SENCOR

WEATHER STATION WITH CABLE FREE IN-OUT THERMOMETER AND RADIO CONTROLLED CLOCK

SWS 180 USB

USER'S MANUAL

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1. Introduction

Dear Customer,

Thank you for purchasing this product.

This product meets the legal national and European specifications. To maintain this condition and ensure risk-free operation, you must comply with the following operating instructions.

Please read the operating instructions completely and observe the safety and operating notices before using the product.

In case of any technical inquiries, contact or consult:

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2. Contents

- Weather station
- Power pack unit for the weather station
- USB cable
- Temperature/air humidity sensor with display
- Rain sensor
- Wind sensor
- Operating instructions

3. Intended use

The weather station serves to display different measuring values, e.g. the indoor/outdoor temperature, the indoor/outdoor air humidity, the rain quantity, the wind speed and the wind direction.

The sensors contained in the delivery send the measuring values to the weather station (wireless via radio).

Furthermore, the weather station calculates a weather forecast using an internal air pressure sensor and recording the changes in air pressure, which is then indicated on the display with symbols.

The weather station also features a radio clock that receives the exact time and the date via the DCF time signal. Switching from DST (daylight savings time) to normal time also takes place automatically.

A list of all features and characteristics of the product is presented in chapter 5.

The weather forecasts of the weather station are only intended for orientation. They do not represent an absolutely exact forecast. The manufacturer does not accept any responsibility for incorrect displays, measuring values or weather forecasts or the consequences which might arise from these.

The product is intended for private use only and not suited for medical purposes or informing the public.

The contents of this product are not a toy. The product contains fragile and swallowable glass parts, small parts and also batteries. It should be kept out of the reach of children!

Keep all components out of the reach of children.

The product is battery-operated. The weather station can also be operated via the provided power pack unit.

Any use other than the one described above may damage the product and involves other possible risks.

Read these operating instructions completely and carefully. They contain a lot of important information about the set-up, operation and use of the device. Observe all safety instructions!

4. Symbol explanation

The lightening bolt icon in a triangle is used to alert you to potential personal injury hazards such as electric shock.

An exclamation mark in a triangle indicates important instructions in this operating manual which must be observed.

The "hand" icon indicates special tips and notes on the operation of the device.

5. Features and functions

a) Weather station

- Radio-controlled DCF time/date display, manual setting possible
- 12/24 hr time format (selectable)
- 6 languages for the display of the weekday (selectable)
- Display of the interior temperature/air humidity
- Display of the outdoor temperature/air humidity (reception of up to 5 outdoor sensors possible)
- Temperature display in Celsius (°C) or Fahrenheit (°F, selectable)
- MIN/MAX memory for indoor/outdoor temperature and indoor/outdoor humidity
- Weather forecast for the next 12-24 hours
- Trend display for air pressure, indoor/outdoor temperature, indoor/outdoor humidity
- Progression display (for air pressure, outdoor temperature, outdoor humidity)
- Moon phase display (also display of the moon phase in the past/next 39 days)
- Alarm function for wind speed, rain quantity, outdoor temperature and thunderstorms
- Alarm function with pre-alarm (in case of low outdoor temperatures)
- Display of the sunrise/sunset times in numerous cities
- "Empty battery" indicator for the weather station and all sensors
- Can be placed on a table or similar surfaces or mounted on walls
- Operation with four batteries type AA/mignon or external power pack unit
- USB socket for connection to a computer incl. software for data display
- Operation in dry indoor locations (weather station/power pack unit must not get damp or wet!)
- Background illumination of the LC display (permanent illumination is possible when operating the weather station with the power pack unit), plus brightness sensor for automatic activation/deactivation

b) Temperature/air humidity sensor

- Integrated LC display for the temperature/air humidity
- Wireless radio transmission (443 MHz)
- Operation with 2 batteries type AA/mignon
- Can be placed on a table or similar surfaces or mounted on walls
- Selection of 5 different channels
- Operation in protected outdoor locations (e.g. underneath eaves)

c) Rain sensor

- Rain quantity measuring
- Wireless radio transmission (443 MHz)
- Operation with 2 batteries type AA/mignon
- Installation on a level surface
- Protective grid (against falling leaves)
- Miniature spirit level for easy alignment during installation
- Outdoor operation

d) Wind sensor

- Measuring of the wind speed and the wind direction
- Wireless radio transmission (443 MHz)
- Operation with 2 batteries type AA/mignon
- Wall mounting possible (alternative: attachment to a pole)
- Outdoor operation

6. Safety instructions

In case of damage due to non-observance of these operating instructions, the warranty will be void! We do not assume any liability for consequential damage!

We do not assume any liability for material and personal damage caused by improper use or non-compliance with the safety instructions. Any warranty claim will be invalid in such cases!

Dear customer, the following safety and risk warnings are intended to protect your well-being and ensure proper functioning of the product. Please read carefully through the following points:

- Unauthorized conversion and/or modification of the product are inadmissible because of safety and approval reasons (CE). Do not open or disassemble the product (apart from the necessary steps for inserting/changing the batteries or cleaning)!

  Maintenance, setting and repair work may only be carried out by a specialist/specialised workshop.
- Do not use this product in hospitals or medical facilities. Although the outdoor sensor emits only relatively weak radio signals, these may lead to malfunction of life-support systems. The same may possibly apply to other areas.
- The weather station and the power pack unit are only suitable for dry indoor areas. Do not expose it to direct sunlight, severe heat, cold or dampness; otherwise you may face the risk of a fatal electric shock!
- The outdoor sensors are suitable for operation in protected outdoor areas. However, they may not be operated under water.
- The product is not a toy and must be kept out of the reach of children. It contains small parts, glass (display) and batteries. Place the product out of the reach of children.
- Do not leave the packaging material lying around carelessly, since such materials may become dangerous toys in the hands of children.
- Only use the device in a moderate climate, never in a tropical climate.
- Condensation water may form when taking the product from a cold to a warm room (e.g. during transport). This may damage the product and also poses the risk of a fatal electric shock when the power pack unit is connected!

  Therefore, wait until the product has reached room temperature before using it. This may take several hours.
- In schools, training centres, hobby and self-help workshops, use of the product must be supervised by trained personnel in a responsible manner.
- Handle the product carefully and do not drop it. Knocks, blows or even a fall from a low height can damage it.

7. Notes on batteries and rechargeable batteries

In principle, it is possible to operate the weather station and the outdoor sensor with rechargeable batteries.

However, the lower voltage of rechargeable batteries (rechargeable battery = 1.2V, battery = 1.5V) and their lesser capacity reduces the operating time and the radio range.

Therefore, we recommend that you use high-quality alkaline batteries to ensure long and safe operation.

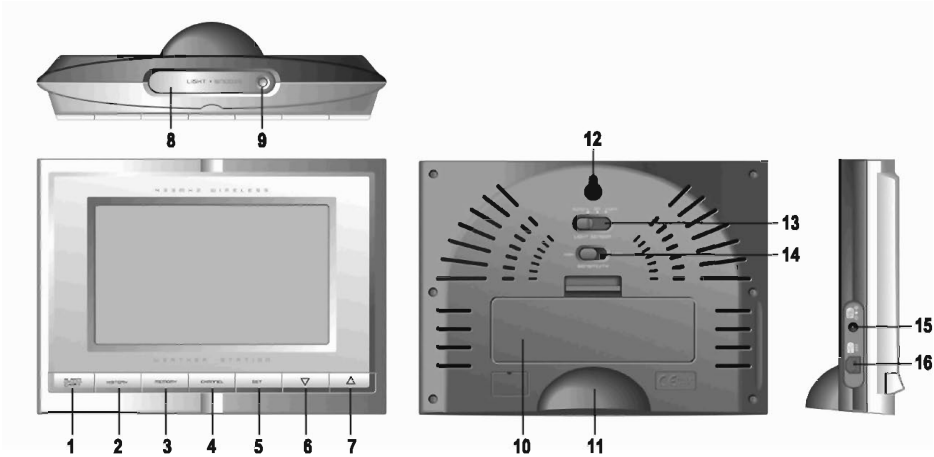
The weather station requires 4 batteries type AA/mignon.

Two batteries each of type AA/mignon are required for operation of the temperature/air humidity sensor, rain sensor and wind sensor.

- Batteries must be kept out of the reach of children.
- Please observe the correct polarity (positive/+ and negative/-) when inserting the batteries.
- Do not leave batteries/rechargeable batteries lying about openly. Children or pets may swallow the batteries. If swallowed, consult a doctor immediately.
- Skin contact with leaking or damaged batteries/rechargeable batteries may cause acid burns, therefore, use suitable protective gloves.
- Make sure that (rechargeable) batteries are not short-circuited or thrown into the fire. There is a risk of explosion!
- Do not recharge normal batteries. There is a risk of explosion! Only charge rechargeable batteries intended for this purpose; use a suitable battery charger.
- If you do not intend to use the device for a longer period of time (e.g. during storage), remove the inserted batteries/ rechargeable batteries. Old batteries/rechargeable batteries may leak and cause damage to the product; loss of guarantee/warranty!
- Always exchange the entire set of batteries/rechargeable batteries, only use batteries/rechargeable batteries of the same type made by the same manufacturer with the same charge status (do not mix charged with semi-charged or empty batteries/rechargeable batteries).
- Never mix normal batteries with rechargeable ones. Use either batteries or accumulators.
- For the environmentally friendly disposal of batteries and rechargeable batteries, please read the chapter "Disposal".

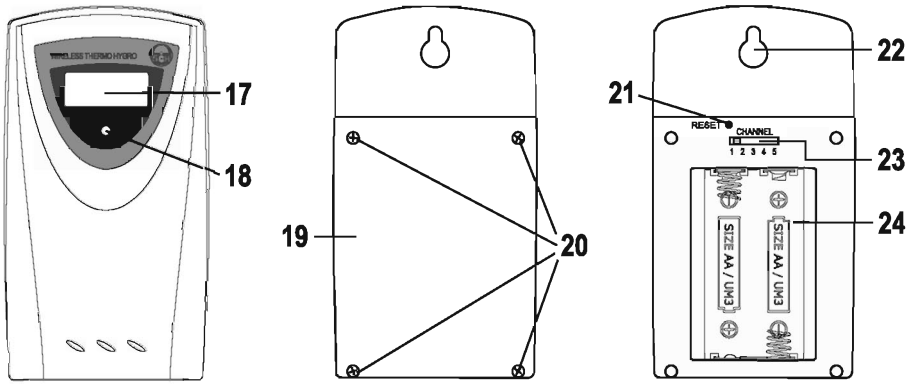
8. Operating elements

a) Weather station



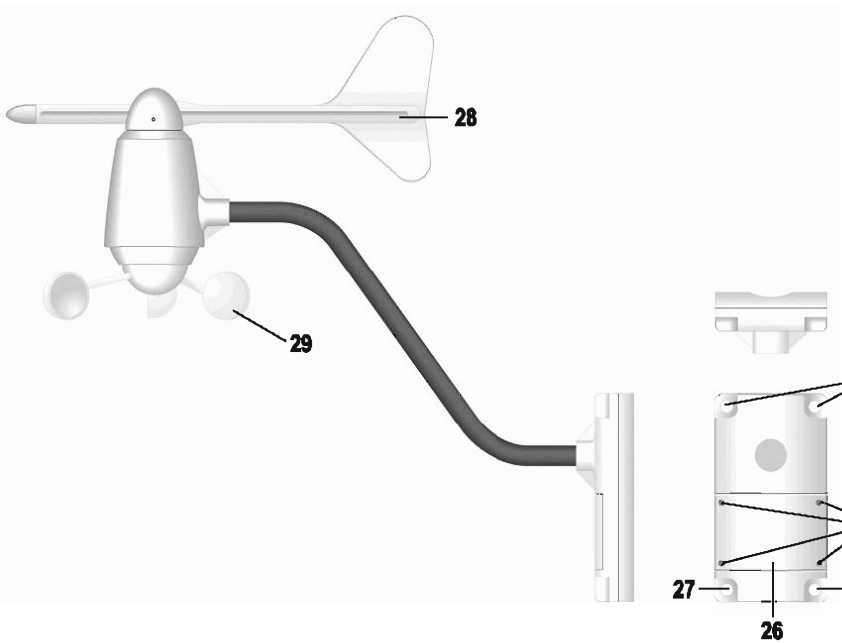
1 Button "ALARM/CHART"
2 Button "HISTORY"
3 Button "MEMORY"
4 Button "CHANNEL"
5 Button "SET"
6 Button "▽"
7 Button "△"
8 Button "LIGHT • SNOOZE", for activation of the background illumination and/or snooze function
9 Brightness sensor, for automatic activation of the background illumination at night
10 Battery compartment for 4 batteries type AA/mignon
11 Removable base (slide downward for wall mounting)
12 Opening for wall mounting
13 Slide switch "LIGHT SENSOR" (to select operating mode for background illumination)
14 Slide switch "SENSITIVITY" (to set the sensitivity for the brightness sensor)
15 Socket for external power pack unit (permanent operation of the background illumination requires connection of the supplied external power pack unit)
16 USB port (for connection of the weather station to a computer)

b) Temperature/air humidity sensor

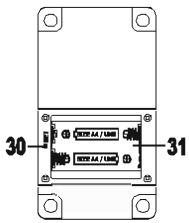


17 Display of the temperature and air humidity
18 LED (flashes briefly upon data transmission)
19 Battery compartment cover
20 Four screws for the battery compartment cover
21 Reset button
22 Opening for wall mounting
23 Switch for channel selection (channel 1 to 5)
24 Battery compartment for 2 batteries type AA/mignon

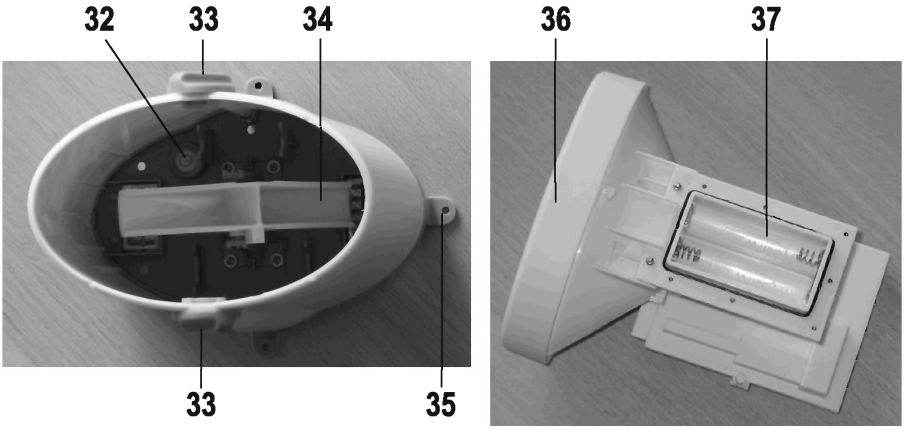
c) Wind sensor



25 Four screws for the battery compartment cover
26 Battery compartment cover
27 Four holes for wall mounting
28 Weathercock for determination of the wind direction
29 Cup anemometer for measuring the wind speed
30 Button "SET"
31 Battery compartment for 2 batteries type AA/mignon



d) Rain sensor



32 Integrated spirit level
33 Rotary knobs for locking the receptacle
34 Rocker for counting procedure
35 Altogether four feet with attachment hole
36 Receptacle
37 Battery compartment for 2 batteries type AA/mignon

9. Initial operation

First commission the outdoor sensor for the temperature/air humidity and then the rain and wind sensor. Then insert the batteries into the weather station!

This is the only way to ensure the correct function of the devices.

When performing the initial installation, you need the altitude coordinates of your region. This is used later on to calculate the correction value for the air pressure. To obtain the altitude of your region (an approximate value is sufficient), consult a map or refer to the website of your city/region.

Prior to installing the rain and wind sensors in a permanent location, we recommend performing a function test with all devices.

The radio range of 30m (rain sensor and wind sensor) as well as of 100m (outdoor sensor for temperature/air humidity) is the so-called "free field range", meaning the maximum range in case of direct sight connection between the transmitter (sensors) and the receiver (weather station).

However, this ideal configuration may not work in practice, as furniture, walls, windows or plants may be located between the sensors and the weather station.

Another source of interference which significantly reduces the range is the proximity to metal parts, electric/electronic devices or cables. Reinforced concrete ceilings, vacuum metallised insulated glass windows or other devices operating on the same transmission frequency.

Do not place the devices directly next to each other when performing the function test. Keep a distance of at least 50 cm; otherwise the transmitters may interfere with each other.

a) Temperature/air humidity sensor

- Open the battery compartment on the back by unscrewing the four screws (20) of the battery compartment cover (19) beforehand. If the rubber seal gets stuck on the battery compartment cover, replace it in the provided slot.
- With the slide switch (23), you can set the transmission channel if your want to operate more than one temperature/ air humidity sensor. If only one temperature/air humidity sensor is in operation, please select channel 1 (required for the recording function)
- Insert two batteries of type AA/mignon with correct polarity into the battery compartment (24, observe positive/+ and negative/-). All display segments appear briefly on the display, afterwards the first measuring value for the temperature and the air humidity.

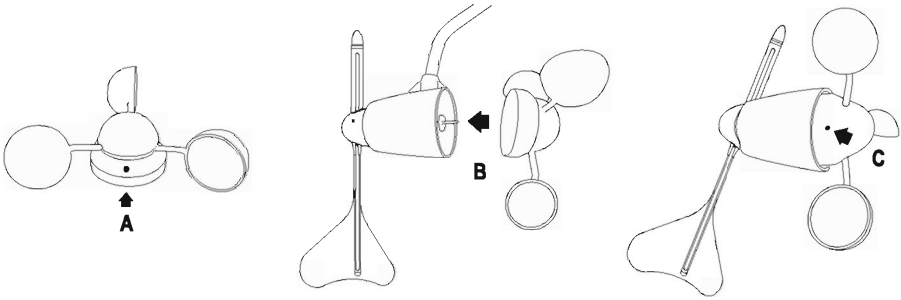
If there is no display, check whether the batteries are charged and were inserted correctly. If required, briefly press the countersunk reset button with an open paper clip (do not exert any force when pressing!) or remove both batteries and insert them again.

- Replace the cover of the battery compartment (19) again and screw it down firmly.
- When selecting the installation site for the temperature/air humidity sensor, make sure that it is protected from precipitation (e.g. beneath an eave). Otherwise, the sensor would no longer measure the air temperature.

  The sensor may also not be exposed to direct sunlight, as this would falsify the measuring values.

  The opening for wall mounting (22) serves to hang the temperature/air humidity sensor on a screw or similar.

b) Wind sensor



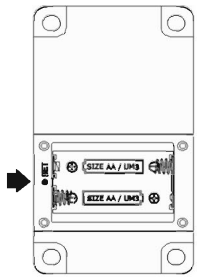
- Loosen the Allen screw in the cup anemometer (see "A"); turn the screw a few turns counter-clockwise.
- Attach the cup anemometer on the metal axis (see "B").

Make sure that the 3 hemispherical elements are not damaged or even broken off - loss of warranty/ guarantee!

- Secure the cup anemometer on the axis by tightening the small Allen screw on the cup anemometer (see "C").
- Remove the battery compartment cover (26) by removing its 4 screws (25).
- Insert two batteries of type AA/mignon with correct polarity into the battery compartment (31, observe positive/+ and negative/-).

The tip of the weathercock must be aligned exactly north so that the main station can display the correct wind direction. Then press the "SET" button (30) located on the side inside the wind sensor's battery compartment (see arrow in the image on the right).

This alignment must be repeated at each battery change on the wind sensor.



- Replace the cover of the battery compartment (26) again and screw it down firmly.
- The installation site for the wind sensor should not be located too close to walls or buildings to prevent wrong measuring values. Wind close to buildings is generally faster than on a free space, and the wind direction is also not correct, of course.

  We recommend keeping a minimum distance of 3 to 5 m to buildings or trees.

  The wind sensor can be screwed onto e.g. a vertical wall. Four attachment holes (27) are provided for this purpose. It is also possible to mount it on a pole using a suitable attachment (rounded back of the housing).

c) Rain sensor

- Remove the top receptacle (36) by unlocking the two rotary knobs on the side (33) first. Turn those approx. 45° counter-clockwise to the left. Do not exert any force!

Afterwards the receptacle (36) can be lifted off towards the top. Remember the right orientation.

- The battery compartment is located on the side with the smaller vertical housing part (37, hemispheric battery shape on the back). The battery compartment cover is secured with 7 small screws. Please unscrew these.
- Insert two batteries of type AA/mignon with correct polarity into the battery compartment (37, observe positive/+ and negative/-).
- Replace the cover of the battery compartment again and screw it down firmly.
- If you look into the bottom part, you will see a small integrated spirit level (32) there. This serves for correct horizontal installation.
- Insert the receptacle into the bottom part. Observe the correct orientation. Only one is possible!
- Lock the two rotary knobs on the side (33) by turning them once again clockwise to the right by 45°. Do not exert any force!
- The rain sensor should be directly exposed to precipitation. Please remember this when selecting the installation site (e.g. on a carport or similar).

  Protect it from leaves and similar, as these may clog the drainage opening in the receptacle. Check the drainage opening from time to time for this reason.

  You can also attach the rain sensor using the four feet (35).

d) Weather station

Commission all sensors first if you have not already done so.

- Open the battery compartment cover (10) on the back of the weather station and insert two AA batteries (mignon) paying attention to the correct polarity (observe plus/+ and minus/-).

The enclosed power pack unit is required to use the automatic background illumination at darkness.

Connect the round low-voltage plug to the corresponding socket (15) of the weather station and plug the power pack unit into a mains outlet (230V~/50Hz).

When using the power pack unit, the batteries serve as backup in case of a power failure.

- After inserting the batteries, the display briefly shows all display segments. Afterwards, the display for the air pressure units blinks.
- Replace the cover of the battery compartment.
- Set the units for measuring the air pressure (mmHg, hPa/mBar or InHg) with the buttons "▽" (6) or "△" (7) and briefly press the button "SET" (5) to save. In general, you should select "hPa/mBar".
- Afterwards, the display for the altitude units blinks ("meters" or "feet"). Select the desired unit with the buttons "▽" or "△" and briefly press the button "SET" to save.
- The value for the altitude blinks now. Set the approximate altitude for your region with the buttons "▽" or "△" here. For a quick setting, keep the corresponding button depressed for a longer period of time.

  Save the value; briefly press the button "SET".
- Now the weather station measures the air pressure and indicates this on the display (e.g. "1016.4 hPa/mBar").

- Afterwards, the radio tower symbol for DCF reception blinks on the display.

Bad reception signal Good reception signal

The detection of the DCF signal and its evaluation may take a few minutes. Once you have found a good reception position, do not move the weather station any more during this time. Do not press any buttons on the weather station.

Do not place the weather station next to electric/electronic devices; do not place it near cables, plugs or metallic parts.

A bad reception can also be caused by, e.g. metallised insulated glass windows, reinforced concrete constructions, coated special wallpaper or installation in basements.

For more information about DCF reception, see chapter 10.

- After the correct detection of the DCF signal and its evaluation, the time and the weekday appear on the display.
- If the measuring values of the temperature/air humidity sensor do not appear on the top right of the display yet, you can start a manual search for all outdoor sensors.

For this purpose, keep the button "▽" (6) depressed until the symbol for the radio reception of the outdoor sensors blinks on the top of the display.

The sensor search may take a few minutes.

Use the support base on the back of the weather station to install it in a suitable place.

For wall mounting (opening on the back of the weather station), simply pull off the base downwards.

Select an installation site that is not exposed to direct sunlight; otherwise you may receive wrong measuring values for the temperature/air humidity. Also keep a sufficient distance to radiators.

To obtain a good radio reception, install the weather station as far away as possible from electric/electronic devices, metal parts, cables or similar.

Protect valuable furniture surfaces with a suitable pad or similar to avoid scratches.

- This completes the commissioning of the weather station and the outdoor sensors.

10. DCF reception

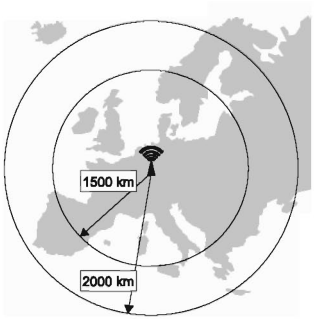
The weather station can receive and evaluate the so-called DCF signal.

This is a signal which is sent by a transmitter in Mainflingen (near Frankfurt am Main). Its range is up to 1500 km. With ideal transmission conditions even up to 2000 km.

Among other things, the DCF signal includes the precise time (theoretical deviation of 1 second in a million years!) and the date.

This means you do not have to switch manually between daylight savings time and normal time.

The first DCF reception attempt is always performed when commissioning the device (inserting the battery, see chapter 9).



The detection of the DCF signal and its evaluation may take a few minutes. Once you have found a good reception position, do not move the weather station any more during this time. Do not press any buttons on the weather station.

Do not place the weather station next to electric/electronic devices; do not place it near cables, wall outlets or metal parts.

A bad reception can also be caused by, e.g. metallised insulated glass windows, reinforced concrete constructions, coated special wallpaper or installation in basements.

Automatic synchronisation takes place every day at approx. 0:00 hrs, 3:00 hrs, 6:00 hrs and 12:00 hrs. A single reception per day is sufficient to keep the daily precision deviation below 1 second.

It is also possible to enter the time and date manually in case of difficult reception positions.

You can start a DCF signal reception attempt manually as well by keeping the button "△" (7) depressed until the DCF radio tower symbol starts to blink (see chapter 9. d).

11. Operating the weather station, basic functions

a) Performing a DCF reception test

If the weather station has not detected a DCF signal, you can also start a manual reception attempt for the DCF signal. To do so, keep the button "△" (7) depressed until the DCF radio tower symbol starts to blink (see chapter 9. d).

Check whether the radio tower icon indicates a good reception and wait some minutes until the right time is displayed.

Otherwise select a better location for the weather station and start the reception attempt again.

b) Searching for sensors

If only lines appear in a display field (e.g. for the rain sensor: "- - - . -"), you can start a manual search for all outdoor sensors.

For this purpose, keep the button "▽" (6) depressed until the symbol for the radio reception of the outdoor sensors blinks on the top of the display.

The sensor search may take a few minutes.

If one of the sensors is not found, check its batteries, place the sensor in a different location and reduce the distance between the weather station and the sensor.

c) Background illumination

When using the provided power pack unit, the background illumination can be activated permanently (or it is activated automatically at darkness and deactivated during the day).

With battery operation, the background illumination can only be activated briefly to save energy and battery power.

You can select the desired function with the switch "LIGHT SENSOR" (13):

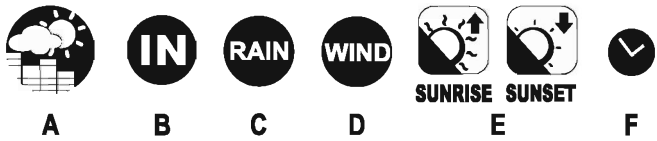
ON	The background illumination is always on (only when using the provided power pack unit).
OFF	The background illumination is off and only activated for a few seconds when briefly pressing the button "SNOOZE • LIGHT".
AUTO	The background illumination is activated at darkness and deactivated during the day.

You can select the sensitivity for the brightness detection with the switch "SENSITIVITY" (14).

d) Selecting the function

If the weather station is in normal operation (e.g. not when setting the alarm time or searching for a sensor or similar), you can select the individual functions by briefly pressing the button "▽" (6) or "△" (7).

The selected function blinks on the display. Additional settings and displays are possible for each function. These are explained in the next chapter. Below in the display illustration you can see the position of the symbols and the respective display section.



A Weather (weather forecast, weather trend, air pressure, moon phase, bar diagrams for temperature/air humidity progression)

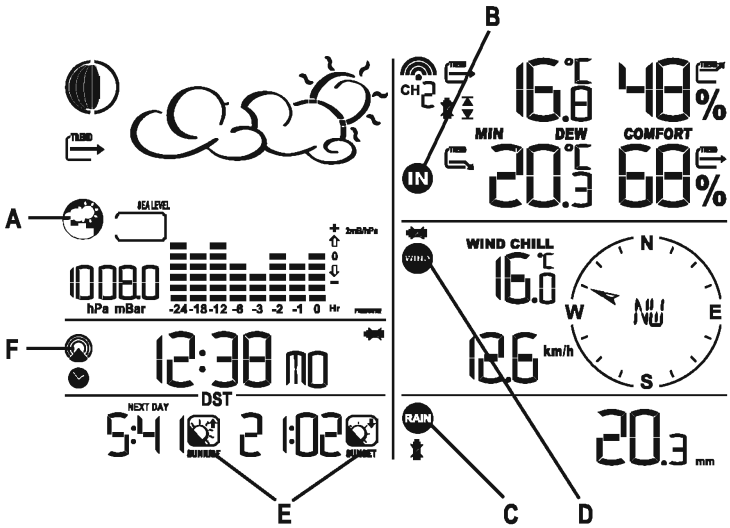
B Temperature/air humidity (indoor/outdoor temperature/air humidity, trend display, minimum/maximum value, °C/°F switching, dew point display, battery symbol for weak batteries in the temperature/air humidity sensor)

C Rain (value memory, switching the measuring unit, battery symbol for weak batteries in the rain sensor)

D Wind (value memory, wind direction display in degrees or text, wind speed, wind-chill temperature, battery symbol for weak batteries in the wind sensor)

E Sunrise/sunset time

F Time/Date (manual setting, language selection for weekday display, 12/24h mode, alarm function, pre-alarm, battery symbol for weak batteries in the weather station)



12. Description of the functions

a) Function "Weather" (symbol "  ")

In the basic display mode of the weather station, select the function "Weather" with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display

With a brief press of the button "SET" (5), you can switch between:

- Display of the air pressure on sea level ("SEA LEVEL" appears on the display)
- Display of the air pressure at the altitude you have set ("LOCAL")
- Display of the altitude

▶ Setting/adjusting the air pressure to sea level height

If the air pressure at sea level is displayed (the display indicates "SEA LEVEL"), you can correct this if you know the current air pressure in your region (obtained from radio, TV or Internet).

- Keep the button "SET" (5) depressed until the air pressure value starts to blink.
- You can correct the value with the button "▽" (6) or "△" (7).
- Briefly press the "SET" button (5) to save the setting.

▶ Selecting the units for air pressure ("mmHg", "hPa/mBar" or "InHg")

If the air pressure at sea level is displayed (the display shows "SEA LEVEL"), you can select the units for the display.

- Keep the button "MEMORY" (3) depressed until the current units (e.g. "hPa/mBar") start to blink.
- With the button "▽" (6) or "△" (7), you can select the unit of air pressure (mmHg, hPa/mBar, InHg).
- Briefly press the "SET" button (5) to save the setting.

▶ Setting/adjusting the altitude

If the altitude is displayed, you can correct it, e.g. if you did not do so during the initial installation or if you have a more exact value for your region.

- Keep the button "SET" (5) depressed until the altitude starts to blink.
- You can correct the value with the button "▽" (6) or "△" (7).
- Briefly press the "SET" button (5) to save the setting.

▶ Selecting the altitude unit ("meter" or "feet")

If the altitude is displayed, you can select the display units.

- Keep the button "MEMORY" (3) depressed until the current units (e.g. "meter") start to blink.
- With the button "▽" (6) or "△" (7), you can select the altitude unit ("meter" or "feet").
- Briefly press the "SET" button (5) to save the setting.

▶ Viewing the moon phase of the past or next 39 days

- Briefly press the button "MEMORY" (3). The display window shows "+0 days" directly next to the weather symbol.
- With the button "▽" (6) or "△" (7), you now view the moon phase for the next resp. last 39 days. The corresponding moon symbol is indicated on the top left of the display (keep the button depressed longer for quick adjustment).
- Press the button "MEMORY" (3) to leave display mode (or do not press any button for approx. 5 seconds).

Full moon New moon

▶ Turning the thunderstorm alarm on/off

In general, rapidly declining air pressure indicates a thunderstorm. In this case, the weather station can emit a signal.

- Briefly press the button "ALARM/CHART" (1). A thunderstorm icon appears on top of the display, and "ON" or "OFF" appears in the display field for the air pressure.
- By repeatedly pressing the button "ALARM/CHART" (1), you can now activate ("ON") or deactivate ("OFF") the thunderstorm alarm.
- Then wait a few seconds until the display of the current air pressure reappears. The setting is saved.

▶ Viewing the temperature or air humidity values of the past 24 hours

- Keep the button "ALARM/CHART" (1) depressed until a small thermometer symbol and a small house symbol with "CH1" appear on the display on the right next to the progression display. The progression display now serves to display the temperature progression measured by the temperature/air humidity sensor on channel 1 in the past 24 hours.
- Keep the button "ALARM/CHART" (1) depressed again until a small air humidity symbol and a small house symbol with "CH1" appear on the display on the right next to the progression display. The progression display now serves to display the air humidity progression measured by the temperature/air humidity sensor on channel 1 in the past 24 hours.
- If you press the button "ALARM/CHART" (1) once again for longer, the display switches back to the air pressure progression.

▶ Viewing the air pressure values of the past 24 hours

- Briefly press the button "HISTORY" (2) repeatedly. The display now shows the average air pressure for each hour in the past 24 hours (in case of missing values, e.g. because of a battery change or upon commissioning, line appear ("- - - - . -") instead of a value.

By the way: the display of the air pressure progression in the past 24 hours using the "HISTORY" button functions in all display modes.

▶ Weather forecast symbols

The weather forecast of the weather station is one of the most interesting features. Although the weather station can of course not replace the professional weather forecast on the radio, TV or in the Internet, the weather forecasts have a remarkable accuracy of 70% based solely on measuring and observing the air pressure in the past days.

Sunny

Partially cloudy

Cloudy

Slight precipitation

Heavy precipitation

Thunderstorm (symbols may appear in addition to the above symbols)

Snowfall

We would like to inform you a bit more in detail about the symbols and their meaning:

- If "Sunny" is displayed at night, this indicates a clear, starry night.
- The display "Snowfall" appears instead of the display "Rain" if the outdoor temperature is below 0°C. (The temperature is measured via outdoor sensor "1"; therefore this should not be operated in a basement or similar!).
- The display does not indicate the current weather situation. Instead it forecasts the weather for the next 12 to 24 hours.
- The calculation of the weather forecast solely based on the air pressure value only results in a maximum accuracy of approx. 70%. Therefore, the weather may be completely different on the next day. As the measured air pressure is only valid for a region with a diameter of approx. 50 km, the weather may change quickly. This applies above all for mountain or high mountain regions.

  Therefore, don't depend on the weather forecast of the weather station, but inform yourself locally when you would like to hike in the mountains, for example.
- In case of sudden or larger air pressure fluctuations, the display symbols are updated to indicate the weather change. If the display symbols do not change, either the air pressure did not change or the change occurred so gradually that it cannot be registered by the weather station.

- If the weather forecast "Sunny" or "Rainy" appears, the display also does not change when the weather turns better (display "Sun") or worse (display "Rain"), as the display symbols already show the two extreme situations.
- The display symbols indicate a weather change for the better or worse, which does not have to mean sun or rain, however, as indicated by the symbols.

  For example, if the current weather is cloudy and rain is displayed, this does not mean that the product malfunctions, but rather that the air pressure has dropped and that a worse weather condition is to be expected, which does not necessarily have to mean rain, however.
- After initial insertion of the batteries, you should not pay attention to the weather forecasts for the first 12 to 24 hours, because the weather station first has to collect air pressure data in this period at a constant height above sea level to make a more exact forecast.
- If you take the weather station to a place that is significantly lower or higher than the original site (e.g. from the ground floor to the top stories of a building), the weather station may interpret this as a weather change.

▶ Air pressure trend display

On the top left of the display, you will see the trend display for the air pressure, which should display the development of the air pressure:

Rising

Constant

Falling

b) Function "Temperature/air humidity" (symbol "IN")

In the basic display mode of the weather station, select the function "Temperature/air humidity with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display unit °C/°F

- Keep the button "SET" (5) depressed until the display unit (°C/°F) for the indoor/outdoor temperature is switched.
- Release the button again.

▶ Dew point display

- Briefly press the button "SET" (5); "DEW" (= dew point) is displayed on the top right between the values, and the temperature display is switched.
- If you briefly press the button "SET" (5) once again, the current temperature is displayed again.

The so-called dew point is a temperature point that depends on the concurrence of a certain air pressure, a certain temperature and a certain air humidity.

Condensation of the air humidity starts at this point and condensation turns into liquid (fog, mist).

If the dew point for steam is below 0°C, condensation takes place in the shape of snow or frost.

▶ Display of the minimum/maximum values for temperature/air humidity

- First select the desired temperature/air humidity sensor with the button "CHANNEL" (4).
- Briefly press the button "MEMORY" (3). "MIN" appears between the temperature/air humidity values and the minimum values are displayed.
- Briefly press the button "MEMORY" (3) again; "MAX" appears and the maximum values are displayed.
- With another brief press of the button "MEMORY" (3), the display changes to the current measuring values.

▶ Deleting minimum/maximum values

- First, briefly press the button "MEMORY" (3) to display the minimum and maximum values.
- Now keep the button "MEMORY" (3) depressed for approx. 3 seconds. This deletes the minimum and maximum values.

Until the next value change, the current values for temperature and air humidity are saved as minimum resp. maximum values.

▶ Switching between several temperature/air humidity sensors

- Briefly press the button "CHANNEL" (4) to select the desired outdoor sensor for the temperature/air humidity. The corresponding channel number is displayed.

If you only use one temperature/air humidity sensor, you must set this to "Channel 1" (switch in the sensor's battery compartment), otherwise the progression display does not work (see chapter 12 a, section "See progression of the temperature or air humidity in the past 24 hours").

▶ Automatic switching in case of several temperature/air humidity sensors

If you operate more than one temperature/air humidity sensor, the weather station can also change the up to 5 channels automatically.

- Keep the button "CHANNEL" (4) depressed until the symbol "" appears.

This is only possible if more than one temperature/air humidity sensor is registered with the weather station.

- To deactivate the automatic switchover again, keep the button "CHANNEL" (4) depressed until the symbol "" disappears.

▶ Selecting or turning the temperature alarm on/off

For each of the 5 channels, you can select a top and bottom temperature. When this is exceeded or undercut, an alarm sounds (stop this by pressing the button "SNOOZE • LIGHT").

- First select the desired channel for the corresponding temperature/air humidity sensor with the button "CHANNEL" (4), for which you want to select resp. deactivate the temperature alarm.
- Briefly press the button "ALARM/CHART" (1) repeatedly to switch between the top temperature limit (symbol "▲"), bottom temperature limit (symbol "▼") and the normal display.
- If the symbol "▲" or "▼" is displayed, you can activate or deactivate the corresponding temperature alarm by briefly pressing the button "▽" (6) or "△" (7).

When the temperature alarm is deactivated, the display shows "OFF"; when it is activated, the respective value.

▶ Setting the temperature values for the temperature alarm

- First press the button "ALARM/CHART" (1) once or twice to display the top (symbol "▲") or bottom (symbol "▼") temperature alarm. Then briefly press the button "▽" (6) or "△" (7) to activate the temperature alarm (a temperature value is displayed instead of "OFF").
- Now keep the button "ALARM/CHART" (1) depressed until the temperature value changes.
- You can change the temperature value with the buttons "▽" (6) or "△" (7) (keep the respective button depressed longer for quick adjustment).
- Save the setting by briefly pressing the button "ALARM/CHART" (1).

▶ Trend display for temperature/air humidity

As with the air pressure, the indoor/outdoor temperature and the indoor/outdoor humidity also features a trend display to show you the respective development of the measuring values:

Rising Constant Falling

▶ Comfort indicator for interior air humidity

Either "WET", "COMFORT" or "DRY" is displayed between the values for the indoor/outdoor temperature/air humidity.

This is the so-called comfort indicator, which is calculated using the indoor temperature and indoor air humidity.

Display	Temperature	Air humidity
DRY	-5°C to +50°C (+23°F to +122°F)	Below 40% RH
COMFORT	+20°C to +25°C (+68°F to +77°F)	40-70% RH
WET	-5°C to +50°C (+23°F to +122°F)	Above 70% RH
(no display)	Below +20°C (+68°F), above +25°C (+77°F)	40-70% RH

The comfort indicator provides a fast estimate of the prevailing ambient conditions at the installation site of the weather station ("DRY" = too dry, "COMFORT" = ideal, "WET" = too damp).

c) Function "Wind" (symbol "WIND")

In the basic display mode of the weather station, select the function "Wind" with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display data

Briefly press the button "SET" (5) repeatedly to switch between the following displays:

- Wind-chill factor (display "WIND CHILL"), wind direction display using the abbreviations of the points of the compass (e.g. "NNE" for "NORTH-NORTH-EAST")
- Wind-chill factor (display "WIND CHILL"), wind direction indication in degrees (e.g. 22.5°)
- Temperature at the wind sensor, wind direction display using the abbreviations of the points of the compass (e.g. "NNE" for "NORTH-NORTH-EAST")
- Temperature at the wind sensor, wind direction indication in degrees (e.g. 22.5°)

People sometimes perceive temperatures completely differently under certain circumstances than that displayed by a thermometer. Especially in case of low outdoor temperatures, the temperature on naked skin fells a lot colder the more the wind blows.

The "wind-chill" is a cooling effect defined for naked skin with a theoretical surface temperature of 33°C and a wind speed of over 2.6m/s.

The higher the wind speed and the lower the actual ambient temperature, the more perceivable the wind-chill effect.

▶ Switching the units for the display of the wind speed

Keep the button "SET" (5) depressed until the unit for the display of the wind speed changes. Release the button again. Start again if you want to change the unit once again.

You can select between "km/h", "mph", "m/s" and "knots".

▶ Viewing the value memory for the wind speed

Briefly press the button "MEMORY" (3) repeatedly to switch between the following displays:

- Current wind speed
- Maximum wind speed today (display "DAILY MAX")
- Gust wind speed (display "GUST")
- Maximum gust wind speed today (display "GUST" and "DAILY MAX")

▶ Deleting the value memory for the wind speed

Keep the button "MEMORY" (3) depressed approx. 3 seconds to delete the value memories.

▶ Turning the wind speed alarm on/off

You can activate an alarm for the wind speed and an alarm for wind gusts. When the set wind speed is exceeded, an alarm is issued (stop this by pressing the button "ALARM/CHART").

- Briefly press the button "ALARM/CHART" (1) to switch between the alarm for the wind speed (display "ALARM HI"), the alarm for wind gusts (display "GUST" + "ALARM HI") and the normal display.

  If "ALARM HI" or "GUST" + "ALARM HI" is displayed, you can activate or deactivate the corresponding wind speed alarm by briefly pressing the button "▽" (6) or "△" (7).

When the alarm is deactivated, the display shows "OFF"; when it is activated, the respective value.

▶ Setting the wind speed alarm

- First press the button "ALARM/CHART" (1) once or twice to select the normal wind speed alarm (display "ALARM HI") or the wind gust alarm (display "GUST" + "ALARM HI"). Then briefly press the button "▽" (6) or "△" (7) to activate the alarm (if applicable).
- Now keep the button "ALARM/CHART" (1) depressed until the wind speed value blinks.
- You can change the wind speed value with the buttons "▽" (6) or "△" (7) (keep the respective button depressed longer for quick adjustment).
- Save the setting by briefly pressing the button "ALARM/CHART" (1).

d) Function "Rain" (symbol "RAIN")

In the basic display mode of the weather station, select the function "Rain" with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display data

Briefly press the button "SET" (5) or "MEMORY" (3) to switch between the following displays:

- Current rain quantity (display e.g. "1.0mm/hr")
- Rain quantity in the past hour (display "LAST HOUR")
- Rain quantity in the past 24 hours (display "LAST 24Hr")
- Yesterday's rain quantity (display "YESTERDAY")
- Rain quantity in the past week (display "LAST WEEK")
- Rain quantity in the past month (display "LAST MONTH")

▶ Deleting the value memory for the rain quantity

Keep the button "MEMORY" (3) depressed approx. 3 seconds to delete the value memories.

▶ Turning the rain quantity alarm on/off

You can activate an alarm for the rain quantity. When the set rain quantity is exceeded, an alarm is issued (stop this by pressing the button "ALARM/CHART").

- Briefly press the button "ALARM/CHART" (1) to access alarm mode ("ALARM HI", bottom right of the display), then briefly press the button "▽" (6) or "△" (7) to activate/deactivate the alarm.

When the alarm is deactivated, the display shows "OFF"; when it is activated, the respective value.

▶ Setting the rain quantity alarm

- First, briefly press the button "ALARM/CHART" (1) to access alarm mode (display "ALARM HI"). Then briefly press the button "▽" (6) or "△" (7) to activate the alarm (if it is deactivated).
- Now keep the button "ALARM/CHART" (1) depressed until the rain value blinks.
- You can change the rain value with the buttons "▽" (6) or "△" (7) (keep the respective button depressed longer for quick adjustment).
- Save the setting by briefly pressing the button "ALARM/CHART" (1).

e) Function "Time/Date" (Symbol "  ")

In the basic display mode of the weather station, select the function "Time/date" with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display data

Briefly press the button "SET" (5) repeatedly to switch between the following displays:

- Time (Hour : Minute : Seconds)
- Date (Day : Month : Year, or Month : Day : Year, depending on the setting)
- Time UTC (Hour : Minute)
- Time and weekday (Hour : Minute : Weekday)
- Time and city (Hour : Minute : City)

▶ Setting the language for the weekday, geographic position, date and time

The following settings need a bit of time. It is important that you previously select a city in the appendix, which is close to your place of residence. This geographical data is later on used to calculate the sunrise and sunset times.

As a special feature of the weather station, "professionals" can also enter the geographic degrees of longitude and latitude (minute and degree of arc); this data is available in the Internet or on special maps.

The setting takes place in a specific sequence, which must be performed completely (step 1 to 13).

If you keep the button "SET" (5) depressed for longer, you leave setup mode and all changes/settings already performed are lost in the process! The same applies if you do not make an entry for some time.

Step 1:

Keep the button "SET" depressed until the language for the display of the weekday appears next to the time. Set the desired language with the button "▽" (6) or "△" (7):

GER = German
ENG = English
DUT = Dutch
SPA = Spanish
ITA = Italian
FRE = French

Step 2:

Briefly press the "SET" button (5) to access the next setting.

Step 3:

The display shows "CITY" and the three-digit city code blinks (or the abbreviation for a city). The city codes are listed in the appendix to these operating instructions. Set the desired city code with the button "▽" (6) or "△" (7):

You should select a city in your proximity so that the internal calculation for the sunrise and sunset times is as accurate as possible.

When selecting "USR" as city code, you can enter the exact geographic location of your region using the degrees longitude and latitude, if this data is available (e.g. in the Internet or similar), see point 4.

Step 4:

Briefly press the "SET" button (5) to access the next setting.

Step 5:

If "USR" was selected as city code (see step 3), you now have to enter the geographic location in degrees longitude and latitude (entering the arc degree and arc minute is also possible). Otherwise skip to step 6.

Now two lines "- -" blink for the degree of latitude. Enter the degree of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry with the button "SET" (5).

Now two lines "- -" blink for the minute of arc. Enter the minute of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry again with the button "SET" (5).

Now "N" or "S" blinks. With the button "▽" (6) or "△" (7), select whether this is the northern ("N") or southern ("S") degree of latitude. Confirm the setting by pressing the "SET" button (5).

Now two lines "- -" blink for the degree of longitude. Enter the degree of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry with the button "SET" (5).

Now two lines "- -" blink for the minute of arc. Enter the minute of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry again with the button "SET" (5).

Now "W" or "E" blinks. With the button "▽" (6) or "△" (7), select whether this is the western ("W") or eastern ("E") degree of longitude. Confirm the setting by pressing the "SET" button (5).

"0:00 - TZ" now blinks on the display. Enter the time zone with the button "▽" (6) or "△" (7) (+15....-13 hours are possible). Confirm the setting by pressing the "SET" button (5).

"DST" and "NO" blink on the display. Here you have to set whether there is a change from daylight savings time to normal time and which one is supposed to be used. The appendix contains more detailed data. Confirm the setting by pressing the "SET" button (5).

Step 6:

The year blinks on the display. Set this with the button "▽" (6) or "△" (7) (keep it depressed for longer as usual for quick adjustment). Confirm the setting by pressing the "SET" button (5).

Step 7:

The month blinks on the display. Set this with the button "▽" (6) or "△" (7). Confirm the setting by pressing the "SET" button (5).

Step 8:

The day blinks on the display. Set this with the button "▽" (6) or "△" (7). Confirm the setting by pressing the "SET" button (5).

Step 9:

"D" and "M" blink on the display. Here you can set the sequence for the display of the day and month (either day/ month = D/M or month/day = M/D). Select the sequence with the button "▽" (6) or "△" (7). Confirm the setting by pressing the "SET" button (5).

Step 10:

"24" (or "12") blinks on the display. With the button "▽" (6) or "△" (7), set whether the time is to be displayed in 24 or 12 hour mode.

In 12 hour mode, "AM" is displayed for the first half of the day and "PM" for the second half next to the time on the display.

Confirm the setting by pressing the "SET" button (5).

Step 11:

The hours blink on the display. Set these with the button "▽" (6) or "△" (7). Confirm the setting by pressing the "SET" button (5).

Step 12:

The minutes blink on the display. Set these with the button "▽" (6) or "△" (7). Confirm the setting by pressing the "SET" button (5).

Step 13:

The seconds are automatically set to "00", the settings are saved and you quit setup mode.

▶ Selecting the alarm function or viewing the alarm time

- First select the function "Time/date" (symbol "" blinks) with the button "▽" (6) or "△" (7).
- Then briefly press the button "ALARM/CHART" repeatedly until the desired alarm function appears:

  Symbol "**W**": The alarm function is only triggered on weekdays (from Monday to Friday).

  Symbol "**S**"): The alarm function is only triggered once and then deactivated automatically.

  Symbol "**PRE AL**": In case of low outdoor temperatures (below approx. 2°C), the so-called pre-alarm is triggered at a set time (15, 30, 45, 60 or 90 minutes) prior to the actual alarm time. This gives you enough time to e.g. defrost your car windows or shovel snow.

To be able to activate resp. set the pre-alarm (display "**PRE-AL**"), you first have to activate the alarm function "**W**" or "**S**" (otherwise it is of course not possible to trigger a pre-alarm).

▶ Switching the alarm function on/off

- First select the function "Time/date" (symbol "" blinks) with the button "▽" (6) or "△" (7).
- Then briefly press the button "ALARM/CHART" repeatedly until the desired alarm function appears (see above).
- With the button "▽" (6) or "△" (7), you activate the selected alarm function (alarm time appears) or deactivate it (display shows "OFF").

To be able to activate resp. set the pre-alarm (display "**PRE-AL**"), you first have to activate the alarm function "**W**" or "**S**" (otherwise it is of course not possible to trigger a pre-alarm).

▶ Setting the alarm time

You must be located in the function "Time/date" (symbol "" blinks). Select this with the button "▽" (6) or "△" (7).

- By briefly pressing the button "ALARM/CHART" (1), select the desired alarm function "**W**" or "**S**".
- Activate the previously selected alarm function (button "▽" (6) or "△" (7)), so that an alarm time is displayed instead of "OFF".
- Now keep the button "ALARM/CHART" (1) depressed until the hours of the alarm time blink. Set the hours with the button "▽" (6) or "△" (7). Confirm the setting by briefly pressing the "ALARM/CHART" button (1).
- The minutes of the alarm time blink, set these with the button "▽" (6) or "△" (7). Confirm the setting by briefly pressing the "ALARM/CHART" button (1).
- Now the display shows "SNZ" and the minutes for the so-called snooze function ("SNOOZE") blink. With the button "▽" (6) or "△" (7) you can set a time from 1 to 15 minutes. Confirm your setting by briefly pressing the button "ALARM/CHART" (1).

  Now press the button "ALARM/CHART" (1) briefly and repeatedly until the current time is displayed again.

▶ Turning the pre-alarm on/off, setting the pre-alarm

- First activate an alarm function as described above (either "W" or "S").
- Then select the pre-alarm; briefly and repeatedly press the button "ALARM/CHART" until the display shows "**PRE-AL**".
- Activate/deactivate the pre-alarm with the button "▽" (6) or "△" (7). With a deactivated pre-alarm, the display shows "OFF", with activated pre-alarm a time period of 15, 30, 45, 60 or 90 minutes).
- Now keep the button "ALARM/CHART" (1) depressed until the displayed period (15, 30, 45, 60 or 90) blinks. Set the minutes for the pre-alarm with the button "▽" (6) or "△" (7) and confirm your setting by briefly pressing the button "SET" (5).

Only a time period of 15, 30, 45, 60 or 90 minutes can be set.

▶ Stopping the alarm signal

- Once the alarm signal sounds at the set time, you can turn it off by pressing the button "ALARM/CHART" (1).
- You can also activate a snooze function ("SNOOZE"), see next section.

▶ Snooze function ("SNOOZE")

Once the alarm function sounds at the set time, you can activate the snooze function with a brief press of the button "SNOOZE • LIGHT" (8) on the top of the weather station.

This interrupts the alarm signal for a certain time and then starts it again.

You can activate the snooze function once again if you do not want to get up yet.

If an alarm signal is not deactivated within 2 minutes by briefly pressing the button "ALARM/CHART", the snooze function is activated automatically. This takes place three times; afterwards, the alarm function is deactivated.

When programming an alarm time, you can set how long the alarm signal is supposed to be interrupted (1 to 15 minutes), see the chapter "Setting the alarm time".

f) Function "Sunrise/sunset" (symbol "SUNRISE SUNSET")

In the basic display mode of the weather station, select the function "Sunrise/sunset" with the button "▽" (6) or "△" (7). The corresponding symbol (see above) blinks.

The following setting options and displays are available now:

▶ Switching the display data

Briefly press the button "SET" (5) repeatedly to switch between the following displays:

- Date, city code and sunrise/sunset times
- Time, city code and sunrise/sunset times
- Date, city code and corresponding degree of longitude/latitude

In the display field for the sunrise time, a different value appears depending on the time of day:

0.00 to 12.00 hrs: The sunrise time of the current day is displayed

12.00 to 24.00 hrs: The sunrise time of the next day is displayed

Please note that there are no sunrise or sunset times in some locations (with a high degree of latitude), as the sun shines the whole day (display "FULL") or not at all (display "- - - -").

▶ Entering the location data

- Keep the button "SET" (5) depressed until the time display field shows "CITY" and a three-digit city code blinks below.
- With the button "▽" (6) or "△" (7), you can now select a city close to the location whose sunrise and sunset times are to be calculated.

You will find a list of cities and city codes in the appendix in chapter 21.

For a quick adjustment, hold the corresponding button for a longer period of time.

- Briefly press the button "SET" (5) to confirm the selection. Now the display shows the sunrise and sunset times.

Entering the data for the city code "USR":

If "USR" was selected as city code, you now have to enter the geographic location in degrees longitude and latitude (entering the arc degree and arc minute is also possible).

After confirmation with the button "SET" (see above), only lines appear on the display instead of the sunrise and sunset times.

Enter the data as follows:

- Two lines "- -" blink for the degree of latitude. Enter the degree of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry with the button "SET" (5).
- Now two lines "- -" blink for the minute of arc. Enter the minute of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry again with the button "SET" (5).
- Now "N" or "S" blinks. With the button "▽" (6) or "△" (7), select whether this is the northern ("N") or southern ("S") degree of latitude. Confirm the setting by pressing the "SET" button (5).
- Now two lines "- -" blink for the degree of longitude. Enter the degree of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry with the button "SET" (5).
- Now two lines "- -" blink for the minute of arc. Enter the minute of arc with the button "▽" (6) or "△" (7) (keep this depressed longer for quick adjustment) and confirm your entry again with the button "SET" (5).

- Now "W" or "E" blinks. With the button "▽" (6) or "△" (7), select whether this is the western ("W") or eastern ("E") degree of longitude. Confirm the setting by pressing the "SET" button (5).
- "0:00 - TZ" now blinks on the display. Enter the time zone with the button "▽" (6) or "△" (7) (+15....-13 hours are possible). Confirm the setting by pressing the "SET" button (5).
- "DST" and "NO" blink on the display. Here you have to set whether there is a change from daylight savings time to normal time and which one is supposed to be used.

The appendix in chapter 21 and 22 contains more data.

- Confirm the setting by pressing the button "SET" (5). The calculated sunrise and sunset times appear now.

▶ Viewing the sunrise/sunset times

Here you can adjust the date to view the corresponding sunrise/sunset times. Proceed as follows:

- Briefly press the button "MEMORY" (3); now the date starts to blink.
- You can adjust the date with the button "▽" (6) or "△" (7). For quick adjustment, keep the corresponding button depressed for a longer period of time.

During quick adjustment, only lines appear on the display for the sunrise/sunset times. The times are first calculated after releasing the button.

- Briefly press the button "MEMORY" (3) to quit the display mode.

13. Software installation, connection to the PC

a) Software installation

Insert the enclosed CD into the corresponding drive of your computer (Windows operating system required, Windows XP recommended).

If the installation program does not start automatically, open the file manager and start the installation program on the CD (e.g. "setup.exe").

If the required current Java runtime version is not detected, the installation program offers you to install the right version (contained on the CD). Java is mandatory to operate the software.

The software "WeatherCapture" is installed afterwards.

b) PC connection

Connect the USB connector (16) of the weather station to a free USB 2.0 port of your PC using the USB cable provided.

Start the software by e.g. clicking on the start button under Windows XP. Then start the program "WeatherCapture" in the folder "WeatherCapture" in "Programs". Of course, you can also create a shortcut on your desktop for an easier start.

Now the message "Data is loading" appears and the data from the weather station is transferred to the PC.

c) Short description of the software

The software offers an extensive help file, which you can start via the menu bar on top.

After starting the software, all measuring values are displayed in different windows. You can move these windows with the mouse and align them at wish on the software's surface.

You can also select different functions via the menu bar, e.g. to set the language of the software.

For the display windows "Temperature", "Wind", "Air humidity", "Air pressure" and "Rain", you can activate the corresponding progression displays of the value changes by clicking on the small square field in the top left edge of the display window (of course, these are empty at first start).

If the UV index indicator should appear in the software, you can deactivate this via the software's display settings. (The software is also used for other weather stations, which is why it includes the UV index display).

14. Replacing the batteries

a) Weather station

A battery exchange is required once the display contrast becomes very weak or if the symbol "🪫" appears in the display field for the time.

To save all settings, we recommend operating the weather station with the enclosed power pack unit during the battery change.

b) Sensors

The symbol "🪫" also appears for each sensor (temperature/air humidity sensor, rain sensor, wind sensor) in the respective display section if the sensor's batteries are spent.

Exchange the batteries of the sensor for new ones. Proceed as described in the chapter "Commissioning" to exchange and insert the batteries.

If the weather station can no longer identify the sensor (e.g. if the display still shows "- - - - -" for the wind sensor one hour after changing the batteries), perform a manual search for the sensors.

For this purpose, keep the button "▽" (6) depressed until the symbol for the radio reception of the outdoor sensors blinks on the top of the display. The sensor search may take a few minutes.

When exchanging the batteries of the wind sensor, please note that the tip of the weathercock is aligned directly north when inserting the new batteries. Afterwards, press the button "SET" (30) located on the side inside the wind sensor's battery compartment (see arrow in the image on the right). Otherwise the weather station will indicate the wrong wind directions!

15. Troubleshooting

In purchasing the weather station, you have acquired a state of the art, safe to operate product. Nevertheless, problems and faults might occur. Therefore, we would like to describe here how to eliminate possible faults.

Observe all safety instructions in these operating instructions!

Problem	Solution
No reception of the outdoor sensor's signal?	• The distance between the weather station and the outdoor sensors is too large. Change the installation site of the outdoor sensors. • Perform a manual sensor search (keep the button "▽" (6) depressed until the sensor reception signal blinks). • Objects or shielding materials interfere with radio reception. The same applies to other electronic devices, e.g. televisions or computers. Change the installation site of the outdoor sensors and the weather station. • The batteries of the outdoor sensors are weak or empty. Try to insert new batteries into the outdoor sensors. • A different transmitter on the same or an adjacent frequency interferes with the radio signal of the outdoor sensors. This might be e.g. radio-controlled headphones, radio-controlled speakers or similar devices. Such products are usually not in use all the time; the radio reception may be faultless the next day, for example, which makes a search for the cause more difficult.
No DCF reception	• Change the installation site of the weather station. Keep a sufficient distance to electronic devices, metal parts and cables. Do not operate the weather station in a basement. • Perform another reception test for the DCF signal (keep the button "△" (7) depressed until the radio tower symbol for DCF reception blinks).

16. Range

Under optimum conditions, the transmission range of the radio signals between the temperature/air sensor and the weather station is up to 100m, the transmission range between the rain sensor and the wind sensor to the weather station up to 30m.

However, the range values refer to the so-called "free field range".

This ideal arrangement (e.g. weather station and outdoor sensor on a plain, even meadow without trees, houses etc.) never exists in practice.

Normally, the weather station is installed inside the house, the temperature/air humidity sensor next to a window, and the rain and/or wind sensor on a carport, for example.

Due to the different influences on radio transmission, it is not possible to guarantee a specific range.

However, trouble-free operation is usually possible in a detached house.

If the weather station does not receive any data from the outdoor sensors (despite new batteries), reduce the distance between the outdoor sensors and the weather station, change the installation site.

The range can sometimes be considerably reduced by:

- walls, reinforced concrete ceilings
- coated/vapour-deposited insulating glass panes
- vehicles
- trees, brushes, earth, rocks
- proximity to metallic & conductive objects (e.g. radiators)
- proximity to the human body
- broadband interferences, e.g. in residential areas (DECT telephones, mobiles, radio-controlled headphones, radio-controlled speakers, other radio-controlled weather stations, baby phones etc.)
- proximity to electric motors, transformers, power pack units, computers
- proximity to badly shielded or openly operated computers or other electric/electronic devices

17. Maintenance and cleaning

Servicing or repair work may only be carried out by a specialist/specialist workshop. There are no components on the inside of the product which you need to maintenance. This is why you should never open it (apart from inserting or changing the batteries as described in these operating instructions).

To clean the exterior of the weather station, a dry, soft and clean cloth is sufficient.

Do not press too hard on the display, as this may cause scratch marks or lead to faulty displays.

Dust on the weather station can be easily removed with the help of a long-haired, soft and clean brush and a vacuum cleaner.

Use a slightly damp soft cloth (moistened with lukewarm water) to remove dirt from the outdoor sensors.

Never use aggressive cleaning agents, alcohol or other chemical solutions, as these may damage the housing or even impair the function of the product.

Check the receptacle of the rain sensor sporadically. Despite the protective grid, small leave or dirt particles may clog the opening on the bottom of the receptacle.

18. Disposal

INSTRUCTIONS AND INFORMATION REGARDING THE DISPOSAL OF USED PACKAGING MATERIALS

Dispose of packaging material at a public waste disposal site.

DISPOSAL OF USED ELECTRICAL AND ELECTRONIC APPLIANCES

The meaning of the symbol on the product, its accessory or packaging indicates that this product shall not be treated as household waste. Please, dispose of this product at your applicable collection point for the recycling of electrical & electronic equipment waste. Alternatively in some states of the European Union or other European states you may return your products to your local retailer when buying an equivalent new product. The correct disposal of this product will help save valuable natural resources and help in preventing the potential negative impact on the environment and human health, which could be caused as a result of improper liquidation of waste. Please ask your local authorities or the nearest waste collection centre for further details. The improper disposal of this type of waste may fall subject to national regulations for fi nes.

For business entities in the European Union
If you wish to dispose of an electrical or electronic device, request the necessary information from your seller or supplier.

Disposal in other countries outside the European Union
If you wish to dispose of this product, request the necessary information about the correct disposal method from local government departments or from your seller.

CE This product meets all the basic EU regulation requirements that relate to it.

Changes to the text, design and technical specifications may occur without prior notice and we reserve the right to make these changes.

19. Technical data

a) Weather station

Air pressure:

Measuring range ..... 500 hPa up to 1100hPa (14.75 inHg up to 32.44 inHg, 374.5 mmHg up to 823.8 mmHg)

Altitude measuring range ..... -200m up to +5000m (-657 ft up to 16404 ft)

Resolution ..... 0.1 hPa (0.003 inHg, 0.08 mmHg)

Accuracy ..... +/- 5 hPa (0.015 inHg, 0.38 mmHg)

Temperature:

Measuring range outdoor temperature ..... -20°C to +60°C

Measuring range indoor temperature ..... -5°C to +50°C

Accuracy ..... +/-1°C or +/-2°F

Resolution ..... 0.1°C or 0.2°F

Air humidity:

Display range ..... 0% to 99% relative air humidity

Accuracy ..... +/-5% (in a range from 25% to 80%

Resolution 1%

General information:

Dimensions ..... 134 x 185 x 58mm (H x W x D, incl. base)

PC connection USB1.1

Power supply ..... 4 batteries type AA/mignon

Battery lifetime ..... approx. 6 months

We recommend using the enclosed power pack unit.

b) Power pack unit for the weather station

Input ..... 230V~/50Hz

Output: ..... 7.5V=, 300mA

c) Temperature/air humidity sensor

Temperature:

Measuring range ..... -20°C to +60°C
Accuracy ..... +/- 1°C or +/- 2°F
Resolution ..... 0.1°C or 0.2°F

Air humidity:

Display range ..... 0% to 99% relative air humidity
Accuracy ..... +/-5% (in a range from 25% to 80%)
Resolution 1%

General information:

Transmitting frequency 433MHz
Transmitting cycle ..... approx. every 47 seconds
Dimensions ..... 110 x 60 x 32mm (H x W x D)
Power supply ..... 2 batteries type AA/mignon
Battery lifetime ..... approx. 12 months

d) Wind sensor

Direction accuracy ..... +/- 11.25°
Resolution ..... 22.5°
Speed range ..... 0 to 199.9km/h (199.9 mph, 173.7 knots, 89.3 m/s)
Accuracy ..... +/- (2mph + 5%)
Transmitting cycle ..... approx. every 33 seconds
Transmitting frequency 433MHz
Transmitting cycle ..... approx. every 33 seconds
Power supply ..... 2 batteries type AA/mignon
Battery lifetime ..... approx. 12 months

e) Rain sensor

Precipitation measuring range ..... 0.0 to 1999.9 mm (78.73 inch)
Transmitting frequency 433MHz
Transmitting cycle ..... approx. every 183 seconds
Power supply ..... 2 batteries type AA/mignon
Battery lifetime ..... approx. 18 months

Changes to the text, design and technical specifications may occur without prior notice and we reserve the right to make these changes.

Hereby FAST ČR a.s., declares that this SWS 180 USB is in compliance with the essential requirements and other relevants provisions of Directive 1995/5/EC. The device can be operated freely in the EU.

The full text of the Declaration of Compliance can be found at www.sencor.cz.

20. Appendix A: City codes

City	Code	Zone	DST
Addis Ababa, Ethiopia	ADD	3	NO
Adelaide, Australia	ADL	9.5	SA
Algiers, Algeria	ALG	1	NO
Amsterdam, Netherlands	AMS	1	SE
Ankara, Turkey	AKR	2	SE
Asunción, Paraguay	ASU	-3	SP
Athens, Greece	ATH	2	SE
Atlanta, Ga.	ATL	-5	SU
Austin, Tex.	AUS	-6	SU
Baltimore, Md.	BWI	-5	SU
Bangkok, Thailand	BKK	7	NO
Barcelona, Spain	BCN	1	SE
Beijing, China	BEJ	8	NO
Belgrade	BEG	1	SE
Berlin, Germany	BER	1	SE
Birmingham, Ala.	BHM	-6	SU
Birmingham, England	BHX	0	SE
Bogotá, Columbia	BOG	-5	NO
Bordeaux, France	BOD	1	SE
Boston, Mass.	BOS	-5	SU
Bremen, Germany	BRE	1	SE
Brisbane, Australia	BNE	10	NO
Brussels, Belgium	BRU	1	SE
Bucharest, Romania	BBU	2	SE
Budapest, Hungary	BUD	1	SE
Buenos Aires, Argentina	BUA	-3	NO
Cairo, Egypt	CAI	2	SG
Calcutta, India	CCU	5.5	NO
Calgary, Alba., Can.	YYC	-7	SU
Cape Town, South Africa	CPT	2	NO
Caracas, Venezuela	CCS	-4	NO
Chicago, IL	CGX	-6	SU
Chihuahua, Mexico	CUU	-6	SU
Cincinnati, Ohio	CVG	-5	SU
Cleveland, Ohio	CLE	-5	SU
Columbus, Ohio	CMH	-5	SU
Copenhagen, Denmark	CPH	1	SE
Córdoba, Argentina	COR	-3	NO
Dakar, Senegal	DKR	0	NO
Dallas, Tex.	DAL	-6	SU
Denver, Colo.	DEN	-7	SU
Detroit, Mich.	DTW	-5	SU
Dublin, Ireland	DUB	0	SE
Durban, South Africa	DUR	2	NO
El Paso, Tex.	ELP	-7	SU
Frankfurt, Germany	FRA	1	SE

City	Code	Zone	DST
Glasgow, Scotland	GLA	0	SE
Guatemala City, Guatemala	GUA	-6	NO
Hamburg, Germany	HAM	1	SE
Havana, Cuba	HAV	-5	SH
Helsinki, Finland	HEL	2	SE
Hong Kong, China	HKG	8	NO
Houston, Tex.	HOU	-6	SU
Indianapolis, Ind.	IND	-5	NO
Irkutsk, Russia	IKT	8	SK
Jacksonville, Fla.	JAX	-5	SU
Jakarta, Indonesia	JKT	7	NO
Johannesburg, South Africa	JNB	2	NO
Kingston, Jamaica	KIN	-5	NO
Kinshasa, Congo	FIH	1	NO
Kuala Lumpur, Malaysia	KUL	8	NO
La Paz, Bolivia	LPB	-4	NO
Las Vegas, Nev.	LAS	-8	SU
Lima, Peru	LIM	-5	NO
Lisbon, Portugal	LIS	0	SE
Liverpool, England	LPL	0	SE
London, England	LON	0	SE
Los Angeles, Calif.	LAX	-8	SU
Lyon, France	LYO	1	SE
Madrid, Spain	MAD	1	SE
Manila, Philippines	MNL	8	NO
Marseille, France	MRS	1	SE
Melbourne, Australia	MEL	10	SA
Memphis, Tenn.	MEM	-6	SU
Mexico City, Mexico	MEX	-6	SU
Miami, Fla.	MIA	-5	SU
Milan, Italy	MIL	1	SE
Milwaukee, Wis.	MKE	-6	SU
Minneapolis, Minn.	MSP	-6	SU
Montevideo, Uruguay	MVD	-3	SM
Montreal, Que., Can.	YMX	-5	SU
Moscow, Russia	MOW	3	SK
Munich, Germany	MUC	1	SE
Nairobi, Kenya	NBO	3	NO
Nanjing, China	NKG	8	NO
Naples, Italy	NAP	1	SE
Nashville, Tenn.	BNA	-6	SU
New Delhi, India	DEL	5.5	NO
New Orleans, La.	MSY	-6	SU
New York, N.Y.	NYC	-5	SU
Odessa, Ukraine	ODS	2	SE
Oklahoma City, Okla.	OKC	-6	SU

City	Code	Zone	DST	City	Code	Zone	DST
Omaha, Neb.	OMA	-6	SU	San Jose, Calif.	SJC	-8	SU
Osaka, Japan	KIX	9	NO	Santiago, Chile	SCL	-4	SC
Oslo, Norway	OSL	1	SE	São Paulo, Brazil	SPL	-3	SB
Ottawa, Ont., Can.	YOW	-5	SU	Seattle, Wash.	SEA	-8	SU
Panama City, Panama	PTY	-5	NO	Shanghai, China	SHA	8	NO
Paris, France	PAR	1	SE	Singapore, Singapore	SIN	8	NO
Perth, Australia	PER	8	NO	Sofia, Bulgaria	SOF	2	SE
Philadelphia, Pa.	PHL	-5	SU	St. Louis, Mo.	STL	-6	SU
Phoenix, Ariz.	PHX	-7	NO	Stockholm, Sweden	ARN	1	SE
Pittsburgh, Pa.	PIT	-5	SU	Sydney, Australia	SYD	10	SA
Portland, Ore.	PDX	-8	SU	Tampa, Fla.	TPA	-5	SU
Prague, Czech Republic	PRG	1	SE	Tokyo, Japan	TKO	9	NO
Rangoon, Myanmar	RGN	6.5	NO	Toronto, Ont., Can.	YTZ	-5	SU
Reykjavík, Iceland	RKV	0	NO	Tripoli, Libya	TRP	2	NO
Rio de Janeiro, Brazil	RIO	-3	SB	Vancouver, B.C., Can.	YVR	-8	SU
Rome, Italy	ROM	1	SE	Vancouver, Canada	VAC	-8	SU
Salvador, Brazil	SSA	-3	NO	Vienna, Austria	VIE	1	SE
San Antonio, Tex.	SAT	-6	SU	Warsaw, Poland	WAW	1	SE
San Diego, Calif.	SAN	-8	SU	Washington, D.C.	DCA	-5	SU
San Francisco, Calif.	SFO	-8	SU	Zurich, Switzerland	ZRH	1	SE

21. Appendix B: DST codes

The DCS codes are settings for switching between daylight savings time and normal time. Among other things, they are required to calculate the sunrise/sunset times correctly.

Please observe the table in Appendix A for this purpose.

SA = Australia
SB = South Brazil (changes each year, however)
SC = Chile DST
SE = Standard Europe
SG = Egypt DST
SH = Havana, Cuba
SI = Iraq, Syria
SK = Irkutsk, Moscow
SM = Montevideo, Uruguay
SN = Namibia
SP = Paraguay
SQ = Iran (changes each year, however)
ST = Tasmania
SU = Standard USA/America
SZ = New Zealand
NO = No switching between daylight savings time/normal time
ON = Always add one hour to local time (+1h)