sygonix®

GB **Operating Instructions**

Wi-Fi weather station with large TFT colour display

Item No. 2739814

CE

1 Table of contents

2   Introduction

Dear customer,

Thank you for purchasing this product.

If there are any technical questions, please contact: www.conrad.com/contact

3   Intended use

The weather station is used to display various readings, such as indoor/outdoor temperature and humidity, air pressure, precipitation, wind speed, wind direction, UV index and light intensity. It can be connected to the Internet via Wi-Fi.

The data measured by the outdoor sensor are wirelessly transferred to the weather station.

Furthermore, the weather station calculates a weather forecast and displays it using graphical symbols on the display.

You can also register your weather station on various weather websites, such as ecowitt.net, Wunderground.com, etc., and operate it using the "**WSView Plus**" app. A free account with the respective weather service is required to use the app.

Readings can be stored on the product's microSD card (max. 32 GB, not included) or transferred to a weather website.

When data is transferred to ecowitt.net, you can receive alerts via e-mail through the website.

The weather station is powered via the supplied USB power adapter and the dedicated USB cable.

The outdoor sensor is powered via the supplied power adapter or the built-in solar cell. Two AA/Mignon batteries are used as a backup power source.

The weather station is intended for indoor use only. Do not use it outdoors. Contact with moisture must be avoided under all circumstances. The outdoor sensor and the power adapter have an IP44 and IP68 protection class, respectively. Therefore, both units are suitable for outdoor use.

Using the product for purposes other than those described above may damage the product. Improper product use can cause a short circuit, fire, electric shock, other hazards.

This product complies with statutory, national and European regulations. For safety and approval purposes, you must not rebuild and/or modify the product.

Read the instructions carefully and store them in a safe place. Always provide these operating instructions when giving the product to a third party.

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4   Features and functions

4.1 Weather station

- 7" TFT colour display
- Powered by a power adapter (included)
- Time/date display with NTP (Network Time Protocol), manual time setting and automatic summer time changeover
- Selectable 12/24-hour time display format
- Indoor temperature, indoor humidity and air pressure display
- Outdoor sensor readings display
- Up to 8 channels per sensor type, depending on the respective sensor
- Temperature display can be switched to degrees Celsius (°C) or degrees Fahrenheit (°F)
- Maximum and minimum memory for indoor/outdoor temperature, indoor/outdoor humidity, wind speed, wind direction, precipitation, UV index and light intensity
- Weather forecast
- Air pressure history display for the last 12 hours
- Alarm function for wind speed, rainfall, indoor/outdoor temperature, indoor/outdoor humidity, etc. (above or below certain adjustable limits)
- "Low battery" display for the outdoor sensor
- Desktop or wall mounting
- LC display backlight
- Connectivity to various weather sites.
- Added functionality through the optional "**WSView Plus**" app
- Designed for use in dry, indoor areas

4.2 Outdoor sensor

- 7-in-1 outdoor sensor (temperature, humidity, wind speed, wind direction, precipitation, UV index, light intensity)
- Powered by a built-in solar cell or the power adapter (included); 2 AA/Mignon batteries are used as backup power source
- Wireless transmission of measurements to the weather station
- Mounting with the built-in rod/pole mount
- Designed for outdoor use

5   Scope of supply

- Weather station
- USB power adapter (weather station)
- USB cable for power supply
- Outdoor sensor

- Power adapter (outdoor sensor)
- 10 m connection cable (outdoor sensor)
- Operating instructions

6   Latest product information

Download the latest product information at www.conrad.com/downloads or scan the QR code shown. Follow the instructions on the website.

7   Explanation of symbols

The following symbols appear on the product/device or in the text:

This symbol warns of hazards that can lead to injury.

This symbol warns of a dangerous voltage which can lead to injuries due to electric shock.

The product should only be used in dry, indoor locations. It must not get damp or wet.

The product is designed according to Protection Class II.

Pay attention to the operating instructions!

8 Safety instructions

⚠️ **Read the operating instructions carefully and especially observe the safety information. If you do not follow the safety instructions and information on proper handling, we assume no liability for any resulting personal injury or damage to property. Such cases will invalidate the warranty/ guarantee.**

8.1 General

- This product is not a toy. Keep it out of the reach of children and pets.
- Do not leave packaging material lying around carelessly. It may become a dangerous plaything for children.
- Should you have any questions or concerns after reading this document, please contact our technical support or a professional technician.
- Maintenance, modifications and repairs must only be carried out by a technician or a specialist repair centre.

8.2 Handling

- Please handle the product carefully. Impact, shocks or a fall even from a low height can damage the product.

8.3 Operating environment

- Do not expose the product to any mechanical stress.
- Protect the product from extreme temperatures, strong jolts, flammable gases, vapours and solvents.
- The weather station is suitable only for dry indoor areas. Do not expose the product to direct sunlight, strong heat, cold, humidity or moisture; otherwise it may be damaged.
- The outdoor sensor is designed for outdoor use. It must not be used in or under water, this will destroy it.
- Never switch the device on immediately after taking it from a cold into a warm environment. This may cause condensation to form, which can destroy the product. Allow the product to reach room temperature before using it.
- Avoid using the product near strong magnetic or electromagnetic fields, transmitter aerials or HF generators. Otherwise, the product may not function properly.

8.4 Operation

- Consult an expert when in doubt about the operation, safety or connection of the device.
- If it is no longer possible to operate the product safely, take it out of operation and protect it from any accidental use. DO NOT attempt to repair the product yourself. Safe operation can no longer be guaranteed if the product:
  - is visibly damaged,
  - is no longer working properly,
  - has been stored in poor ambient conditions for extended periods or
  - has been subjected to any serious transport-related stress.

8.5 Power adapters

Never attempt to modify the electrical components of the power adapters for the weather station and outdoor sensor. Risk of fatal electric shock!

- Always ensure that the mains plug is properly connected.
- Discontinue use of the device if any electrical components are damaged.
- Do not modify the electrical components.

- Connect the product to an easily accessible socket.
- Only use the included power adapter.
- Only connect the power adapter to a conventional mains socket connected to the public supply grid. Before plugging in the power adapter, check whether the voltage stated on the power adapter complies with the voltage of your electricity supplier.
- Never connect or disconnect power adapters if your hands are wet.
- For safety reasons, always disconnect the power adapter from the mains socket during lightning storms.
- Do not touch the power adapter if there are any signs of damage, as this may cause a fatal electric shock! Proceed as follows:
  - First, cut off the power supply to the mains socket to which the power adapter is connected (switch off the corresponding circuit breaker or remove the safety fuse, and then switch off the corresponding RCD protective switch so that all poles of the mains socket are disconnected).
  - Unplug the power adapter from the mains socket.
  - Use a new power adapter of the same design. Do not use the damaged power adapter again.
- Make sure that the cable is not pinched, kinked or damaged by sharp edges.
- Always lay cables so that nobody can trip over or become entangled in them. Failure to do so could result in injury.
- Consult an expert when in doubt about the operation, safety or connection of the device.

8.6 (Rechargeable) batteries

- Correct polarity must be observed while inserting the (rechargeable) batteries.
- If you do not plan to use the product for an extended period, remove the (rechargeable) batteries to prevent damage from leaking. Leaking or damaged (rechargeable) batteries may cause acid burns if they come into contact with your skin. Therefore, use suitable protective gloves when handling damaged (rechargeable) batteries.
- (Rechargeable) batteries must be kept out of reach of children. Do not leave (rechargeable) batteries lying around, as there is a risk that children or pets may swallow them.
- All (rechargeable) batteries should be replaced at the same time. Mixing old and new (rechargeable) batteries in the device can lead to (rechargeable) battery leakage and device damage.
- (Rechargeable) batteries must not be dismantled, short-circuited or thrown into fire. Never attempt to recharge non-rechargeable batteries. This may cause an explosion!

9   Product overview

9.1 Weather station

A 3-in-1 sensor for temperature, humidity and air pressure

B 17.86 cm (7") TFT LC display

C Touch buttons

D Removable stand

E microSD card slot (for firmware update and backup only)

F Micro USB socket (for firmware update only)

G Power adapter connection

H Wall mounting holes

I No function (for service only)

J No function (for service only)
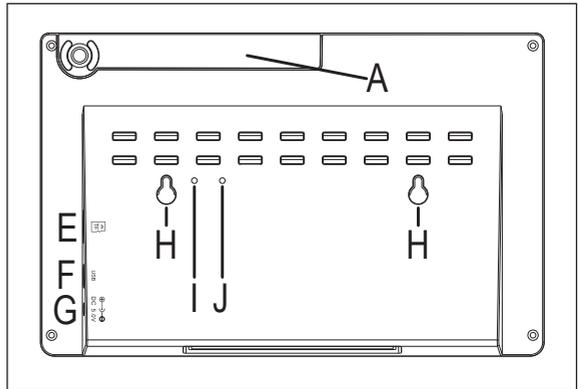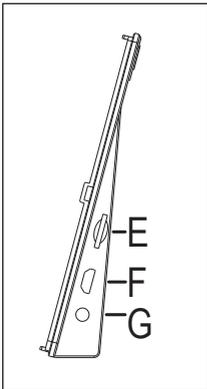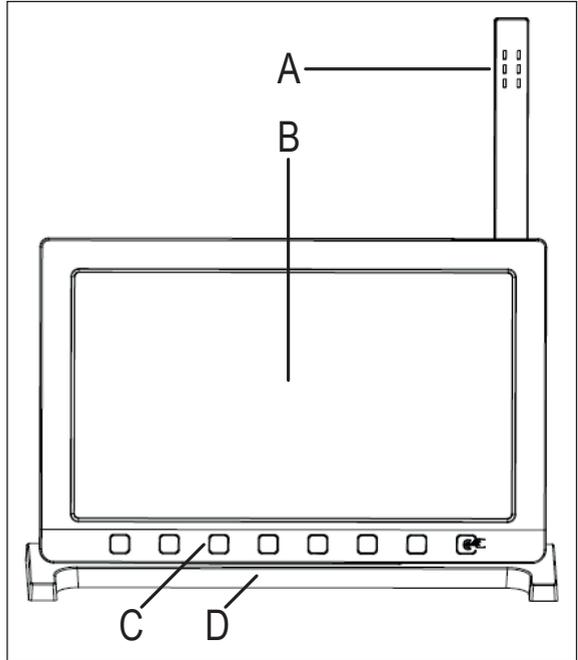
9.2 Outdoor sensor
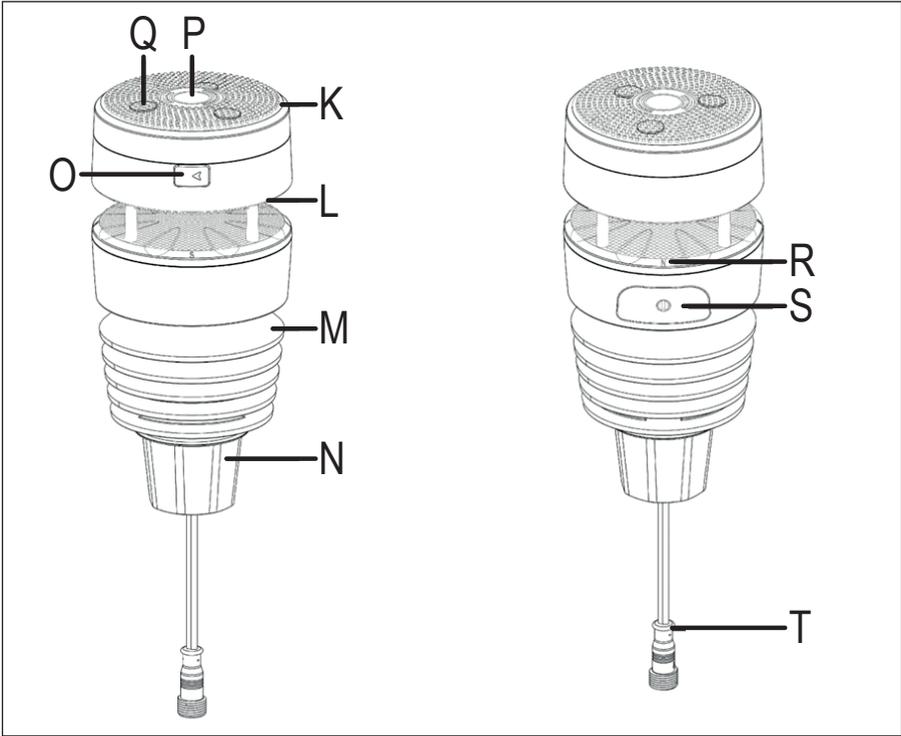
K Solar cell

L Ultrasonic wind sensor

M Temperature and humidity sensor

N Mount (mounting on a pole, pipe or similar with 2.54 cm (1 inch) diameter)

O Micro USB socket (for service only)

P Light and UV sensor, status LED

Q Rain sensor

R North alignment mark

S Battery compartment

T Power adapter connection cable

U "**Reset**" button

V Calibration button (for service only)
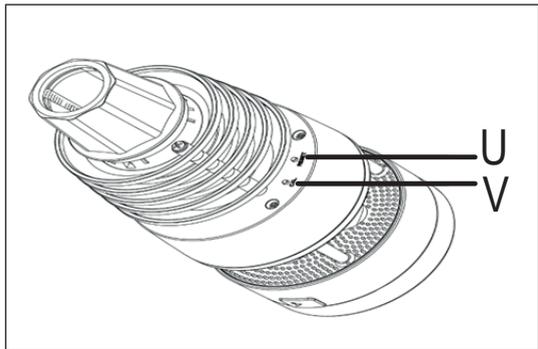
9.3 Display indicators
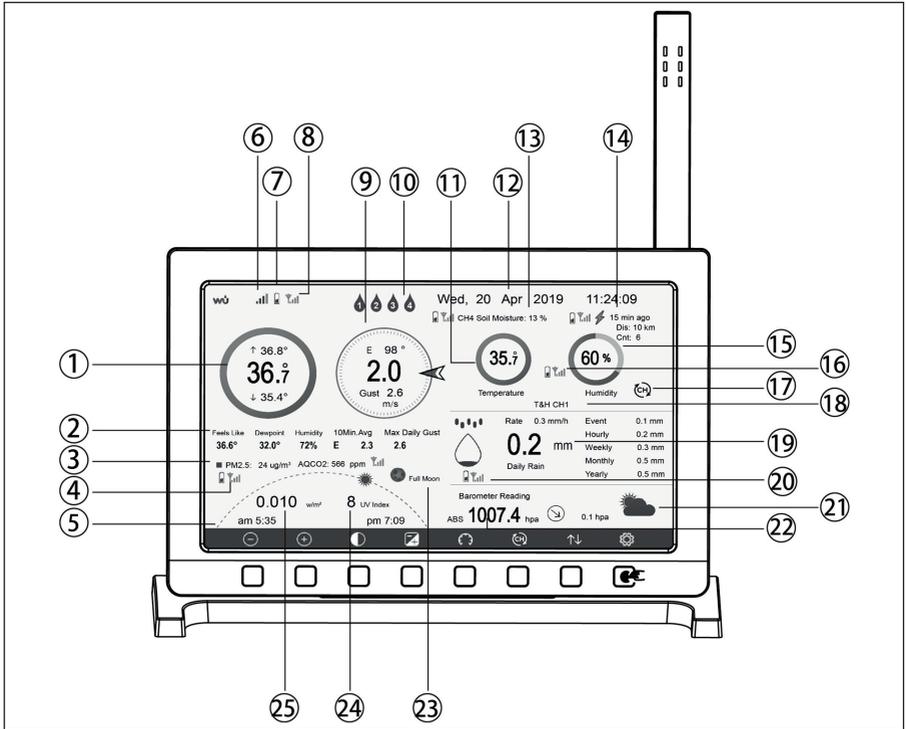
1. Outdoor temperature
2. Feels like; dew point; humidity (outdoor); 10-minute average wind direction; max. daily gusts.
3. PM2.5 concentration (optional sensor)
4. RF signal strength for the PM2.5 sensor (optional)
5. Sunrise/sunset time
6. Wi-Fi signal strength
7. Low battery indicator (for each sensor)
8. RF signal strength for the outdoor sensor
9. Wind direction; wind speed; gust
10. Water leakage alarm (optional sensor)
11. Indoor temperature
12. Date and time
13. Soil moisture (optional sensor)
14. Last detected lightning strikes time/distance, daily display (optional sensor)
15. Humidity (indoor)
16. RF signal strength for the multi-channel temperature and humidity sensor (optional sensor)
17. Multi-channel temperature and humidity sensor cycle display mode icon (optional)
18. Channel number of the multi-channel temperature and humidity sensor (optional)
19. Precipitation (hourly/daily/weekly/monthly/yearly)
20. RF signal strength for the rain sensor (optional sensor)
21. Weather forecast
22. Barometer (air pressure; absolute/relative)
23. Moon phases
24. UV index
25. Light intensity

9.4 Main display icons

9.4.1 Temperature icons

> Please note!
> We have rounded the temperature values slightly for better readability.

Temperature range in degrees Celsius (°C)	Temperature range in degrees Fahrenheit (°F)	Colour ring	Temperature range in degrees Celsius (°C)	Temperature range in degrees Fahrenheit (°F)	Colour ring
< -3.5	< -10	○	10 to 15.5	50 to 60	○
-23.5 to -17.5	-10 to 0	○	15.5 to 21	60 to 70	○
-17.5 to -12	0 to 10	○	21 to 26.5	70 to 80	○
-12 to -6.5	10 to 20	○	26.5 to 32	80 to 90	○
-6.5 to -1	20 to 30	○	32 to 37.5	90 to 100	○
-1 to 4.5	30 to 40	○	37.5 to 43	100 to 110	○
4.5 to 10	40 to 50	○	> 43	> 110	○

9.4.2 Wind direction icons

Humidity range (%)	Icon
Current wind direction icon	
10-minute average wind direction icon	

9.4.3 Humidity icons

Humidity range (%)	Colour ring	Humidity range (%)	Colour ring	Humidity range (%)	Colour ring
0%; no signal		30 to 40		70 to 80	
1 to 10		40 to 50		80 to 90	
10 to 20		50 to 60		90 to 99	
20 to 30		60 to 70		100%	

9.4.4 Hourly rainfall icons

Please note!
We have rounded the measurements slightly for better readability.

Hourly precipitation (cm)	Hourly precipitation (inch)	Icon	Hourly precipitation (cm)	Hourly precipitation (inch)	Icon
0.0	0.0		1.5 to 2.0	0.6 to 0.8	
0 to 0.5	0 to 0.2		2.0 to 2.5	0.8 to 1.0	
0.5 to 1.0	0.2 to 0.4		2.5 to 3.0	1.0 to 1.2	
1.0 to 1.5	0.4 to 0.6		3.0 to 3.5	1.2 to 1.4	

9.4.5 Weather forecast icons

The forecast icon is based on the rate of change of air pressure. Please allow at least one month for the weather station to learn the barometric pressure over time.

Weather	Icon	Air pressure
Sunny		Pressure increases for a sustained period of time
Partly Cloudy		Pressure increases slightly, or initial power up of the weather station
Cloudy		Pressure decreases slightly
Rainy		Pressure decreases for a sustained period of time
Stormy		Pressure decreases rapidly
Snowy		Pressure decreases for a sustained period of time and temperature is below freezing (≤ 0 °C)
Blizzardy		Pressure decreases rapidly and temperature is below freezing (≤ 0 °C)

When the outdoor temperature is below 0 °C and rainy or stormy weather is forecast, the display shows "Snowy" and "Blizzardy".

9.4.6 Weather warning icon

Humidity range (%)	Icon
The lightning icon is displayed when the dew point exceeds 21 °C (70 °F). This icon indicates that there is a chance of a thunderstorm forming.	

9.4.7 Moon phase icons

Moon phase	Icon	Moon phase	Icon	Moon phase	Icon
Day 1		Day 10		Day 19	
Day 2		Day 11		Day 20	
Day 3		Day 12		Day 21	
Day 4		Day 13 Full moon		Day 22	
Day 5		Day 14		Day 23	
Day 6		Day 15		Day 24	
Day 7		Day 16		Day 25	
Day 8		Day 17		Day 26 New moon	
Day 9		Day 18			

10 Preparation for mounting

Select an appropriate installation location. The following points/criteria must be noted.

10.1 Wireless signal transmission range

The transmission range of the wireless signal between the outdoor sensor and the weather station is up to 150 m under optimal conditions. However, these 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. The weather station is usually set up in the house, and the outdoor sensor is installed on or in a carport, a garage or in the garden. Different objects have a different impact on the range; therefore, no specific range can be guaranteed. The range should be sufficient for use in a detached house. If the weather station does not receive any data from the outdoor sensor (despite new batteries being inserted), reduce the distance between the weather station and the outdoor sensor. The range can be reduced considerably due to:

- Walls and reinforced concrete ceilings
- Coated/vapour-deposited insulating glass panes, aluminium windows, etc.
- Vehicles
- Trees, bushes, soil and rocks
- Proximity to metal and conductive objects (e.g. radiators)
- Proximity to human bodies
- Broadband interference, e.g. in residential areas (DECT telephones, mobile phones, radio-controlled head-phones, radio-controlled speakers, other weather stations operating on the same frequency, baby monitoring systems, etc.)
- Proximity to electric motors, transformers, power adapters
- Proximity to mains sockets and network cables
- Proximity to poorly shielded or uncovered computers or other electrical appliances
- Other devices operating on the same transmission frequency (433 or 868 MHz)

The following table shows the effect that different materials have on wireless transmission when placed between the weather station and the outdoor sensor.

Obstacle	Reduction in signal strength (in %)
Glass (not wired or metal-coated)	5 – 15%
Plastic	10 – 15%
Wood	10 – 40%
Brick	10 – 40%
Concrete	40 – 80%
Metal	90 – 100%

Choose the installation site of the outdoor sensor in a way that allows measuring precipitation. The outdoor sensor must be exposed to the sky to ensure that the precipitation is measured accurately. There should be no obstacles in the immediate vicinity. Wind must be able to blow onto the wind sensors on all sides to ensure accurate wind readings. Avoid areas with downdraughts or turbulence (e.g. behind chimneys or between close-spaced roofs).

10.2 Tips for safe installation

Metal objects and the tops of tall buildings are susceptible to lightning strikes. Never install the outdoor sensor during storms. Wait for a dry day with good weather.

Use fall protection equipment such as a safety harness and a net in the following scenarios:

- When you are working on/above water or other areas into which you may sink in the event of a fall (e.g. a pond), regardless of your height above the ground.
- Above 1 m: When you are working on a stable surface, staircases/landings and wall openings.
- Above 3 m: When you are working on a roof.
- All other surfaces that are more than 2 m above the ground.

- Secure any holes in floors, ceilings and roofs with protective equipment for the entire duration of the installation process!
- Secure materials and tools to the surface to prevent them from falling off!
- The area below the installation surface must be cordoned off when you are working.
- Mark the hazardous area below the installation surface with warning signs such as "Warning, roof work in progress", or close off the area to unauthorised personnel.
- If you are mounting the detachable parts in an elevated position, secure them with a separate device in addition to the mounting mast.

11 Mounting the outdoor sensor and putting it into operation

Before installing the weather station on the place of operation, we recommend placing the weather station at a temporary location with easy access for one week. This applies more to the outdoor sensor, as the indoor station is usually accessible anyway. This will let you check all functions, ensure proper operation, and get familiar with the weather station and its calibration procedures.

You will need a cross-head screwdriver (size PH0) and a medium flat-head screwdriver to perform the installation.

11.1 Inserting the batteries in the outdoor sensor

The two batteries serve as backup power source for the outdoor sensor. The solar cell and the included power adapter are the principal power sources.

When the outdoor temperature drops below 0 °C for a sustained period, we recommend using lithium batteries for the outdoor sensor instead of alkaline ones.

- Unscrew the slotted screw fixing the battery cover **(S)** using a flat-head screwdriver.

  The screw secures the cover.
- Remove the battery cover.
- Insert 2 AA batteries (not included) into the battery compartment.

  Ensure the polarity is correct. Observe the corresponding marks on the top of the battery compartment.
- Replace the cover and carefully screw the slotted screw back in.
- The status LED (on top of the sensor) **(P)** lights up for about 3 seconds and then normally flashes every 8.8 seconds (sensor transmission update period).
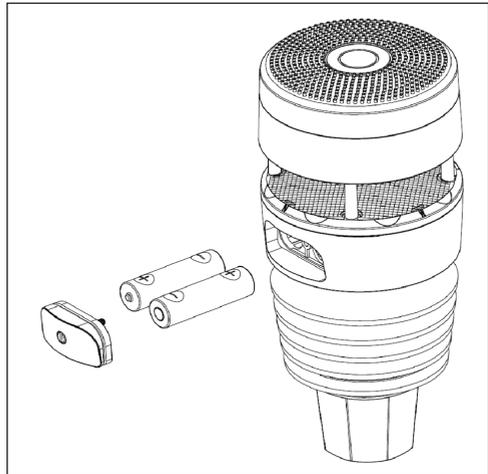
11.2 Attaching the rubber ring

- Unless already mounted, place the rubber ring on the outdoor sensor before mounting the outdoor sensor.
  - → This ring protects the outdoor sensor from moisture.

  See figure on the right.
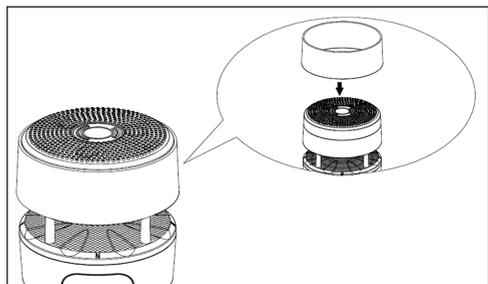
11.3 Installing the outdoor sensor

The outdoor sensor can be mounted on a pipe, pole, rod, etc., with a diameter of 2.54 cm (1 inch).

Important!

Ensure the pipe (or similar) is level before mounting the sensor on it. Otherwise, this may damage the sensor and result in inaccurate readings. If necessary, use a spirit level for alignment.

- When mounting the outdoor sensor, ensure it is aligned correctly.
- Orient the sensor so that the north alignment mark **(N)** points north. Use a compass if necessary.
  - → Failing this, wind direction will not be determined correctly.
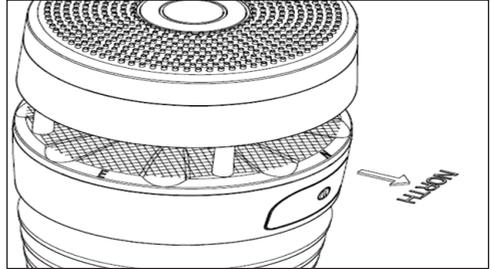
- First, loosen the fixing nut on the underside of the outdoor sensor **(N)**.

  Normally, it is enough if it is screwed on about halfway.
- Push the sensor onto the pipe (or similar) as far as it will go.

Caution!

When the connection cable for the power adapter **(T)** should be laid in the pipe (or similar), unscrew the fixing nut **(N)** completely and route the connection cable **(T)** inside. This is how you feed the cable into the pipe.

The connection cable for the power adapter must also be drawn in the pipe and connected to the outdoor sensor before mounting the sensor. Please refer to the next chapter.

- Tighten the fixing nut **(N)** by hand until the sensor is secure.

Pole OD : 1 inch
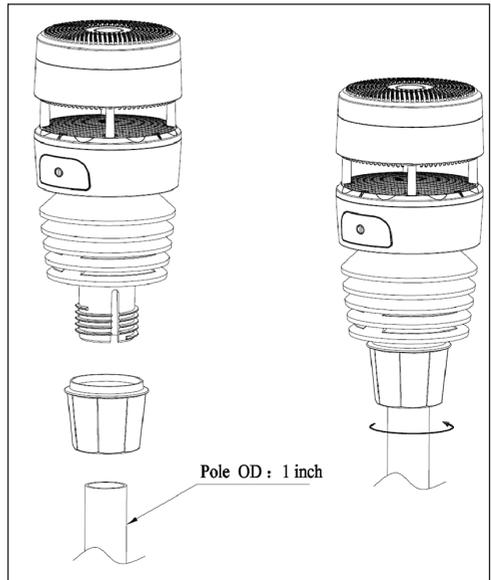
11.4 Connecting the power adapter

The package includes a power adapter for the outdoor sensor. You will not need it during the summer, as the sensor is also powered by the built-in solar cell.

On the other hand, the sensor is exposed to snowy and icy weather conditions in winter. The sensor has an integrated heater to counter weather impact, but the power adapter is required to supply it with power. The heater turns on automatically when the temperature drops below 5 °C (40 °F) and off again when the temperature rises above 10 °C (50 °F).

The heater enables the outdoor sensor to deliver accurate measurements even in winter.

- Connect one end of the connection cable (included) to the outdoor sensor **(T)** and the other end to the power adapter.

  The cable has a plug and a socket. Connect the socket to the sensor cable and the two-pin plug to the power adapter.

  The design of the plug and socket allows only one orientation for plugging in.

- Tighten the locking nut on the socket and plug by hand until it is secure.

- Mount the power adapter in a suitable place. It should be well ventilated. With its IP68 protection class, the power adapter can be mounted outdoors. We recommend that you install it in a safe place.

  Keep in mind that the mains plug of the power adapter can only be used in protected outdoor areas.
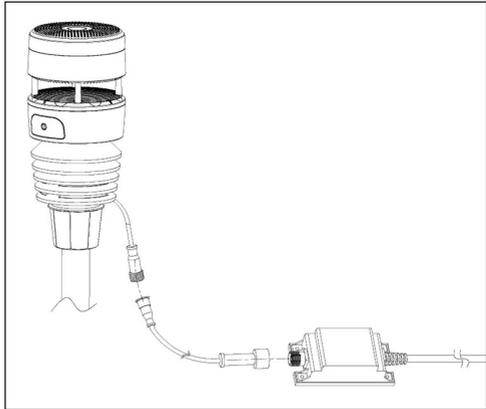
If expansion plugs are needed to fix the power adapter at the chosen place of installation (depending on the surface texture), mark the exact position of the four drill holes through the mounting holes of the power adapter.

Ensure that no existing cables or pipes (including water pipes) are damaged when drilling mounting holes or securing screws.

- Plug the power adapter into a standard mains socket connected to the public supply grid.

12 Setting up and operating the weather station

To ensure optimal reception, the weather station should not be placed next to other electronic devices, cables or metal objects. The weather station and outdoor sensor should be at least 2 m away from sources of interference. Obstacles that impair wireless communication between the two devices (e.g. buildings) should also be avoided. The maximum range of the wireless signal is approximately 150 m. The range decreases when obstacles are present.

12.1 Setting up

The weather station can be stood on a level, stable, adequately large indoor surface using the detachable stand on its underside. A suitable mat should be used to prevent scratch marks on furniture.

- Unless already mounted, attach the stand to the underside of the weather station at the dedicated spot.

12.2 Mounting on the wall

You can also hang the weather station on a wall using the hanging holes on the back **(H)**.

- Screw two suitable screws into the wall with the correct spacing. Ensure sufficient hole spacing of approx. 90 mm.

If expansion plugs are needed to fix the weather station at the chosen place of installation (depending on the surface texture), mark the exact position of the four drill holes.

Ensure that no existing cables or pipes (including water pipes) are damaged when drilling mounting holes or securing screws.

- Hang the weather station on the hanging screws.

12.3 Inserting the memory card

For firmware updates (if available) or backup (see chapter "14.5.5 Backup") of the history data, you must insert a microSD card into the weather station. The card must be formatted as FAT32.

- Insert the microSD card (contact pins first) into the SD card slot **(E)** until the card snaps into place. The SD card should be oriented with the contacts facing the display **(B)**.
- To remove the microSD card, push it further into the slot until it unlocks from its mechanical lock. Then pull the card out of the card slot **(E)**.

12.4 Connecting the power adapter

- Take the USB power adapter and the USB cable with the low-voltage round plug.
- Insert the low-voltage round plug of the power adapter into the corresponding socket **(G)** of the weather station.
- Plug the USB cable into the USB socket of the USB power adapter.
- Plug the power adapter into a standard mains socket connected to the public supply grid.

13 Operation

The weather station powers on automatically when the power adapter is plugged in. This takes just a few seconds. The display is activated immediately. It also starts searching for indoor and outdoor sensor data reception. This can take up to 3 minutes.

13.1 Main display controls

■ The weather station is operated using the 8 touch buttons below the display.

■ The buttons' function depends on the current menu.

■ The respective button's current function is shown at the very bottom of the display above the buttons.
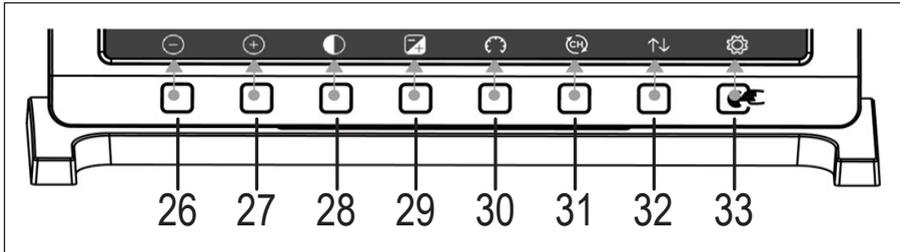
■ The table below gives a brief description of functions of all buttons.

| Number	Icon	Explanation
26		**Brightness setting** "**-**" Press this button to decrease the display brightness.
27		**Brightness setting** "**+**" Press this button to increase the display brightness.
28		**Backlight on/off** Press this button to turn the display backlight on or off.
29		**Change background** Press this button to choose between light or dark background of the display.
30		**Absolute/relative air pressure** Press this button to toggle between absolute and relative air pressure display.
31		**Channel selection** Press this button to adjust the display between indoor temperature and humidity, multi-channel temperature and humidity or automatic switching.
32		**History button** Press this button once to display the minimum/maximum record and twice to enter the history mode.
33		**Settings** Press this button to enter the settings mode.

13.1.1 Change background (29)

Use the ◨ button **(29)** to toggle between the light and dark display background.

Dark theme

Light theme
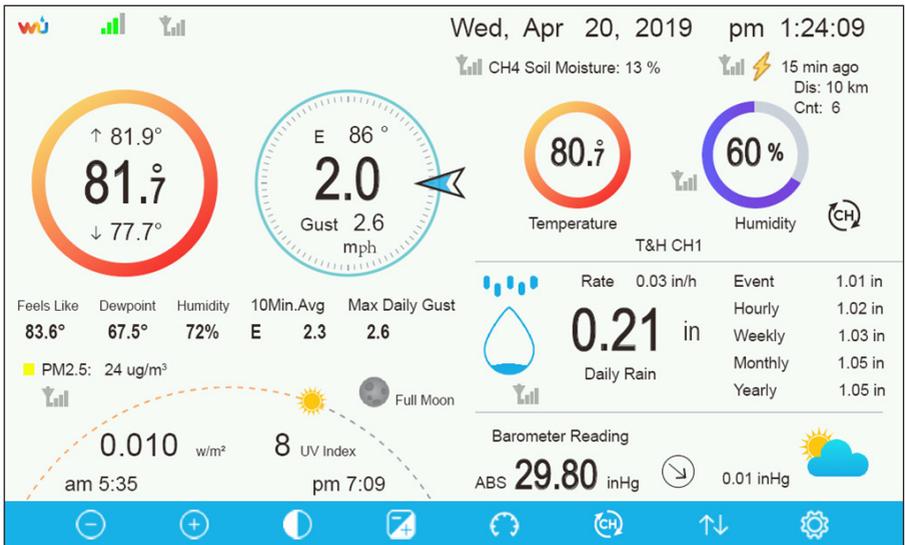
13.1.2 Channel selection and automatic mode (31)

The weather station has 8 channels for additional sensors, such as the outdoor sensor.

■ When multiple wireless sensors are connected to the weather station, while in normal mode, press the ⊚ button **(31)** to toggle the display in the following sequence: Indoor, Channel 1, Channel 2 to Channel 8 and automatic switching of the display.

  Please note that if, for example, only Channel 2 is received, the unit automatically skips Channel 1 and only toggles between the indoor sensors and taught-in sensors.

■ In automatic mode, the channel icon (like button 31) is displayed next to the indoor humidity. The channel will switch every 5 seconds.

> Note: For multi-channel sensors, only the current data of each sensor can be viewed on the console, and no history data will be saved or uploaded to any weather servers.

13.2 History (32)

13.2.1 Viewing and resetting maximum/minimum values

■ From the main display, press the ▦ button **(32)** once to view and reset minimum and maximum values.

Max/Min		
■ Indoor Temperature 78.4°F 12/5/2018 AM 4:59 77.7°F 12/5/2018 AM 6:19	■ Indoor Humidity 65% 12/5/2018 AM 4:59 63% 12/5/2018 AM 5:44	■ Hourly 0.00in/h 12/5/2018 AM 4:59 ■ Daily Rain 0.00in 12/5/2018 AM 4:59
■ Outdoor Temperature 140.0°F 12/5/2018 AM 5:03 -40.0°F 12/5/2018 AM 5:30	■ Outdoor Humidity 99% 12/5/2018 AM 5:00 10% 12/5/2018 AM 5:25	■ Weekly Rain 0.00in 12/5/2018 AM 4:59 ■ Monthly Rain 0.00in 12/5/2018 AM 4:59 ■ Yearly Rain 0.00in 12/5/2018 AM 4:59
■ Dew Point 125.2°F 12/5/2018 AM 5:00 -39.3°F 12/5/2018 AM 5:32	■ Feels Like 190.0°F 12/5/2018 AM 5:24 -40.0°F 12/5/2018 AM 5:30	■ Wind 0.0mph 12/5/2018 AM 4:59 ■ Gust 0.0mph 12/5/2018 AM 4:59
■ ABS Barometer 29.79inHg 12/5/2018 AM 6:03 29.69inHg 12/5/2018 AM 5:17	■ REL Barometer 29.79inHg 12/5/2018 AM 6:03 29.69inHg 12/5/2018 AM 5:17	■ Solar Rad. 0.000w/m² 12/5/2018 AM 4:59 ■ UVI 0 12/5/2018 AM 6:03
⊕ ⊖	↵ ↑ ↓	↕ ↩

■ The table below gives a brief description of functions of the buttons available in this menu.

Number	Icon	Explanation
34		**Selection button** Press this button to select the maximum/minimum record to be deleted.
35		**Selection button** Press this button to select the maximum/minimum record to be deleted.
36		**Enter button** With the required maximum/minimum record selected, pressing this button opens the query window that prompts you to delete the maximum/minimum record. Then press the button ↑ or ↓ to select Yes or No. To confirm your selection, press the button ⊕ or ⊖.
37		**Up arrow** Press this button to scroll through the individual values.
38		**Down arrow** Press this button to scroll through the individual values.
39		**History button** Press this button to toggle between maximum/minimum values, history mode and graph display.
40		**Back button** Press this button once to go back to the main display.

13.2.2 History mode

■ From the weather station's main display, press the ▣ button **(32)** and **(39)** twice to enter the history mode.

No	Time	Indoor Temperature (°F)	Indoor Humidity (%)	Outdoor Temperature (°F)	Outdoor Humidity (%)	Dew Point (°F)	Feels Like (°F)	Wind (mph)
2689	12/5/2018 AM 6:40	77.7	65	68.9	47	47.8	68.9	2.5
2690	12/5/2018 AM 6:45	77.7	65	68.9	47	47.8	68.9	2.5
2691	12/5/2018 AM 6:50	77.7	65	68.9	47	47.8	68.9	2.2
2692	12/5/2018 AM 2:40	77.9	65	68.9	47	47.8	68.9	2.5
2693	12/5/2018 AM 2:45	77.9	65	68.9	47	47.8	68.9	2.2
2694	12/5/2018 AM 2:50	77.9	65	68.9	47	47.8	68.9	2.2
2695	12/5/2018 AM 2:55	77.9	65	68.9	46	47.3	68.9	2.2
2696	12/5/2018 AM 3:00	77.9	65	68.9	46	47.3	68.9	2.2
2697	12/5/2018 AM 3:05	77.9	65	68.9	46	47.3	68.9	2.2
2698	12/5/2018 AM 3:10	77.9	65	68.9	46	47.3	68.9	2.2
2699	12/5/2018 AM 3:15	77.9	65	68.9	46	47.3	68.9	2.7
2700	12/5/2018 AM 3:20	77.9	64	68.9	46	47.3	68.9	2.5
2701	12/5/2018 AM 3:25	77.9	65	68.9	46	47.3	68.9	2.2
2702	12/5/2018 AM 3:30	78.1	65	68.9	46	47.3	68.9	2.2
2703	12/5/2018 AM 3:35	78.6	65	68.9	46	47.3	68.9	2.2
2704	12/5/2018 AM 3:40	78.6	65	68.9	46	47.3	68.9	2.2

■ The table below gives a brief description of functions of the buttons available in this menu.

Number	Icon	Explanation
41		**Selection button** Press this button to delete all history records.
42		**Page selection button** Press this button to call up a specific page of the history log. Each page contains 16 records.
43	←	**Left arrow** Press this button to scroll the display left.
44	→	**Right arrow** Press this button to scroll the display right.
45	↑	**Page up** Press this button to scroll up one page.
46	↓	**Page down** Press this button to scroll down one page.

Number	Icon	Explanation
47	↑↓	**History button** Press this button to toggle between maximum/minimum values, history mode and graph display.
48	↩	**Back button** Press this button once to go back to the previous display.

13.2.3 Deleting history records

■ While in history mode, pressing the ▤ button **(41)** calls up the query window that prompts you to delete history records.

No	Time	Indoor Temperature (°F)	Indoor Humidity (%)	Outdoor Temperature (°F)	Outdoor Humidity (%)	Dew Point (°F)	Feels Like (°F)	Wind (mph)
2721	12/5/2018 AM 5:13	78.4	65	24.8	54	10.4	24.8	0.0
2722	12/5/2018 AM 5:18	78.4	65	59.0	73	50.4	59.0	0.0
2723	12/5/2018 AM 5:23	78.4	65	87.8	89	84.2	111.7	0.0
2724	12/5/2018 AM 5:28				19	69.8	123.8	0.0
2725	12/5/2018 AM 5:33				39	-39.3	-22.0	0.0
2726	12/5/2018 AM 5:38				58	0.1	12.2	0.0
2727	12/5/2018 AM 5:43				74	33.4	41.0	0.0
2728	12/5/2018 AM 5:48				95	77.2	78.8	0.0
2729	12/5/2018 AM 5:52				24	67.6	113.0	0.0
2730	12/5/2018 AM 5:57				42	--	-36.4	0.0

⚠ Clear the history record?

Yes   No

⊕ ⊖   ↑   ↓

■ Then press the button ⬆ **(45)** or ⬇ **(46)** to select Yes or No.

■ To confirm your selection, press the button ⊕ or ⊖.

13.2.4 Viewing a specific history page

While in history mode, press the ▣ button **(42)** to enter the page selection mode.

No	Time	Indoor Temperature (°F)	Indoor Humidity (%)	Outdoor Temperature (°F)	Outdoor Humidity (%)	Dew Point (°F)	Feels Like (°F)	Wind (mph)
2721	12/5/2018 AM 5:13	78.4	65	24.8	54	10.4	24.8	0.0
2722	12/5/2018 AM 5:18	78.4	65	59.0	73	50.4	59.0	0.0
2723	12/5/2018 AM 5:23	78.4	65	87.8	89	84.2	111.7	0.0
2724	12/5/2018 AM 5:28	78.4	65	123.8	19	69.8	123.8	0.0
2725	12/5/2018 AM 5:33				89	-39.3	-22.0	0.0
2726	12/5/2018 AM 5:38				58	0.1	12.2	0.0
2727	12/5/2018 AM 5:43		00171		74	33.4	41.0	0.0
2728	12/5/2018 AM 5:48				95	77.2	78.8	0.0
2729	12/5/2018 AM 5:52				24	67.6	113.0	0.0
2730	12/5/2018 AM 5:57				42	--	-36.4	0.0
2731	12/5/2018 AM 6:24	77.4	64	-4.0	71	-11.2	-4.0	0.0

View data on page 1 to 171

Ok   Cancel

⊕ ⊖ ← → ↑ ↓

- Press the button ◄ **(43)** or ► **(44)** to select the page number digit.
- Press the button ▣ or ▣ to change the number.
- Press the button ▲ **(45)** or ▼ **(46)** to toggle between the page number input field and the two confirmation buttons.
- Confirm the required page number by pressing the button ▣ or ▣.

13.2.5 Viewing the graph

■ From the weather station's main display, press the ▧ button **(32)**, **(39)**, and **(47)** three times to go to the graph view.

■ Press the ▣ button to change the data display resolution (12/24/48/72 hours).
■ Press the � button to display the respective graph of the following data:
  → Indoor and outdoor temperature
  → Feels like and dew point
  → Indoor and outdoor humidity
  → Wind speed and gusts
  → Wind direction
  → UV index
  → Light intensity
  → Hourly and daily precipitation
  → Barometer (air pressure; absolute/relative)

13.2.6 Viewing the data for each channel

When using optional sensors, their readings are shown on the data display of the individual channels.

> The mode is active only if an optional sensor is connected to the weather station. If not, you cannot access this page.

■ From the weather station's main display, press the ▦ button **(32)**, **(39)**, and **(47)** three times to enter the data display of the individual channels.

Wh45		T&H CH1	T&H CH2	T&H CH3	T&H CH4	T&H CH5	T&H CH6
T&H 25.4 °C 34 %	CO2 589 ppm	23.1 °C 42 %	22.6 °C 43 %	22.8 °C 42 %	22.6 °C 43 %	22.7 °C 43 %	22.9 °C 43 %
PM2.5 15 ug/m³ Moderate AQI 24H 58 58	PM10 15 ug/m³ Good AQI 24H 14 15	T&H CH8 22.7 °C 43 %	Soil CH1 1 %	Soil CH2 0 %	Soil CH3 0 %	Soil CH4 1 %	Soil CH5 0 %
Soil CH6 0 %	Soil CH7 0 %	Soil CH8 0 %	PM2.5 CH1 23 ug/m³ Moderate AQI 24H 74 70	PM2.5 CH2 32 ug/m³ Moderate AQI 24H 93 99	PM2.5 CH3 41 ug/m³ Poor AQI 24H 115 102	Water CH2 Normal	Thunder -- min ago Dis Cnt 14 km 0
WN34 CH1 22.5 °C	WN34 CH2 24.0 °C	WN34 CH3 23.1 °C	WN34 CH4 22.0 °C	WN34 CH5 22.0 °C	WN35 CH1 15 %	WN35 CH2 62 %	WN35 CH3 0 %
⊕	⊖	←	→	↑	↓	↑↓	↺

■ Press the button ⬆ or ⬇ to select any sensor of choice.
  → The highlighted sensor name turns green.
■ Pressing the button 🔍 or 🔍 calls up the keyboard to enter a sensor name.
■ Press ⬆ ⬇ ⬅ ➡ to select the individual characters.
■ Press ⏎ to apply the character.
■ Press ↩ to go back to the individual channel data display page.
■ Press the ➡ button to scroll down.

14 Configuration and settings

Before configuring the weather station, we recommend that you first set the language of the weather station. Please refer to chapter "14.5 Factory defaults" for more information on how to set the language.

14.1 Basic settings

■ From the main display, press the ⚙ button **(33)** once to open the settings.

■ The table below gives a brief description of functions of the buttons available in this menu.

Number	Icon	Explanation
49		**Selection button** Press this button to set or scroll through the desired value.
50		**Selection button** Press this button to set or scroll through the desired value.
51		**Left arrow** Press this button to select the value to be set.
52		**Right arrow** Press this button to select the value to be set.
53		**Up arrow** Press this button to navigate through the individual settings and change an active option field/query window.

Number	Icon	Explanation
54		**Down arrow** Press this button to navigate through the individual settings and change an active option field/query window.
55		**History button** Press this button to toggle between basic settings, alarm settings, calibration and factory defaults.
56		**Back button** Press this button once to return to the previous display.

14.1.1 Wi-Fi settings

- Press the button ⬆ **(54)** or ⬇ **(53)** to navigate to the Wi-Fi search.
- The menu item is highlighted. Press the button ◙ **(49)** or ◙ **(50)** to go to the Wi-Fi search.
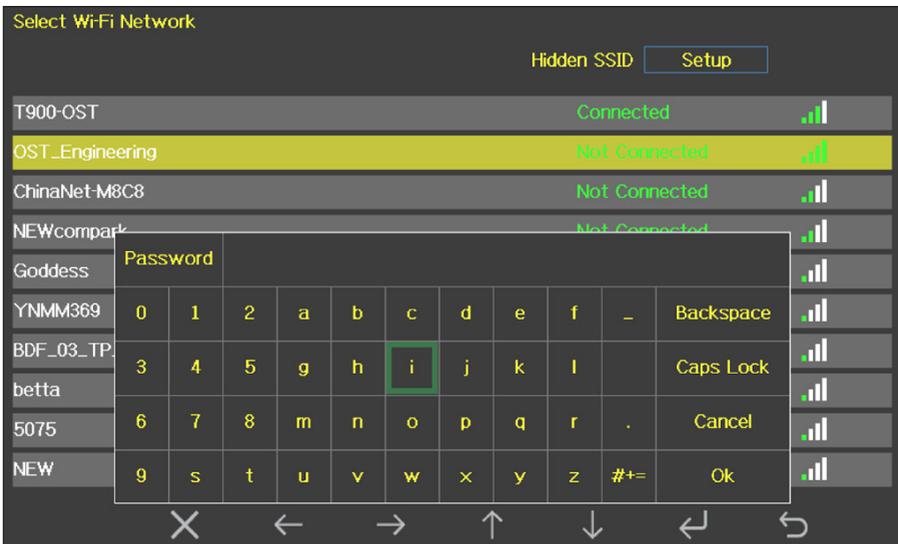
- Press the button ⬆ or ⬇ to select the Wi-Fi network you wish to connect the weather station to.
- Press ↵ to confirm your selection and enter the password.
- Press ⬆ ⬇ ⬅ ➡ to select the individual characters.
- Press ↵ to apply the character. You can also press the X button to delete a character.
- Once you have entered your password, navigate to Ok and confirm with ↵.
- Press the ✕ button to close the password input field and cancel the input.
- Press ↩ to cancel the Wi-Fi setup and return to the settings page.

→ Your Wi-Fi network may not be displayed after the search. Press the ⬕ button to return to the settings page and restart the Wi-Fi search.

When you have successfully connected to the Wi-Fi network, the Wi-Fi icon **(6)** is displayed at the top left of the screen.

With the weather station connected to your Wi-Fi network, you can upload data to the weather website.

When data has been successfully uploaded to a weather server, the corresponding icon is displayed at the top left of the screen next to the Wi-Fi icon **(6)**.

If the Wi-Fi network you wish to connect to has a hidden SSID, please follow the steps below to connect to the Wi-Fi network:

■ If the menu item for settings for a hidden SSID is not highlighted at the top right of the Wi-Fi search, press the button ⬆ **(54)** or ⬇ **(53)** to navigate to this item.

■ Press ⏎ to open the settings for a hidden SSID.
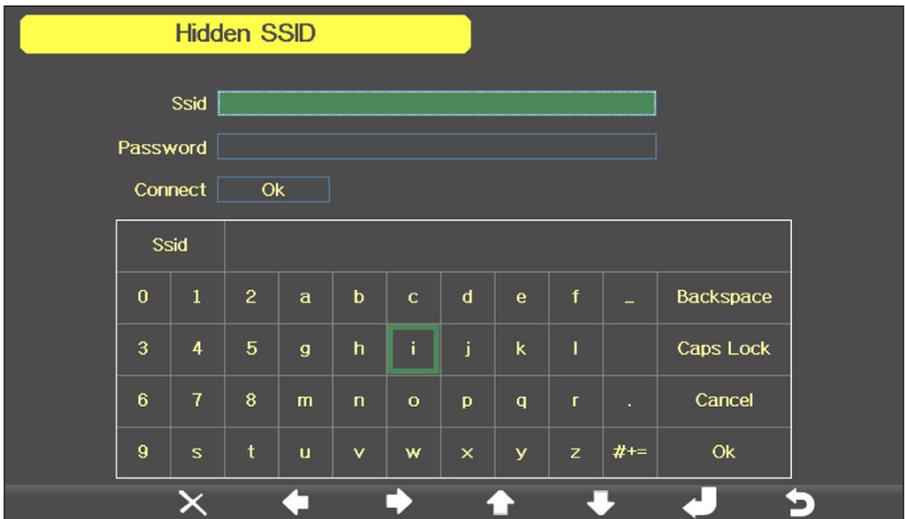

■ Press the ⬇ button to move to the SSID input field.

■ With the field highlighted, pressing the ⏎ button calls up the keyboard to enter the SSID.

■ Press ⬆ ⬇ ⬅ ➡ to select the individual characters.

■ Press ⏎ to apply the character. You can also press the X button to delete a character.

■ Once you have entered the SSID, navigate to Ok and confirm with ⏎.

■ Press the ⬇ button again to move to the password input field.

■ Enter the password and confirm.

Hidden SSID

Ssid	T900-OST
Password	1990325710
Connect	Ok
Status	Connected

- Press the ⤓ button again to move to the "**OK**" field.
- Press ↵ to initiate the Wi-Fi search.
- When the bottom field shows the "Connected" status, press the ↩ button twice to return to the settings page.

14.1.2 Setting the date and time

- From the settings menu, press the ⬇ button **(54)** once to select the date and time setup submenu.
- Pressing the button 🔍 **(49)** or 🔍 **(50)** opens the date and time setup submenu.
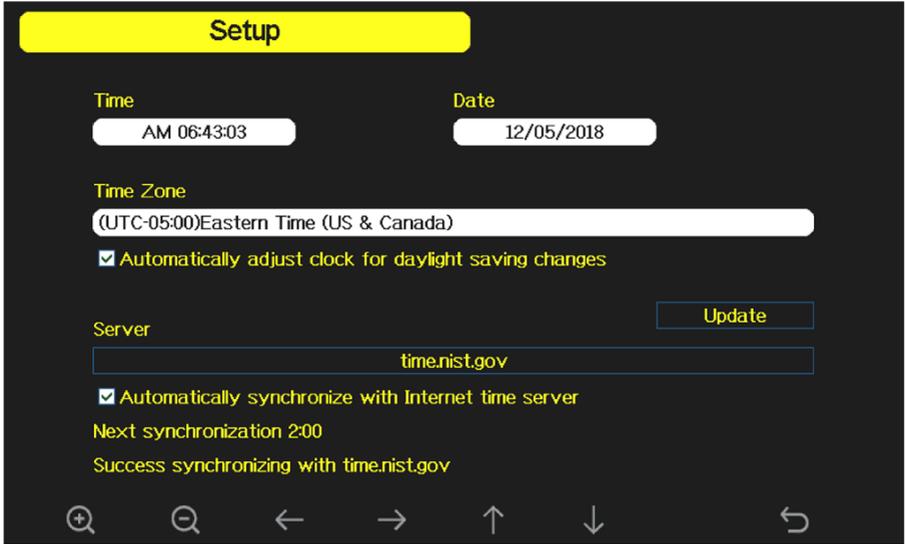
Setting the time

- From the date and time setup menu, press the ⬇ button **(54)** once to select the time setup field.
- The hour digit turns red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the hours.
- Press ➡ **(54)** to set the minutes.
- The minute digit turns red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the minutes.
- Press ➡ **(54)** to set the seconds.
- The second digit turn red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the seconds.

Setting the date

- Press the ⬇ button **(54)** to select the date setup field.
- The day digit turns red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the day.
- Press ➡ **(54)** to set the month.
- The month digit turns red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the month.
- Press ➡ **(54)** to set the year.
- The year digit turns red. Press the button 🔍 **(49)** or 🔍 **(50)** to set the year.

Setting the time zone

- Press the ⬇ button **(54)** to select the time zone setup field.
- Press the button 🔍 **(49)** or 🔍 **(50)** to set the desired time zone.
- Press the ⬇ button **(54)** to select the Update field.
- Press the button 🔍 **(49)** or 🔍 **(50)** to initiate the update.

  The weather station must be connected to the Internet to launch the update. If not, retry the update when the weather station is connected to the Internet.

Automatic synchronisation with the time server

- The time server is "**time.nist.gov**". Press the button 🔍 **(49)** or 🔍 **(50)** to activate automatic synchronisation with the Internet time server by ticking the checkbox.

  The time is updated daily at 2:01 a.m. when the unit is connected to the Internet.

14.1.3 Setting the time format

- Press the ⬇ button **(54)** to select the time format setup field.
- Press the 🔍 button **(49)** to set the desired time format.

  Selection: hour:minute:second (h:mm:ss) (24-hour format), hour:minute:second AM (h:mm:ss AM), AM hour:minute:second (AM h:mm:ss)

14.1.4 Setting the date format

- Press the 🔍 button **(49)** to set the desired date format.

  Selection: DD-MM-YYYY, YYYY-MM-DD, MM-DD-YYYY

14.1.5 Setting the temperature unit

- Press the 🔍 button **(49)** to set temperature in degrees Celsius (°C) or degrees Fahrenheit (°F).

14.1.6 Setting the barometer unit

- Press the 🔍 button **(49)** to set barometric pressure in inHg, mmHg or hPa.

14.1.7 Setting the wind speed unit

- Press the 🔍 button **(49)** to set the desired wind speed unit.

  Selection: mph, Bft (Beaufort scale), ft/s, m/s, km/h and knots

14.1.8 Setting the precipitation unit

- Press the 🔍 button **(49)** to set precipitation in mm or inch.

14.1.9 Setting the light intensity unit

- Press the 🔍 button **(49)** to set light intensity in lx, W/m^2 or FC.

14.1.10 Multi-channel sensor settings menu

This settings menu enables you to rename the individual channels for the additional sensors. Here, you can also register anew sensors that have been disconnected.

> The settings menu is active only if an optional sensor is connected to the weather station. If not, you cannot access this page.
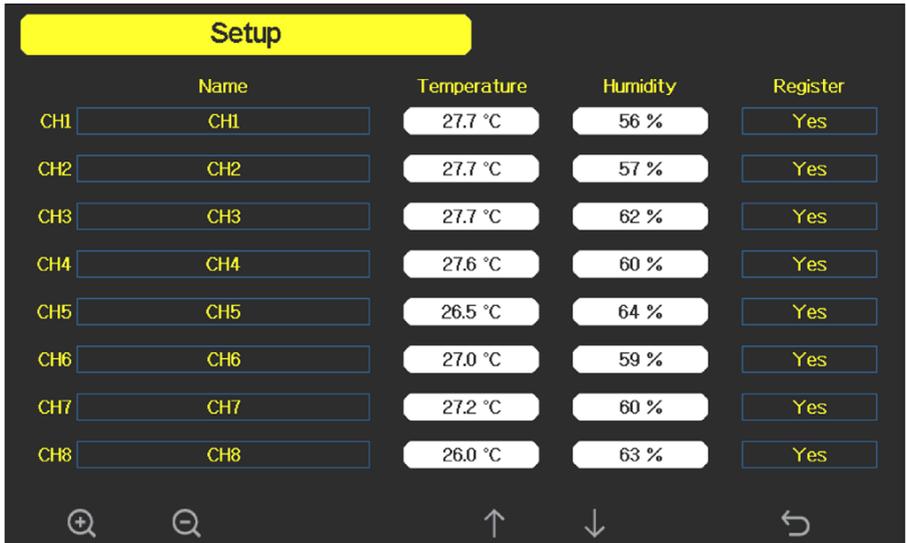
Registering a sensor anew

- Press the button ⬆ **(54)** or ⬇ **(53)** to select any channel of choice.
- Press the button 🔍 **(49)** or 🔍 **(50)** to register the selected sensor anew.
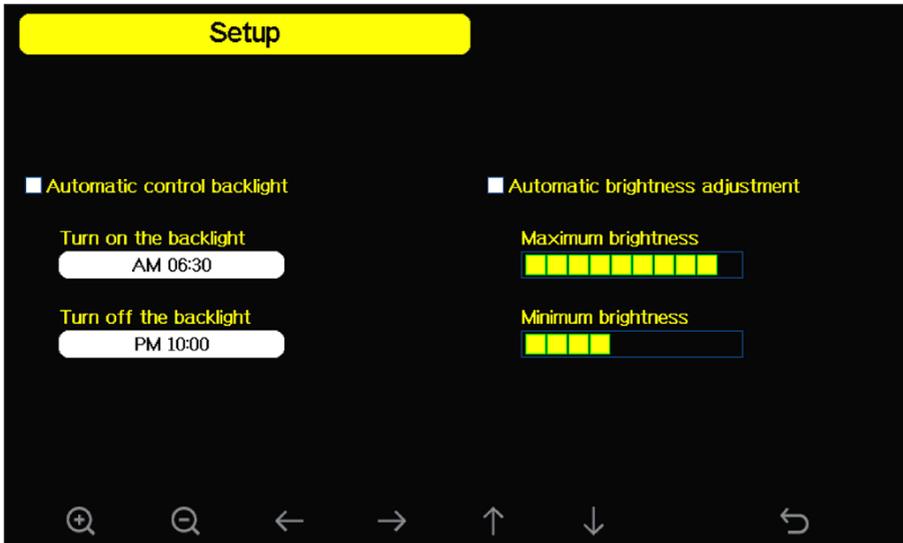
Renaming the channel/sensor

- Press the button ⬆ **(54)** or ⬇ **(53)** to select any channel of choice.
- Press the button 🔍 **(49)** or 🔍 **(50)** to call up the keyboard.

- Press ⬆ ⬇ ⬅ ➡ to select the individual letters/characters.
- Press ⬅ to apply the letter/character.
- Press ➡ to go back to the individual channels page.

14.1.11 Backlight settings menu

The table below briefly describes the settings contained in the menu.

The setup basically is done with the same buttons as in the previous menus.

Function	Explanation
Automatic control backlight	When this setting is ticked, the backlight switches on or off automatically at the preset times (see the next two menu items).
Turn on the backlight	This item enables you to set the automatic switch-on time for the backlight.
Turn off the backlight	This item enables you to set the automatic switch-off time for the backlight.
Automatic brightness adjustment	With this option activated, the backlight brightness is adjusted automatically. The brightness level depends on the light intensity measured by the outdoor sensor.
Maximum brightness	This item enables you to set the maximum display brightness.
Minimum brightness	This item enables you to set the minimum display brightness.

With the automatic backlight enabled, use the ▣ button **(28)** to switch the backlight off within the switch-on time. The backlight switches on again automatically the next time the unit is switched on.

14.1.12 Setting the longitude and latitude
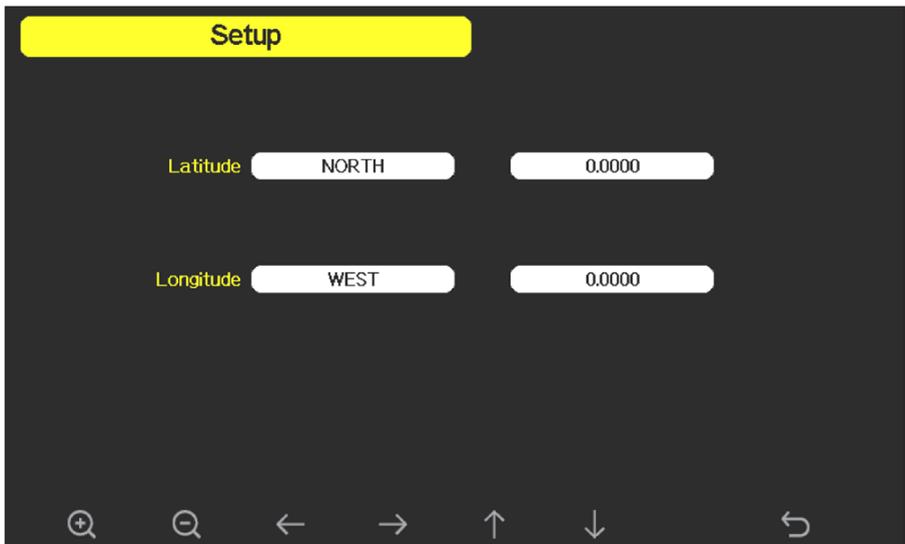
Sunrise and sunset times are automatically determined based on longitude and latitude. You can find the geographical information for your location on various websites. This function usually works well with two digits after the decimal point.

14.1.13 Reset weekly precipitation setting

- Press the ⊙ button **(49)** to select any day (Monday or Sunday) as a starting point for the weekly precipitation measurement.

14.1.14 Rainy season setting

- Press the ⊙ button **(49)** to select any month of choice as a starting point for the annual rainfall measurement. January is the default month.
- → The wet season affects the maximum, minimum and total annual precipitation.
- → With a month selected, the annual precipitation and the maximum/minimum annual precipitation are zeroed at 12:00 a.m. of the first day of the selected month.

14.1.15 Storage interval setting

- Press the ⊙ button **(49)** to set the desired storage interval. You can choose a value between 1 and 240 minutes.

14.1.16 Reset daily precipitation setting

- Press the button ⊙ **(49)** or ⊙ **(50)** to select any time between 12:00 a.m. and 11:00 p.m. (12:00 a.m. by default) as a starting point for the daily rainfall measurement.

14.2 More settings

This menu item serves primarily to calibrate the optional sensors. In addition, you can also manage all sensors' IDs and names/data.

This menu is managed in the same way as all other menus.

14.2.1 Sensor ID settings

This page contains the following settings/queries:

- Sensor ID, signal strength and battery level display; 1 to 4 bars indicate that the sensor has successfully transmitted the signal 1 to 4 times without interruption
- Offline sensor registration
- Sensor activation or deactivation
- Offline sensor ID input

Sensor	Signal	ID	CH	Sensor	Signal	ID	CH	Sensor	Signal	ID
WH65		2f	1	PM2.5		b9	1	Soil		c4c6
T&HP		49	2	PM2.5		c4ad	2	Soil		c4b5
T&H		88	3	PM2.5		113c7	3	Soil		c4bc
WS80		60029	4	PM2.5		5b	4	Soil		c4a7
WH40		-----	1	T&H		8a	5	Soil		c690
WH57		0	2	T&H		77	6	Soil		c561
WH45		16d	3	T&H		65	7	Soil		c51b
WS68		-----	4	T&H		bc	8	Soil		-----
			5	T&H		66	1	WH55		d4a7
			6	T&H		8e	2	WH55		-----
			7	T&H		19	3	WH55		d4a7
			8	T&H		17	4	WH55		-----

CH	Sensor	Signal	ID	CH	Sensor	Signal	ID
1	WN34		27ba	5	WN35		-----
2	WN34		2784	6	WN35		-----
3	WN34		287d	7	WN35		-----
4	WN34		2747	8	WN35		-----
5	WN34		2757				
6	WN34		276c				
7	WN34		78				
8	WN34		-----				
1	WN35		281d				
2	WN35		0				
3	WN35		2799				
4	WN35		-----				

This screen lists all sensors that can work with this weather station. Please note that your display will certainly be different from the one illustrated.

This package includes only the WS90 outdoor sensor and the indoor temperature, humidity and pressure sensor. These two sensors signal the reception status, and the ID number is automatically displayed when the console receives the sensor signal.

The sensor ID is unique and fixed. Choose "Disable" to disconnect from the console or "Register" to reconnect to the console.

Sensor ID example:
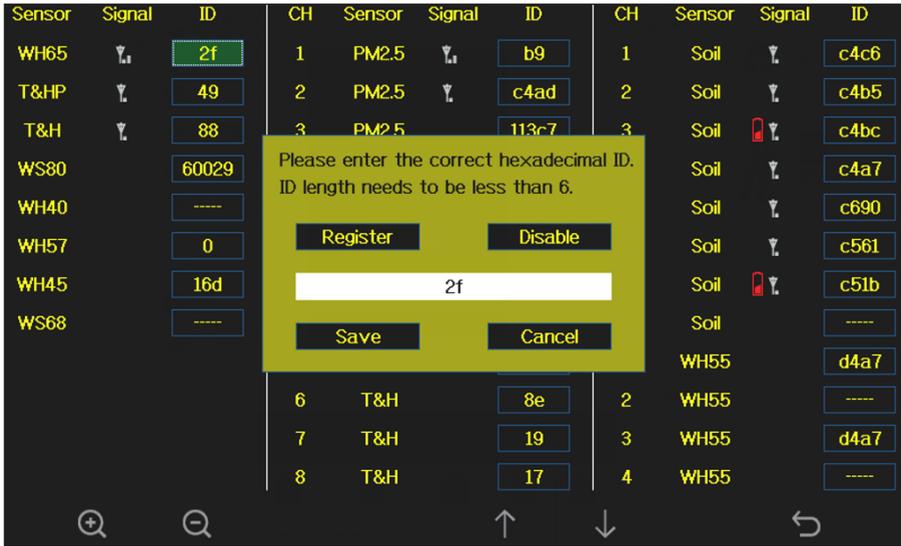
Use the keyboard that appears on the screen to input the sensor ID.

14.2.2 Changing sensor names

The more settings page has a menu item to display the names and data of the respective sensors.

The settings enable you to select the respective sensor and change its name. Refer to chapter "13.2.6 Viewing the data for each channel".

14.3 Alarm settings

■ From the settings page, press the ⬚ button **(55)** once to open the alarm settings.
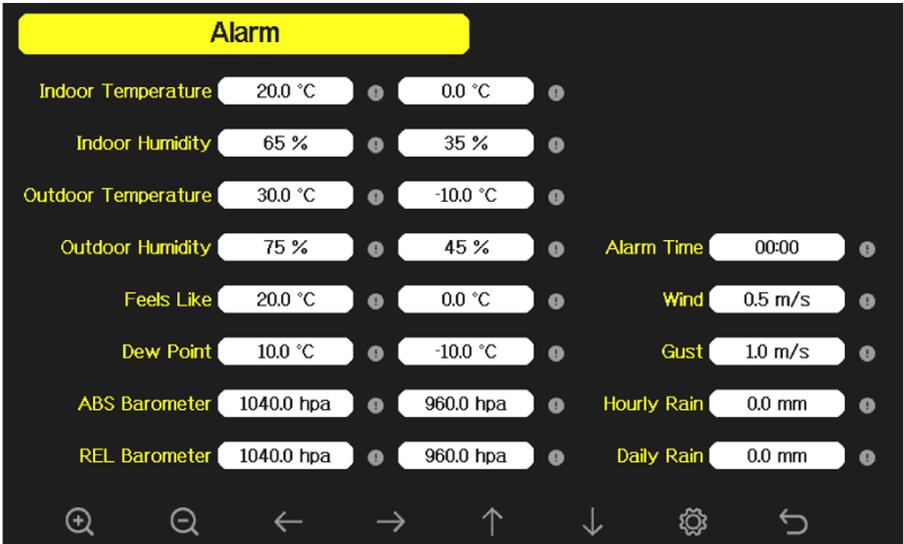
These settings enable you to set alarms for different measurements.

For each measurement, you can set the upper and lower limits. The value on the left is the upper limit, and the one on the right is the lower limit.

The alarm is triggered when the respective exclamation mark next to the limit value is red.

Upon triggering a weather alarm condition, the respective alarm will chime for 120 seconds, and the corresponding icon will flash until the weather condition ceases to match the preset value.

You can mute the alarm by pressing any button.

You can also set an alarm time.

14.4 Calibration

Calibration is optional and appropriate only if there is a known calibrated source to compare with. This section outlines practices, procedures and sources for sensor calibration to reduce production and degradation errors. Never use the Internet, radio, television or newspapers as sources to compare your measurements. Your weather station's purpose is to measure the conditions of your environment, which can vary considerably from site to site.

■ From the settings page, press the ▓ button **(55)** twice to open the calibration page.

Calibration			
Indoor Temperature	77.7 °F	1w/m² =	126.7 lux
Indoor Humidity	67 %	UV Gain	1.00
Outdoor Temperature	77.2 °F	Wind Gain	1.00
Outdoor Humidity	65 %	Rain Gain	1.00
ABS Barometer	29.78 inHg	Daily Rain	0.00 in
REL Barometer	29.78 inHg	Weekly Rain	0.00 in
Wind Direction	58	Monthly Rain	0.00 in
Solar Rad. Gain	1.00	Yearly Rain	0.00 in

⊕   ⊖   ←   →   ↑   ↓   ⚙   ↩
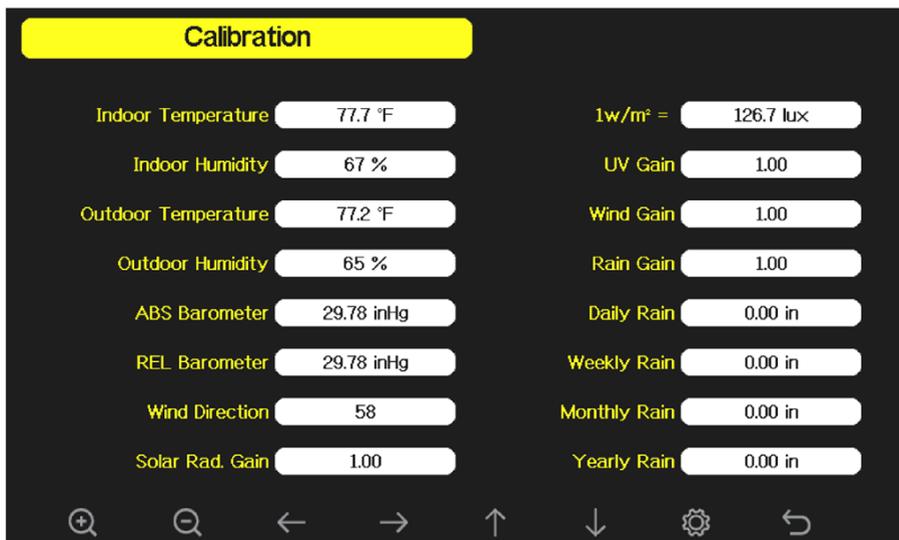
Function	Type of calibration	Default value	Typical calibration source
Temperature	Offset	Current value	Spirit or mercury thermometer (1st)
Humidity	Offset	Current value	Sling psychrometer (2nd)
Absolute air pressure	Offset	Current value	Laboratory-grade calibrated barometer
Relative air pressure	Offset	Current value	Local airport (3rd)
Wind direction	Offset	Current value	GPS, compass (4th)
Light intensity	Gain	1.00	Laboratory-grade calibrated solar radiation sensor
1 W/m²	Gain	126.7 lx	Conversion of solar radiation from lx to W/m² for wavelength correction (5th)
UV index	Gain	1.00	Laboratory-grade calibrated UV sensor
Wind speed	Gain	1.00	Laboratory-grade calibrated anemometer (6th)
Precipitation	Gain	1.00	Sight glass rain gauge with an aperture of at least 4 inches (7th)

Function	Type of calibration	Default value	Typical calibration source
Daily precipitation	Offset	Current value	Apply an offset if the weather station has been out of service all day.
Weekly precipitation	Offset	Current value	Apply an offset if the weather station has been out of service all week.
Monthly precipitation	Offset	Current value	Apply an offset if the weather station has been out of service all month.
Annual precipitation	Offset	Current value	Apply an offset if the weather station has been out of service all year.

1. Placing a sensor too close to a heat source (e.g. a building structure, ground or trees) can cause temperature errors. We recommend using a mercury or spirit thermometer (liquid thermometer) for temperature calibration. We do not recommend using bimetallic (dial) and digital thermometers (from other weather stations) as they are not a good source and have their own margin of error.

   A local weather station in your area is also a poor source due to changes in location, timing (airport weather stations are only updated once per hour) and possible calibration errors (many official weather stations are not properly installed and calibrated).

   Place the sensor in a shady, controlled environment next to the liquid thermometer and allow it to stabilise for 3 hours. Check this temperature against the liquid thermometer and adjust the console to match the liquid thermometer.

2. Relative humidity is a parameter that is difficult to measure electronically and fluctuates over time due to contamination. Besides, place of installation (e.g. on the ground or lawn) can adversely affect the humidity values.

   At official stations, humidity sensors are calibrated or replaced annually. Humidity is accurate to ± 5% due to production tolerances. This accuracy can be improved through calibration of the indoor and outdoor humidity using an accurate source, such as a sling psychrometer.

3. The display console shows two different pressure values: absolute (measured) and relative (corrected to sea-level conditions).

   Meteorologists recalculate the barometric pressure to mean sea-level conditions to compare pressure conditions across locations. Because the air pressure decreases as you rise in altitude, the pressure corrected to sea-level conditions (the pressure your location would be at if located at sea-level) is generally higher than your measured pressure.

   Thus, your absolute pressure may read 28.62 inHg (969 mb) at an altitude of 1000 feet (305 m), but the relative pressure is 30.00 inHg (1016 mb).

   The standard sea-level pressure is 29.92 inHg (1013 mb). This is the average sea-level pressure around the world. Relative pressure measurements greater than 29.92 inHg (1013 mb) are considered high pressure, and relative pressure measurements less than 29.92 inHg are considered low pressure.

   To find the relative air pressure for your location, search for an official reporting station near you (the Internet is the best source for real-time barometric conditions, such as weather.com or www.wunderground.com) and set your weather station to match the official reports.

4. This is only recommended if you have installed the weather station sensor array incorrectly and failed to align the reference direction to true north.

5. The default conversion factor based on the wavelength for bright sunlight is 126.7 lx/W/m². Although this variable can be adjusted by photovoltaic experts based on the light wavelength of interest, most weather station owners find it accurate for typical applications such as calculating evapotranspiration and solar panel efficiency.

6. Installation constraints have been found to affect wind speed the most. The rule of thumb is to install a wind speed sensor at least four times the distance of the height of the tallest obstruction. For example, if your house is 6 m high and the mounting pole is 1.5 m high:

    install the sensor 4 x (6.0 m - 1.5 m) = 18.0 m away.

    Many installations are not perfect, and installing the weather station on a roof can be tricky. Thus, you can calibrate for this error with a wind speed multiplier.

    Besides facing challenges during installation, you will have to deal with the wind cup bearings (moving parts) that wear over time.

    Unless you have a calibrated source, measuring the wind speed can be problematic. We recommend using a calibrated anemometer (not included) and a high-performance constant-speed fan.

7. The rain collector is factory calibrated based on the funnel diameter. The bucket tips every 0.01 inch or 0.1 m of rain (referred to as resolution). The accumulated rainfall can be compared to a sight glass rain gauge with an aperture of at least 4 inches or 0.1 m.

    Ensure you regularly clean the funnel of the rain gauge.

The calibration serves to fine tune or compensate for any sensor errors related to the unit's margin of error. Errors can result from electronic variation (e.g. the temperature sensor is a resistance temperature device or RTD, and the humidity sensor is a capacitance device), mechanical variation or degradation (wearing of moving parts, contamination of sensors).

For better results, the UV calibration must be performed every 2 to 3 months. With time, the results can be affected by the UV index due to increased brightness and sunlight. Therefore, it is recommended to perform UV calibration with care.

14.5 Factory defaults

- Use the buttons ⬆ or ⬇ to select the individual items and confirm your selection with the button ⊕ or ⊖.

14.5.1 Automatically clearing the maximum/minimum values
With the Automatic Clear Max/Min item enabled, the maximum/minimum values are cleared every day at 12:00 a.m. They are also displayed as daily maximum/minimum values.

14.5.2 Factory defaults
Use the Reset to Factory option to reset the weather station to factory defaults. All settings and data will be deleted.

14.5.3 Languages
Here, you can select your local language as the display language of the weather station.

14.5.4 Clearing the history and maximum/minimum values
Use the Clear History and Clear Max/Min options to clear the entire history and all maximum/minimum values.

14.5.5 Backup
This function enables you to save the settings and history data on a microSD card.

Put a microSD card (see chapter "12.3 Inserting the memory card") into the weather station and select the function. Data are saved as ".**CSV**" files on the microSD card.

14.5.6 Information
With the last menu item (About), you can display all the information about the weather station.

You can also check here for firmware updates for your weather station. Check the box near the corresponding item if you want the updates to be installed automatically.

If the firmware update option is not available, you can update the firmware via the "**WS View**" app.

15 Other settings and functions

15.1 Resetting the outdoor sensor to factory defaults

- To reset the outdoor sensor to factory defaults, press and hold the "**RESET**" button **(U)** for a few seconds using a pointed object and release the button.
- The status LED **(P)** will light up continuously for a short time and then flash again at intervals of about 8.8 seconds.
- The reset is now complete.

15.2 Calibrating the outdoor sensor

The ultrasonic sensor is calibrated before leaving the factory. We do not recommend our customers to perform calibration single-handedly.

Calibration should only be performed if the wind speed does not drop to zero when there is no wind.

- Use a cloth or rag that absorbs water well (thus preventing the ultrasonic waves from echoing) and wrap it around the air inlet between **(L)** and **(R)**.
- Press and hold the "**CAL**" button **(V)** for about 3 seconds using a pointed object until the status LED **(P)** lights up continuously. Then release the button.
- Place the product on the table. The status LED **(P)** will flash after about 5 seconds.

  At this point, the outdoor sensor is in calibration mode. When the status LED **(P)** goes out, the calibration is complete, and the product automatically returns to normal operation mode.

15.3 Optional sensors

15.3.1 Pairing optional sensors

You can pair an optional sensor with the weather station by following the steps below:

1. Place the optional sensor near the console about 1.5 to 3 m away.
2. Put the batteries in the sensor and wait about 1 to 2 minutes.
3. Check that the weather station automatically captures sensor data and displays it on the screen.
4. If not, go to the settings menu and select More settings. Access the sensor ID settings here, as described in chapter "14.2.1 Sensor ID settings".
5. Locate the sensor you want to pair. Navigate to the corresponding field in the ID column and open the registration menu. Enter the ID number and register the sensor.
6. After successful input, go back to the main page and check the data.

15.3.2 Number of optional sensors

The table below shows the maximum number of individual sensor types that can be paired with the weather station.

Sensor	Max. number	Sensor	Max. number
WH31 multi-channel temperature and humidity sensor	8	WH57 thunder and lightning sensor	1
WN36 wireless floating pool thermom-eter		WH45 air quality sensor with PM2.5/PM10/CO2/temperature/humidity detection	1
WH51 soil moisture sensor	8	WN35 leaf wetness sensor	8
WH41 outdoor PM2.5 air quality sensor	4	WN34S soil and water stainless steel contact thermometer	8
WH43 indoor PM2.5 air quality sensor		WN34L wire water thermometer	
WH55 water leakage detector	4		

Note: For the aforementioned optional sensors

- The console display shows current data only, and history data is stored on the SD card.
- The website www.wunderground.com is not supported. The website www.ecowitt.net supports upload of this sensor data.

15.4 Description and limitations of weather forecasting

Generally, the weather gets better as the rate of pressure change increases (sunny to partly cloudy). When the rate of pressure change decreases, the weather usually gets worse (cloudy, rainy or stormy). When the rate of change is relatively steady, the weather will be partly cloudy.

The reason the current conditions do not match the forecast icon is because the forecast is a prediction 24 to 48 hours in advance. In most locations, this prediction is only 70% accurate, and it is a good idea to consult the National Weather Service for more accurate weather forecasts. In some locations, this forecast may be more or less accurate.

The National Weather Service (and other weather services such as Accuweather and The Weather Channel) has at its disposal multiple tools to predict weather conditions, including weather radar, weather models, and detailed mapping of ground conditions.

15.5 The Beaufort scale

The Beaufort scale is an empirical scale for estimating the wind speed without using measuring instruments. It works by relating wind speed to observed conditions on sea or land, such as the movement of trees or waves on the surface of the ocean. It is named after Sir Francis Beaufort. The wind speed on land and sea is calculated in different ways. The anemometer displays measurements on the Beaufort scale from 0-12 using a bar graph. The table below provides an approximate conversion of Beaufort measurements into different units.

Beaufort scale						
Number	Classification	m/s	kts	mph	km/h	ft/min
0	No wind, calm	0 – 0.2	0 – 1	0 – 1	0 – 1	0 – 58
1	Light air	0.3 – 1.5	1 – 3	1 – 3	1 – 5	59 – 314
2	Light breeze	1.6 – 3.3	4 – 6	4 – 7	6 – 11	315 – 668
3	Gentle breeze	3.4 – 5.4	7 – 10	8 – 12	12 – 19	669 – 1082
4	Moderate breeze	5.5 – 7.9	11 – 16	13 – 18	20 – 28	1083 – 1574
5	Fresh breeze	8.0 – 10.7	17 – 21	19 – 24	29 – 38	1575 – 2125
6	Strong breeze	10.8 – 13.8	22 – 27	25 – 31	39 – 49	2126 – 2735
7	Near gale	13.9 – 17.1	28 – 33	32 – 38	50 – 61	2736 – 3385
8	Fresh gale	17.2 – 20.7	34 – 40	39 – 46	62 – 74	3386 – 4093
9	Strong gale	20.8 – 24.4	41 – 47	47 – 54	75 – 88	4094 – 4822
10	Whole gale	24.5 – 28.4	48 – 55	55 – 63	89 – 102	4823 – 5609
11	Violent storm	28.5 – 32.6	56 – 63	64 – 72	103 – 117	5610 – 6417
12	Hurricane	32.6	>63	>72	>117	>6417

15.6 UV index range

The UV index is a value that indicates the intensity of harmful UV radiation and can help determine when sun protection is advisable.

Range	Number	Classification
0 – 99 uw/cm^2	0	Low
99 – 540 uw/cm^2	1	Low
540 – 1000 uw/cm^2	2	Low
1000 – 1400 uw/cm^2	3	Moderate
1400 – 1843 uw/cm^2	4	Moderate
1843 – 2292 uw/cm^2	5	High
2292 – 2734 uw/cm^2	6	High
2734 – 3138 uw/cm^2	7	High
3138 – 3648 uw/cm^2	8	Very high
3648 – 4196 uw/cm^2	9	Very high
4196 – 4707 uw/cm^2	10	Very high
4707 – 5209 uw/cm^2	11	Extreme
5209 – 5735 uw/cm^2	12	Extreme
5735 – 6276 uw/cm^2	13	Extreme
6276 – 6778 uw/cm^2	14	Extreme
≥ 6778 uw/cm^2	15	Extreme

16 Weather Services settings

16.1 Weather services overview

The weather station can stream your sensor data to selected Internet-based weather services. The table below lists the supported services:

Weather service	Website	Explanation
Weather Underground	https://www.wunderground.com/	**Weather Underground** is a free weather hosting service that allows you to send and view your weather station data in real time, view graphs and gauges, import text data for more detailed analysis, and use iPhone, iPad and Android apps available at wunderground.com. Weather Underground is a subsidiary of "The Weather Channel" and IBM.
Weathercloud	https://weathercloud.net/	**Weathercloud** is a real-time weather social network formed by observers from around the world.
WOW - Weather Observations Website	https://wow.metoffice.gov.uk/	**WOW** is a UK-based weather observation website.
Ecowitt Weather	https://www.ecowitt.net/	**Ecowitt** is a new weather server that can host a bunch of sensors that other services do not support.
Customised weather service		Supports uploading to your customised website if the website has the same protocol as Wunderground or Ecowitt.

16.2 Weather Underground

16.2.1 Setting up Weather Underground

Perform the following steps to get the station ID and password at www.wunderground.com/:

- From your browser, open the website https://www.wunderground.com/.
- If you do not have an account for "**Weather Underground**", click "**Join**" at the top right and create one. If you already have an account, log in directly via "**Log in**" on the website.
- Then click "**My Profile**" at the top right and select "**My Devices**".
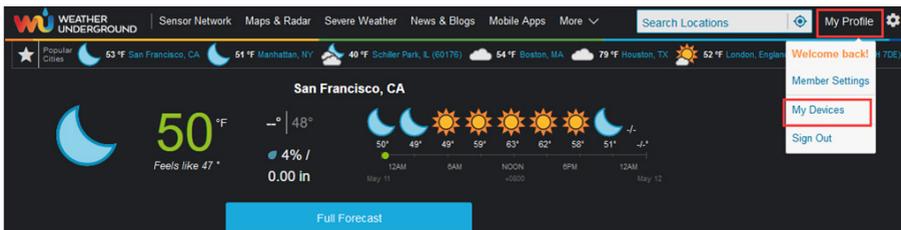
- Click the blue button "**Add New Device**".

- Search the "**Personal Weather Station**" menu and select "**other**" from the list. Click "**Next**" to continue.

■ Select "**Address**" or "**Manual**" to find your address on the map. Click "**Next**".

■ Next, you need to fill in some details about your weather station. Fill out the form.
■ Check the two boxes below to accept the privacy policy and receive notifications via email. Click "**Next**".

- After entering all the data, you can view your "**Station ID**" and password ("**Station Key**").

- From the main display, press the ⚙ button **(33)** once to open the settings.
- Press the button ⬆ **(54)** or ⬇ **(53)** to navigate to the Weather Services settings and open the menu item using the button ⊕ **(49)** or ⊖ **(50)**.
- Here, enter the "**Station ID**" and "**Station Key**" (password) in the corresponding fields.

- Go back to the website https://www.wunderground.com/ or refresh the page if necessary.
- You should now see the weather station as Online in the "**My Devices**" section.

16.2.2 Viewing data from Weather Underground

- The easiest way to track your weather station's data is to use the website https://www.wunderground.com/.
- Use the following URL and enter your real Station ID in place of the text "**STATIONID**".
  https://www.wunderground.com/personal-weather-station/dashboard?ID=STATIONID
- You will see a page like this, where you can also view current and historical data.

You can also use other apps available for Apple iOS and Google Android™.

WunderStation

This iPad application allows you to view your weather station's data and graphs. Further information and links to App Store can be found on the service provider's website.

https://www.wunderground.com/wunderstation

Weather Underground

This is a weather forecast app available for iOS and Android™. Further information and links to App Store can also be found on the service provider's website (at the very bottom).

https://www.wunderground.com/wunderstation

Apple App Store

https://apps.apple.com/app/wundermap/id486154808

Google Play

https://play.google.com/store/apps/details?id=com.wunderground.android.weather&hl

WunderMap

This app enables you to track storms, thunderstorms, etc. and is also available for iOS and Android™.

Further information and links to App Store can also be found on the service provider's website (at the very bottom).

https://www.wunderground.com/wunderstation

The service also has a direct web page.
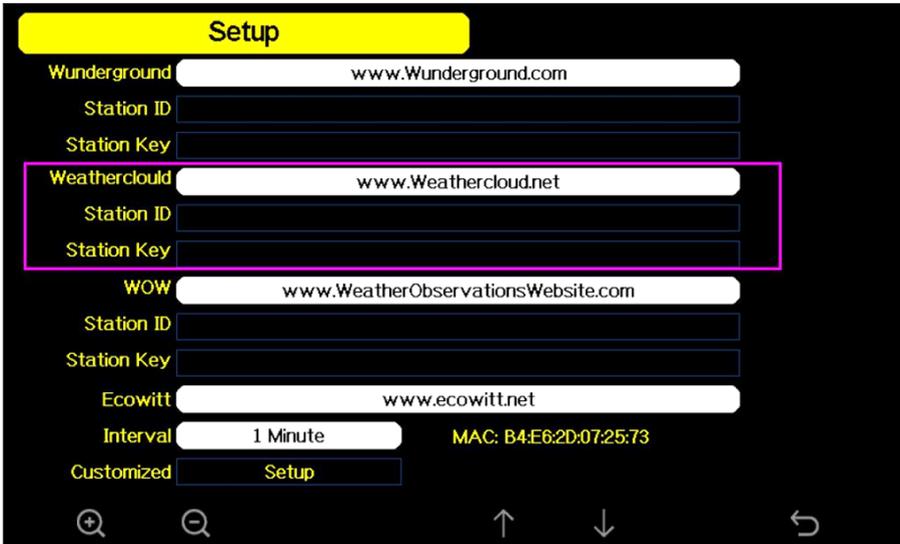
https://www.wunderground.com/wundermap

16.3 Setting up Weathercloud

Perform the following steps to get the station ID and password at weathercloud.net:

- From your browser, open the website https://weathercloud.net/.
- If you do not have an account for "**Weathercloud**", you can enter your registration data directly on the home page.
  Enter a user name, an e-mail address and a secure password and confirm your entry.
- After that, you will receive an e-mail with a confirmation link. Click on the link and follow the instructions.
- If you already have an account or after you have signed up, log in to the website.
- From the home page, click the three-line menu icon at the top right and then click the button at the bottom left in the menu to get started. Doing so opens the site's web app. You can log in here using the button at the top right or sign up using the button next to it on the left.
- After you have logged in, you will be prompted to create a device. Follow the instructions and enter details of your weather station to get the "**Weathercloud ID**" and the corresponding key.

- From the main display, press the ⬚ button **(33)** once to open the settings.
- Press the button ⬆ **(54)** or ⬇ **(53)** to navigate to the Weather Services settings and open the menu item using the button ⬚ **(49)** or ⬚ **(50)**.
- Here, enter the "**Station ID**" ("**Weathercloud ID**") and "**Station Key**" (password) in the corresponding fields.

Setup	
Wunderground	www.Wunderground.com
Station ID	
Station Key	
Weatherclould	www.Weathercloud.net
Station ID	
Station Key	
WOW	www.WeatherObservationsWebsite.com
Station ID	
Station Key	
Ecowitt	www.ecowitt.net
Interval	1 Minute MAC: B4:E6:2D:07:25:73
Customized	Setup

16.4 Setting up Weather Observation Website (WOW)

Perform the following steps to enable your weather station to upload data to "**WOW**":

- From your browser, open the website https://wow.metoffice.gov.uk/.
- If you already have an account, click "**Login**" at the top right of the web page to log in.
- If you do not yet have an account for "**WOW**", click "**Sing Up**" above. Fill out the form and confirm your entries.
- You will then receive an e-mail with a confirmation link. Click on the link and follow the instructions to confirm your account and details.
- Log in to "**WOW**".
- After logging in, you must create a new WOW site. You can do this by clicking "**Enter a Site**" in the menu bar at the top.
- Fill out the form completely and confirm your entries.
- Next, while still logged in to the website, click "**My Sites**". You should now see the WOW site you created earlier. If you have several sites, choose the correct one.
- You can see the "**Site ID**" on the right, directly under the map.

The "**Site ID**" is a random number assigned to each "**WOW**" site to distinguish it from the rest. This number appears (in brackets) beside or below the name of your "**WOW**" site on the website information page, for example: 6a571450-df53-e611-9401-0003ff5987fd

- You must also set the PIN code.

- To do so, click "**Edit Site**" and enter a code consisting of 6 digits. This code will be your authentication key.
- Open the Weather Services settings again.
- Here, enter the "**Station ID**" ("**Site ID**") and "**Station Key**" (authentication key) in the corresponding fields.

16.5 Ecowitt Weather

16.5.1 Setting up Ecowitt Weather

To sign up to "**Ecowitt Weather**", follow the steps below:

- From the main display, press the ▣ button **(33)** once to open the settings.
- Press the button ⬆ **(54)** or ⬇ **(53)** to navigate to the Weather Services settings and open the menu item using the button ▣ **(49)** or ▣ **(50)**.
- Specify the interval time here (1 minute by default).
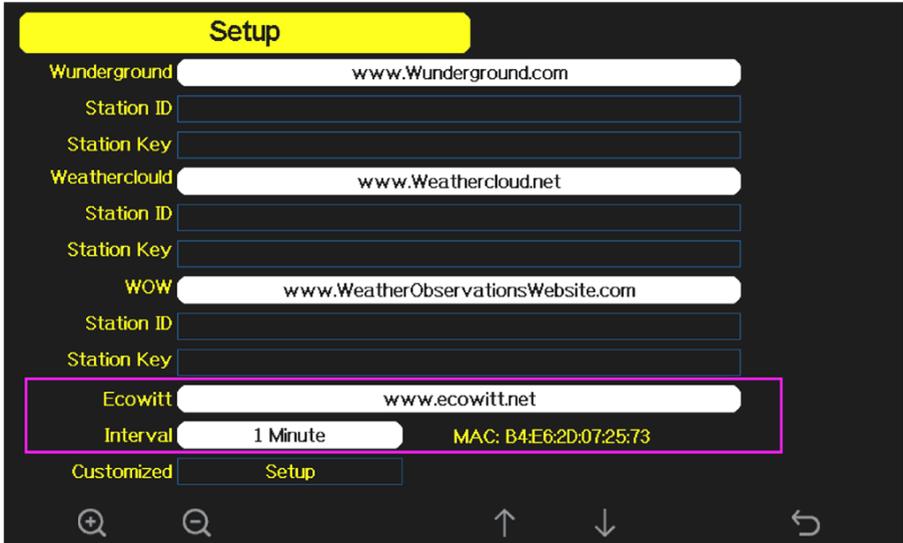
- From your browser, open the website https://www.ecowitt.net/.
- If you do not have an account for "**Ecowitt Weather**", click "**Register**" and enter your registration data directly on the home page.

  Enter your e-mail address and then enter a secure password twice.

  Then click "**Send Mail**".

  Enter the code you received via e-mail in the corresponding field and save.
- If you already have an account or after you have signed up, log in on the home page.
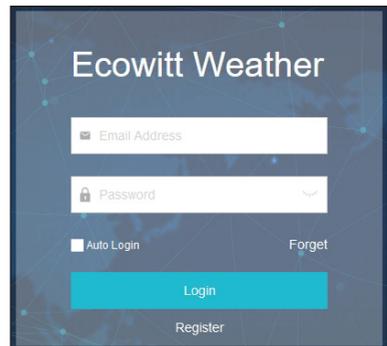
- When logging in for the first time or if you have yet to link a device, you will be automatically redirected to the devices page. If not, open the three-line menu at the top left and click "**Devices**".
- Then click "**Add Device**".
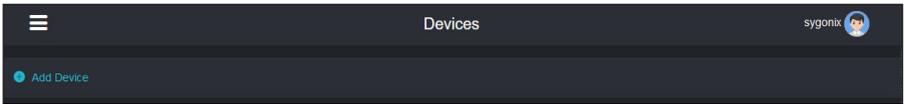
- Fill out the form.

  Enter a name for your weather station and select your location correctly to ensure accurate calculations. Select "**Weather Station**" as the type and adjust the time zone if necessary. It is important to set the correct time zone because the weather station's clock is updated automatically via Wi-Fi and would otherwise show the wrong time.

  Next, enter the MAC address of your weather station. Make sure you select "**MAC**" in the drop-down menu. You will find the MAC address on the Weather Services settings page (see 1st screenshot in this chapter) of your weather station. Enter the data as shown for your weather station.

- Click "**Save**" to save the entries.

Before you go to the dashboard, we recommend that you first check the basic settings and modify them as necessary.

- Click the three-line menu icon at the top left and then click "**Setting**".
- Adjust the settings and click "**Save**" to save changes.

16.5.2 Viewing data from Ecowitt Weather

- Open the dashboard to view your data on "**Ecowitt Weather**". To do so, click the three-line menu icon at the top left again and choose "**Dashboard**".
- You will see the page below where you can view current and history data.

Your weather station's sensor data should be available in a few minutes and displayed here.

For convenience, you can view the website or dashboard in your browser, on your smartphone or tablet, or you can create a shortcut on your home screen.

You can also use the link below to access the dashboard on "**Ecowitt Weather**".

https://www.ecowitt.net/home/index?id=**StationID**

The link always has the same structure. At the end of the link you can find the wording "**StationID**". Enter the actual Station ID of your account in place of this text.

When viewing your dashboard in the browser, you can copy the full link.

You can also install the "**Ecowitt**" app from "**Ecowitt Weather**". The link to the app in "App Store" from Apple or in "Google Play" can be found in the three-line menu at the bottom.

The dashboard consists of various displays.

■ Scroll down in the browser to view your data as a graph.
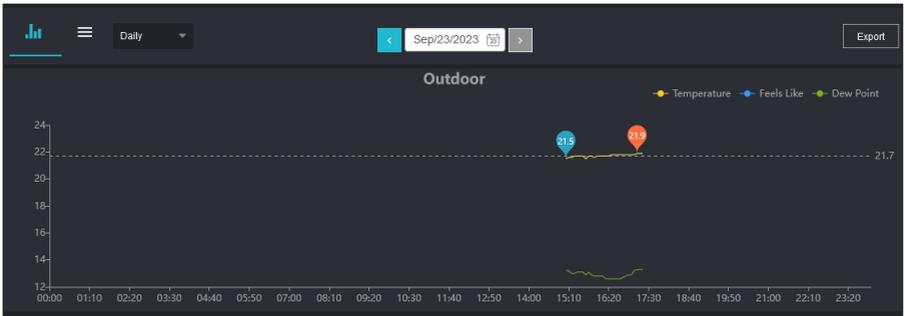
■ The graphical display is shown by default. To display data as a list, click the three-line menu icon.

■ From the drop-down menu next to the icon, select the time period you want to display.

■ You can also export data using the button on the far right.

■ From the three-line menu, where you can find the dashboard, you can switch to a weather map ("**Weather Map**") and configure the alarm settings ("**Alerts**").

16.5.3 Sharing your Ecowitt Weather data with other users

You can share your weather data with other users using the share function.

■ To do so, click the three-line menu icon at the top left again and choose "**Share**".

■ To create a share, click "**Add share**".

■ Adjust the settings and click "**Save**" to save them.

■ Under "**Share**", you will find the share link, which you can forward to others. No login or account for "**Ecowitt Weather**" is required to view shared data.

16.6 Configuring a customised weather service

To set up a customised weather service, perform the following steps:

- From the main display, press the ⊚ button **(33)** once to open the settings.
- Press the button ⬆ **(54)** or ⬇ **(53)** to navigate to the Weather Services settings and open the menu item using the button ⊡ **(49)** or ⊡ **(50)**.
- Navigate to the menu item at the very bottom (see highlighted item in the screenshot) and open it.

- First, change the status to "Enable".
- Select the protocol type ("**Wunderground**" or "**Ecowitt**") used by your weather service.
- Enter or select all other details.

- Your entries will be saved automatically. Press ⊡ to leave this page.

17 Configuring and using the WSView Plus app

Important!

Before you start the configuration process, ensure your weather station is connected to your Wi-Fi network. Your smartphone/tablet must also be connected to the same Wi-Fi network.

You do not need an account to use the app. All you have to do is link your weather station to an Internet-based weather service, such as "**Weather Underground**" (see chapter "16.2 Weather Underground") or "**Ecowitt Weather**" (see chapter "16.5 Ecowitt Weather"). This also needs to be done before you start configuration.

17.1 Installing the app

- Open the respective app store on your smartphone. If you are using Android™, open "Google Play". If you are using an Apple device, open "App Store" from Apple.
- Search for the "**WSView Plus**" app (weather station icon with brown background) and install it.
- You can also scan the respective QR code below or tap the name. You will be redirected to the page of the appropriate store.

| Google Play (Android)	App Store (Apple iOS)

- Any reference to "smartphone" in the description below implies a smartphone or tablet.
- We also provide a setup description for Android™ smartphones. For Apple iOS devices, the setup is almost identical.

17.2 Launching the app for the first time

- Open the "**WSView Plus**" app you installed earlier.
- When you open the app for the first time, you will see the home page as in the screenshot on the right.
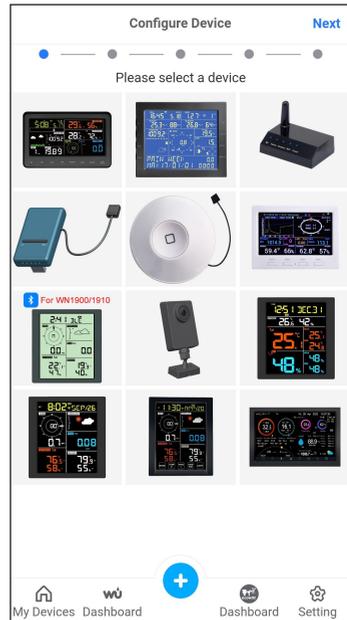
17.3 Connecting the weather station

If your weather station and smartphone are already connected to your Wi-Fi network, the app will automatically recognise your weather station.

- Tap "**My Devices**" at the bottom left.
- Your weather station will be displayed here if it has already been recognised.
- To initiate setup, tap the identified weather station.
- Then skip items 1 and 2 below.

If your weather station is not displayed here, there are two options to set it up.

1. Enter the IP address manually (if the weather station is connected to the Wi-Fi network and Internet):

- Do this by tapping "**IP Connection**" at the top right and entering the IP address in the format "192.168.100.200" in the next window.

  The IP address is shown in the weather station's default settings (see chapter "14.5 Factory defaults") in the last menu at the bottom right.

2. Tap "**+**" to add the weather station (if the weather station is not connected to the Wi-Fi network and the Internet):

■ Do this by tapping "**+**" in the blue circle at the bottom centre of the screen.

■ You will see a display as in the screenshot on the right.
Choose the weather station by tapping it (the selected unit will be highlighted in blue).

■ Tap "**Next**" at the top right.

■ In the window that opens, confirm that the weather station is enabled and tap "**Next**" again.

■ Then follow the instructions.
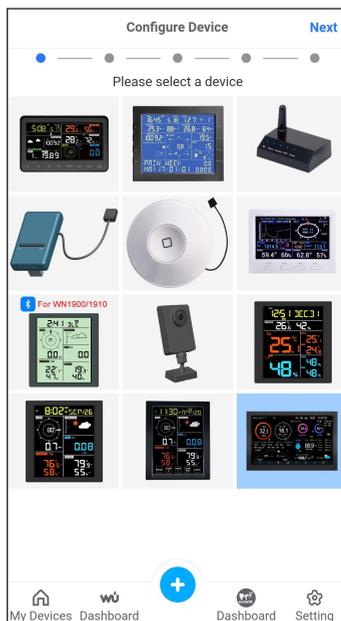
17.4 Linking the app with Weather Underground

■ After tapping the button for the recognised weather station, go to "**Wunderground**" from the drop-down menu at the top.

■ Enter the "**Station ID**" and "**Station Key**" you got after registering the weather station with "**Weather Underground**" into the respective fields.

■ Tap "**Save**" at the top right to save them. If the input has been successful, "**Success**" will be displayed briefly.

■ Tap the arrow at the top left to return to the main page.
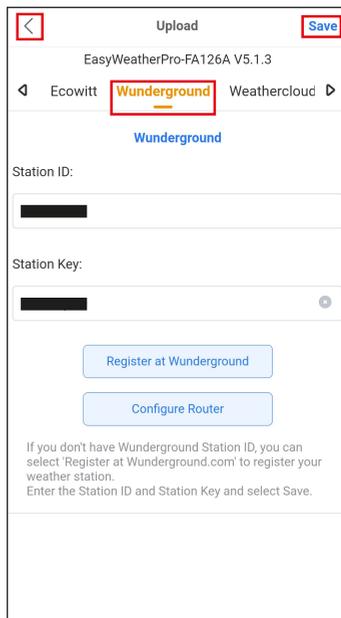
- Tap the button "**WU Dashboard**" at the bottom.
  After setup, no data is normally displayed here.
- Tap the button "**+ StationID**" at the top right.
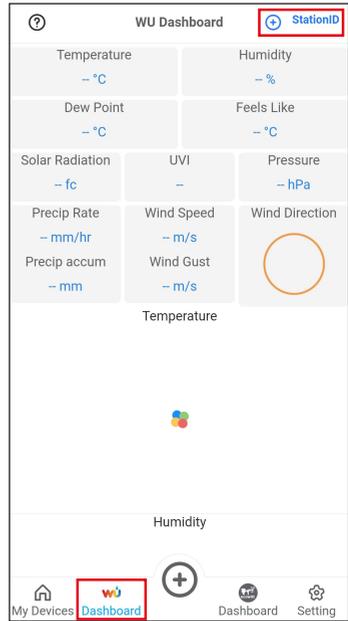
- Next, tap the station ID of your weather station. Avoid tapping "**-**" behind it unless you want to clear the station ID.
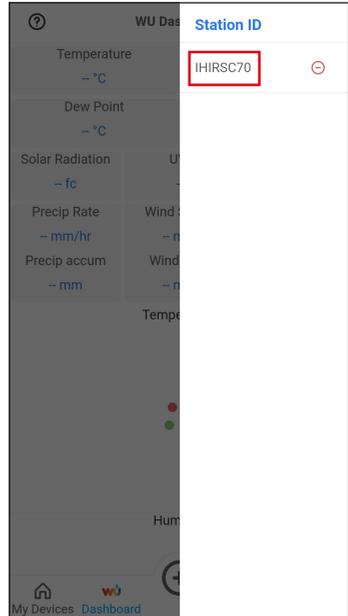
69

- Your weather station data should now appear in the dashboard.
- If no data is displayed, wait a few minutes.
  Go to other tabs in the app, if necessary, or close the app.
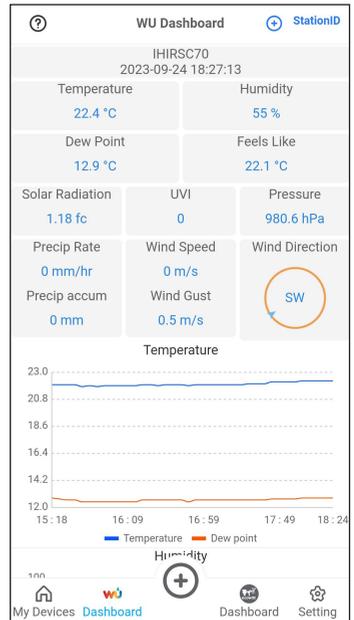
17.5 Linking the app with Ecowitt Weather

- From the main page of the app, tap "**My Devices**" at the bottom left.
- Choose your weather station here.
- "**Ecowitt**" is normally pre-selected in the window that opens. If not, select it.
- Tap the button "**Bind to Ecowitt**".

- Enter your e-mail address and password from your "**Ecowitt**" account in the respective fields.
- Tap "**Next**" at the top right.
- If the registration has been successful, "**Success**" will be displayed briefly.
- Tap the arrow at the top left to return to the main page.
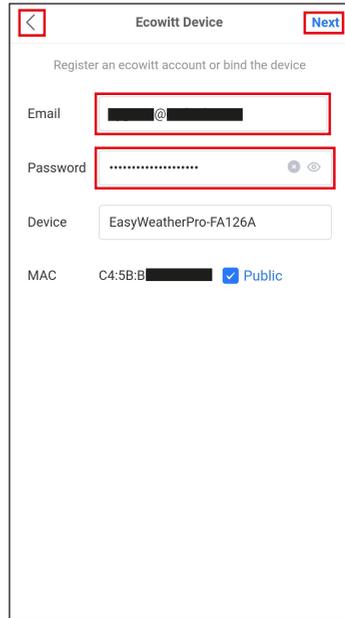
- From the main page of the app, tap "**Dashboard**" at the bottom right next to "**+**".
- Your weather station data should now appear in the dashboard.
- If no data is displayed, wait a few minutes.

  Go to other tabs in the app, if necessary, or close the app.
- Swipe upwards to view more data.

You should also adjust the basic settings for "**Ecowitt**" data.

■ Do this by tapping the three-line menu icon at the top left from the dashboard and choosing "**Setting**".
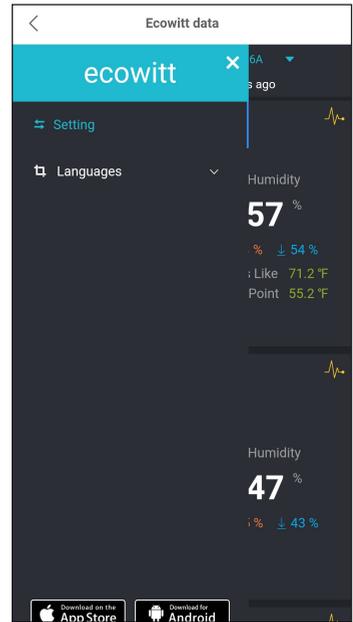
■ Adjust the units as needed.
■ When you are done, tap "**Save**" at the bottom to save changes.

18 Troubleshooting

This weather station is built using the latest technology and is safe to use, but problems and malfunctions may still occur. Therefore, observe the following information on how to eliminate possible malfunctions.

Problem	Remedy
No communication between the outdoor sensor and the display console.	The outdoor sensor may not have been initiated properly, and the weather station registers the data as invalid. The weather station must be reset. Reset the weather station to factory defaults.
	Press the Reset button using a bent paper clip for about 3 seconds to fully discharge the capacitor.
	Disconnect the power adapter and remove the batteries. Wait one minute while covering the solar panel to drain voltage.
	Put the batteries back in, reconnect the power adapter and resync the outdoor sensor with the weather station by switching it off and on again. Ensure the weather station is no more than 3 m from the outdoor sensor.
	Bring the outdoor sensor under shelter. The LED near the battery compartment flashes every 8.8 seconds. When the LED does not flash every 8.8 seconds, replace the batteries in the outdoor sensor.
	If you have recently replaced the batteries, check the polarity. When the sensor flashes every 8.8 seconds, proceed to the next step.
	Communication may be temporarily lost due to loss of reception related to interference or other location factors.
	Or you may have changed the batteries in the outdoor sensor and did not reset the weather station. Switch the weather station off and on again.
	Replace the batteries in the outdoor sensor.
	Disconnect the display console from the power supply and wait 10 seconds. Then power up the display console again.
The temperature sensor reads too high in the day time.	Ensure the sensor array is not too close to heat generating sources or obstructions such as buildings, walkways, walls or air conditioners.
	Use the calibration feature to offset installation issues related to radiant heat sources.
The absolute pressure does not match the official report.	You may be viewing the relative pressure, not the absolute pressure.
	Select the absolute pressure. Make sure you properly calibrate the sensor to an official local weather station.
The rain gauge reports rain when it is not raining.	An unstable mounting aid (sway in the mounting pole) may result in the tipping bucket incorrectly incrementing rainfall. Make sure you have a stable, level mounting aid.

Problem	Remedy
No data is sent to www.wunderground.com.	Check that you have entered the password correctly. Enter the password you used to register at www.wunderground.com. Your Wunderground.com password cannot begin with a non-alphanumeric character (a restriction of Wunderground.com, not the station). Example: $oewkrf is not a valid password, but oewkrf$ is valid.
	Check that your station ID is correct. The station ID consists solely of uppercase letters, and the most common issue is mistaking a 0 for an O (and vice versa).
	Ensure that the date and time on the console are correct. If not, your weather station may be reporting old data and not real-time data.
	Make sure your time zone is set correctly. If not, your weather station may be reporting old data and not real-time data.
	Check your router's firewall settings. The console sends data via port 80.
No Wi-Fi connection	Check the Wi-Fi signal strength icon on the display. If the wireless connection is successful, the Wi-Fi icon appears on the home page.
	Check that the Wi-Fi settings of your Wi-Fi router are correct (network name, password and security settings).

19 Range

The outdoor sensor can transmit radio signals to the weather station within a range of up to 150 m under optimal conditions.

However, these range values refer to the so-called "free-field range". However, the ideal arrangement (e.g. weather station and outdoor sensor on a plain, level meadow without trees, houses, etc.) is not possible in practice.

The weather station is normally set up indoors, and the outdoor sensor is mounted, for example, on the roof or on a pole.

Different objects have a different impact on the range; therefore, no specific range can be guaranteed. The range should be sufficient for use in a detached house.

If the weather station does not receive readings from the outdoor sensor, try reducing the distance between the two devices or choose a different location for the outdoor sensor.

The range can be reduced considerably due to:

- Walls and reinforced concrete ceilings
- Coated/double-glazed windows, aluminium windows etc.
- Trees, bushes, soil and rocks
- Proximity to metal and conducting objects (e.g. radiators and steel doors)
- Proximity to human bodies
- Broadband interferences, e.g. in residential areas (routers, Wi-Fi devices, mobile phones, wireless headphones etc.)
- Proximity to electric motors, transformers, power supply units and monitors
- Proximity to mains sockets and network cables
- Proximity to poorly shielded or uncovered computers or other electrical appliances

20 Cleaning and care

> **Important:**
> – Do not use aggressive cleaning agents, rubbing alcohol or other chemical solutions. They can damage the housing and can cause the product to malfunction.
> – Do not submerge the product in water.

1. Disconnect the product from the power supply.
2. Clean the product with a dry, lint-free cloth.

21 Disposal

21.1 Product

This symbol must appear on any electrical and electronic equipment placed on the EU market. This symbol indicates that this device should not be disposed of as unsorted municipal waste at the end of its service life.

Owners of WEEE (Waste from Electrical and Electronic Equipment) shall dispose of it separately from unsorted municipal waste. Spent batteries and accumulators, which are not enclosed by the WEEE, as well as lamps that can be removed from the WEEE in a non-destructive manner, must be removed by end users from the WEEE in a non-destructive manner before it is handed over to a collection point.

Distributors of electrical and electronic equipment are legally obliged to provide free take-back of waste. Conrad provides the following return options **free of charge** (more details on our website):

- in our Conrad offices
- at the Conrad collection points
- at the collection points of public waste management authorities or the collection points set up by manufacturers or distributors within the meaning of the ElektroG

End users are responsible for deleting personal data from the WEEE to be disposed of.

It should be noted that different obligations about the return or recycling of WEEE may apply in countries outside of Germany.

21.2 (Rechargeable) batteries

Remove batteries/rechargeable batteries, if any, and dispose of them separately from the product. According to the Battery Directive, end users are legally obliged to return all spent batteries/rechargeable batteries; they must not be disposed of in the normal household waste.

Batteries/rechargeable batteries containing hazardous substances are labelled with this symbol to indicate that disposal in household waste is forbidden. The abbreviations for heavy metals in batteries are: Cd = Cadmium, Hg = Mercury, Pb = Lead (name on (rechargeable) batteries, e.g. below the trash icon on the left).

Used (rechargeable) batteries can be returned to collection points in your municipality, our stores or wherever (rechargeable) batteries are sold. You thus fulfil your statutory obligations and contribute to environmental protection.

Batteries/rechargeable batteries that are disposed of should be protected against short circuit and their exposed terminals should be covered completely with insulating tape before disposal. Even empty batteries/rechargeable batteries can contain residual energy that may cause them to swell, burst, catch fire or explode in the event of a short circuit.

22 Declaration of Conformity (DOC)

Conrad Electronic SE, Klaus-Conrad-Straße 1, D-92240 Hirschau hereby declares that this product conforms to the 2014/53/EU directive.

■ Click on the following link to read the full text of the EU declaration of conformity:
www.conrad.com/downloads

Enter the product item number in the search box. You can then download the EU declaration of conformity in the available languages.

23 Technical data

23.1 Weather station power supply

Input voltage .... 5 V/DC

Power consumption .... max 1 A

23.2 Outdoor sensor power supply

Power supply .... power adapter or built-in solar cell, batteries as a backup power source

Input voltage .... 12 V/DC (mains connection)

Solar cell .... 6.5 V/DC, max. 4 mA

Batteries .... 2x 1.5 V AA/Mignon batteries (not included)

23.3 Weather station

Display .... TFT LC display 17.86 cm (7")

Sensor components .... temperature, humidity, air pressure

Temperature display range .... -10 to +60 °C or -14 to +140 °F

Temperature resolution .... 0.1 °C or 0.1 °F

Humidity display range .... 10 – 99%

Humidity resolution 1%

Air pressure display range .... 300 – 1100 hPa (8.85 – 32.5 inHg)

Air pressure accuracy .... ±5 hPa in the range of 700 – 1100 hPa

Air pressure resolution .... 0.1 hPa (0.01 inHg)

Sensor measurement interval .... 60 seconds

Alarm duration .... 120 seconds

Channels .... up to 8 per sensor type, depending on the respective sensor

Supported memory cards .... microSD, microSDHC, max. 32 GB, FAT32 format

Mounting/operating location .... Dry, enclosed indoor spaces

23.4 Outdoor sensor

Radio transmission .... RF 868 MHz to weather station

Sensor components..................... temperature, humidity, wind speed, wind direction, precipitation, UV index, light intensity

Temperature display range .... -40 to +60 °C or -40 to +140 °F

Temperature accuracy .... ±0.3 °C or ±0.6 °F

Temperature resolution .... 0.1 °C or 0.1 °F

Humidity display range .... 1 – 99%

Humidity accuracy .... ±3.5%

Humidity resolution 1%

Rainfall display range .... 0 – 9999 mm

Rainfall accuracy .... ±10%

Rainfall resolution .... 0.1 mm or 0.01 inch

Wind speed
display range .... 0 – 40 m/s

Wind speed
accuracy .... < 10 m/s ±0.5 m/s; ≥ 10 m/s ±0.5%

Wind direction accuracy .... < 2 m/s ±10°; ≥ 2 m/s ±7°

UV index display range................ 0 – 15

Light intensity display range .... 0 – 200 klx

Light intensity accuracy .... ±15%

Sensor measurement interval....... 8.8 seconds

IP protection class IP44

Mounting/operating location .... outdoor area

23.5 Weather station/outdoor sensor radio module

RF.. 868 MHz

Frequency.................................... 868.315 – 868.85 MHz

Channel spacing/bandwidth .... 35 kHz

Transmission power...................... 36 dBm

Range.. max. 150 m (in open space)

WLAN .... IEEE802.11b/g/n, 72.2 Mbit, 2.4 GHz

Frequency.................................... 2.400 – 2.4835 GHz

Transmission power...................... < 19.5 dBm

Range.. max. 50 m (in open space)

23.6 Weather station power adapter

Input voltage/current.................... 100 – 240 V/AC, 50/60 Hz, 0.2 A

Output voltage/current.................. 5 V/DC, 1 A, 5 W

Power adapter output .... USB Type A

USB cable.................................... USB Type A to 2.5 x 0.7 mm (female +)

23.7 Outdoor sensor power adapter

Input voltage/current..................... 100 – 240 V/AC, 50/60 Hz, 0.6 A

Output voltage/current.................. 12 V/DC, 1 A, 12 W

Output.. 2-pole

Protection class IP68

23.8 Weather station ambient conditions

Operating/storage conditions........ -10 to +60 °C, 10 – 99% RH (non-condensing)

23.9 Outdoor sensor ambient conditions

Operating/storage temperature .... -40 to +60 °C, 1 – 99% RH (non-condensing)

23.10 Other weather station data

Dimensions (W x H x D) .... approx. 195 x 138 x 20 mm

Weight .... approx. 220 g

23.11 Other outdoor sensor data

Dimensions (Ø x H) .... approx. 93 x 200 mm

Weight .... approx. 430 g