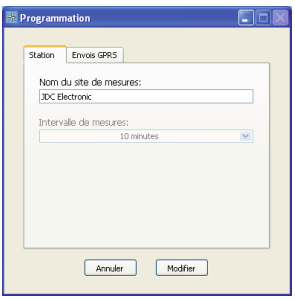
Use the software to set the time in the station by clicking on *Time set* in the *Device* menu.

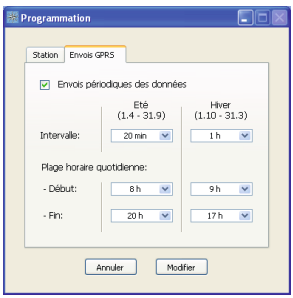
The times of measurement and transmission are automatically synchronised using the new time.



Programming the station

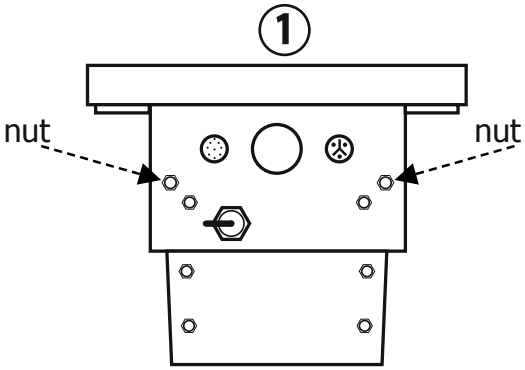
By clicking on *Programming* in the *Device* menu, the user can program the name of the site in the *Station* tab. In the tab *GPRS transmissions* the transmission intervals and daily time limit can be defined depending on the season.





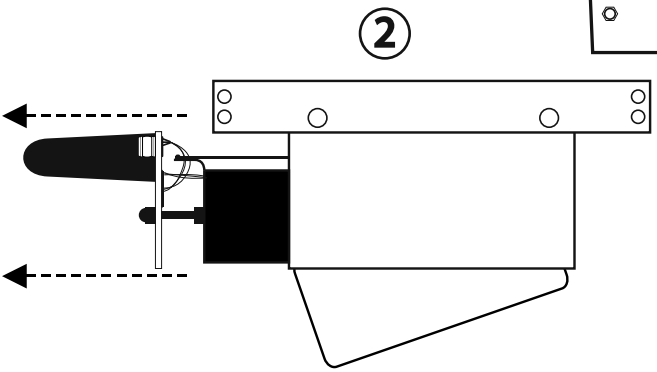
Installation guide

Step 1 - Inserting the SIM card

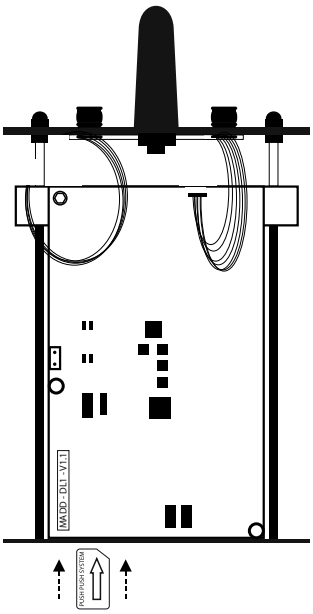


① Unscrew the two nuts shown in the diagram.

② Withdraw the station from the housing, being careful with the wires.



③ Orientate the station as shown in the illustration opposite, and insert the SIM card in the location provided as shown.

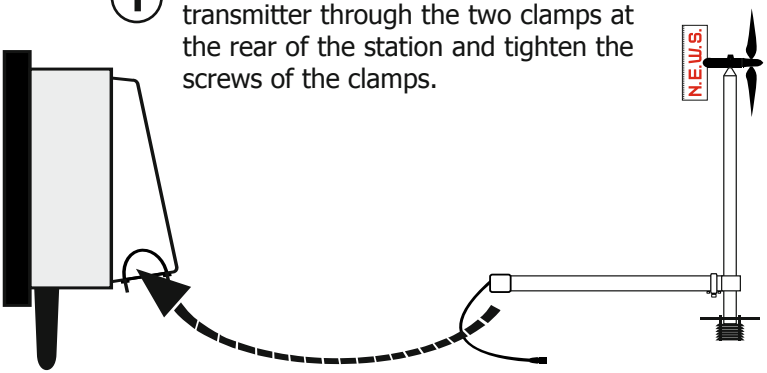


Remember to remove the PIN code protection of the SIM card by using a separate mobile telephone.

④ Replace the station into the housing, being careful with the wires.

Step 2 - Installation of the meteorological transmitter

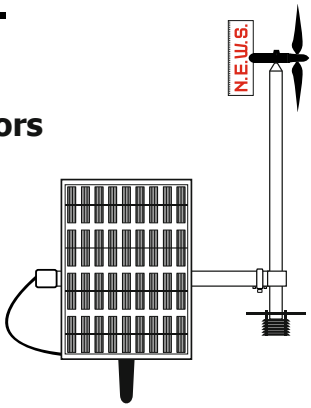
① Pass the horizontal bar of the transmitter through the two clamps at the rear of the station and tighten the screws of the clamps.

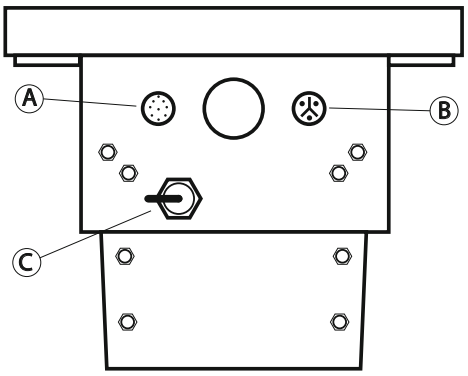


Step 3 - Connecting up the connectors

① Connect the transmitter to socket Ⓐ as shown below.

② Connect the solar panel to socket Ⓑ as shown below.





Ⓐ Connector of the MeteoLogic transmitter

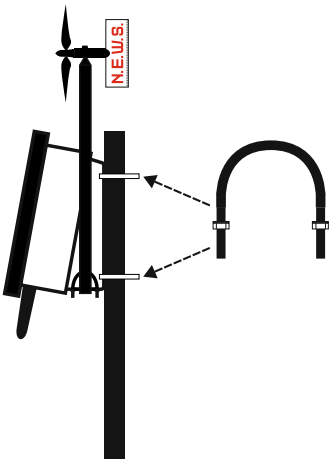
Ⓑ Solar panel connector

Ⓒ USB connector

Step 4 - Software configuration

Refer to the previous chapter "MeteoLogic Software".

Step 5 - Secure and orientate the station



① Place the station against its support pole, position the clamps in the holes provided for this purpose and screw them into place.

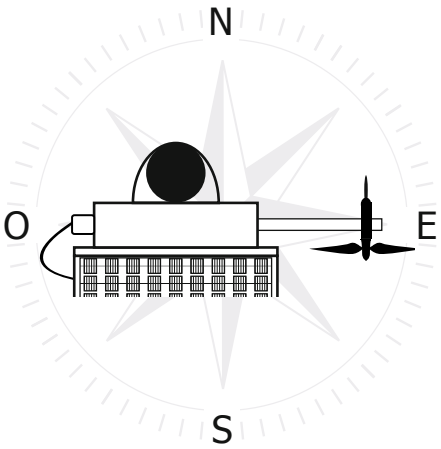
The clamps are available in 3 different diameters:

Ø 45 - 60 mm
Ø 60 - 74 mm
Ø 74 - 90 mm

The choice of diameter must be specified with the order.

② Accurate orientation of the station is crucial for the validity of the measurements of wind direction.

The arm of the sensor **must** point accurately to the east. The solar panel will then face the south.



View from above

Step 6 - Connection to earth

To improve protection of the station when there is lightning or overvoltage from electromagnetic effects, it is advisable to provide a good earth connection for the housing. Suitable materials can be obtained as an option.

Technical assistance

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Contact

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

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