ClimeMET

Wireless Rain Gauge

CM7015

User Guide

ClimeMET

11:49 MON 15.07

5 CH TEMP
23.4 °C 61 %Rh

21.9 °C 64 %Rh

MONTH mm
140.5

CH

> 2.1
- 1.8
- 1.5
- 1.2
- 0.9
- 0.6
- 0.3

-72 -66 -60 -54 -48 -42 -36 -30 -24 -18 -12 -6

HISTORY   SET   ALARM   CHANNEL

−   +

ClimeMET CM7015 Wireless Rain Gauge

Thank you for your purchase of the CM7015 Wireless Rain Gauge. Please take the time to familiarise yourself with some of the features outlined in this handbook in order to get the most out of your new device and begin monitoring the weather with ease.

About ClimeMET

ClimeMET is a small, family-run business specialising in home and garden weather instruments. We're a team of outdoor enthusiasts made up of cyclists, surfers, dog walkers and kayakers, and we design our unique range of products from our workshop in rural Suffolk.
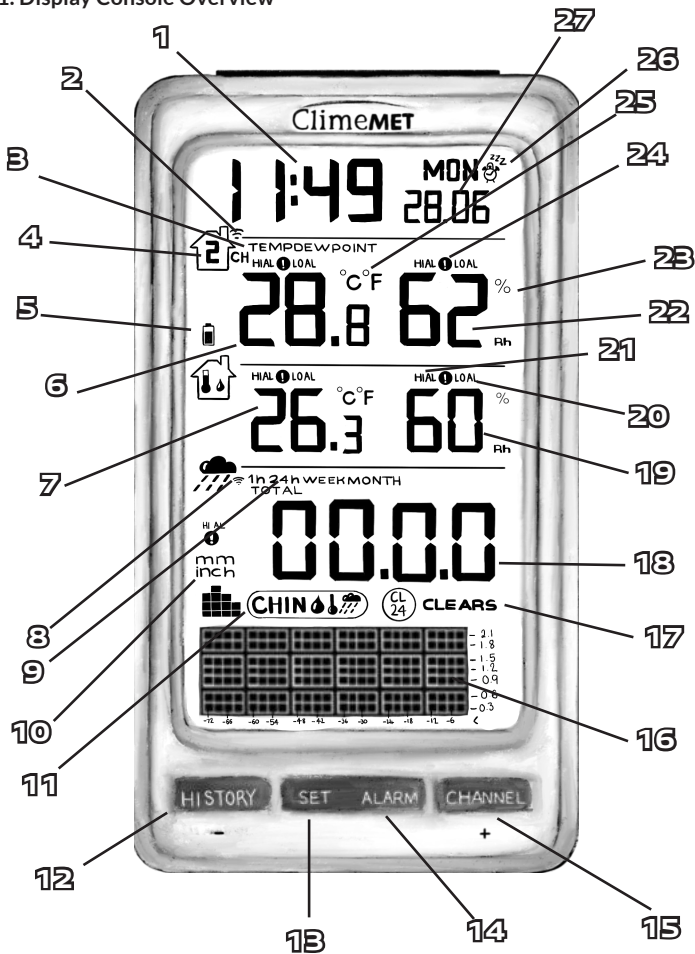
This manual should be kept in a safe place for future reference as it contains important notes on the setup and operation of your weather station.

This handbook may contain mistakes and printing errors. The information in this handbook is regularly checked and corrections made in the next issue. We accept no liability for technical mistakes or printing errors, or their consequences. All trademarks and patents are acknowledged.

Contents

1. Display Console Overview

The Display Console is used to monitor the weather in your location. It contains internal sensors capable of measuring temperature and humidity, while it can also receive remote information from the Rain Gauge and up to eight CM7 Temperature & Humidity Sensors at once via radio signal.

Your console should be kept indoors, where it will allow you to keep track of the current weather conditions at a glance.

1.	Time	15.	CHANNEL Key
2.	Channel Searching Icon	16.	History Graph
3.	Temperature/Dew Point Selection	17.	Min/Max Clearing Icon
4.	Selected Channel ID	18.	Rainfall Reading
5.	Low Battery Indicator	19.	Indoor Humidity Reading
6.	Remote Temperature Reading	20.	Low Alarm Icon
7.	Indoor Temperature Reading	21.	High Alarm Icon
8.	Rain Gauge Searching Icon	22.	Remote Humidity
9.	Rainfall Time Period	23.	Humidity Units
10.	Rainfall Units	24.	Active Alarm Icon
11.	History Graph Selection	25.	Temperature Units
12.	HISTORY Key	26.	Snooze Icon
13.	SET Key	27.	Date
14.	ALARM Key		

2. Rain Gauge Overview
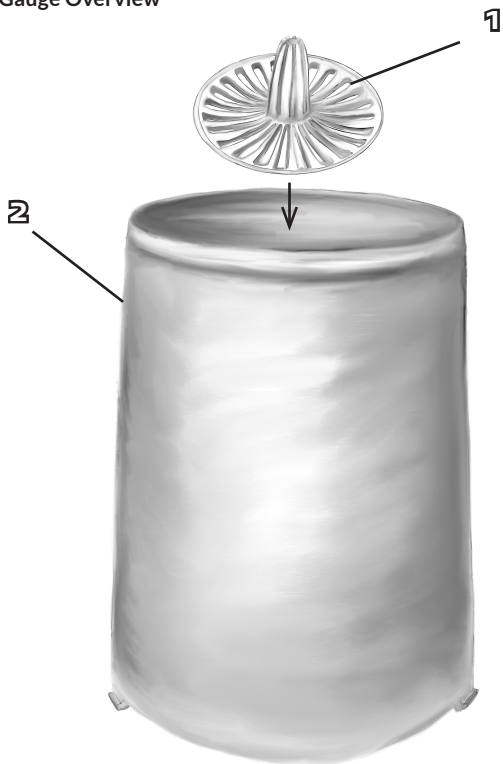
1.	Rain Gauge Filter	5.	Side Tray
2.	Rain Cone	6.	Battery Compartment
3.	Mounting Recess	7.	Bubble Level
4.	Tipping Mechanism		

The Rain Gauge measures rainfall by using a tipping mechanism that is moved after the appropriate amount of rain falls into the rain cone. An amount of 0.3mm of rainfall is required to tip the mechanism each time, which is then measured and transmitted wirelessly to the Display Console.

Note: Manually pouring water into the cone can be a good way to check that the Rain Gauge is working. However, as the mechanism is specifically calibrated to measure rainfall using a cone of this diameter, readings taken are not representative of the volume of liquid passing through.

The Rain Gauge is self-emptying, so the rainwater will run down the mechanism and into the side trays that will allow it to drain out.

Finding a good location for your Rain Gauge can make all the difference between measuring the rain accurately and taking incorrect readings, so please be sure to refer to this manual in order to get set up correctly.
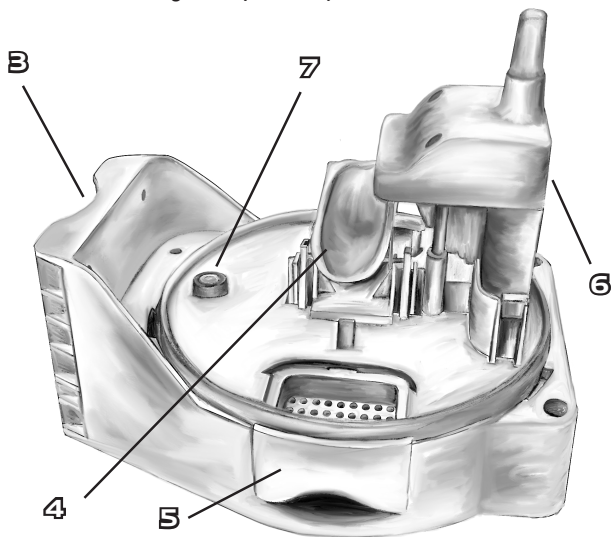
3. CM7 Temperature & Humidity Sensor Overview

The CM7 Temperature & Humidity Sensor is used to take remote measurements that are wirelessly transmitted to the Display Console. It can be used either indoors or outdoors, but is best-placed in a sheltered position within 100 metres of the console.

Each sensor can be assigned a numeric channel between 1 and 8, so be sure to adjust these if you are using multiple sensors - as detailed later in this user guide.
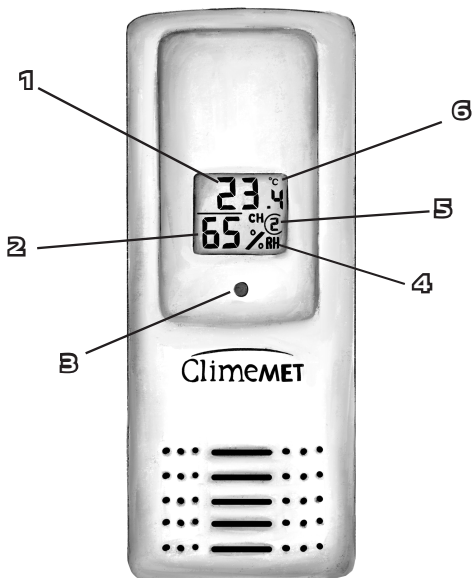
| 1.	Temperature Measurement	4.	Humidity Units
2.	Humidity Measurement	5.	Channel ID
3.	LED Indicator	6.	Temperature Units

4. Getting Started

What's in the Box?

- Indoor Display Console

- CM7 Temperature & Humidity Sensor – for use indoors or outdoors

- Outdoor Rain Gauge

- Rain Gauge Filter

- 2 x U-Bolts & 4 x Nuts for Pole Mounting

- 4 x Self-Tapping Screws for Wall Mounting

- User Guide

Getting Set Up

Setting up your new Wireless Rain Gauge is almost as simple as inserting batteries into each part and making sure that your Rain Gauge and CM7 Sensor are both within range of your Display Console. Before doing so though, there are a few steps worth following in order to customise your setup and get the most out of your CM7015. We'd recommend running through the setup guide in this order as this will ensure that nothing important is missed.

Setting up your Rain Gauge

First of all, you'll need to insert batteries into the Rain Gauge. The battery port is found atop the base of the Rain Gauge, so will not be immediately accessible. Carefully rotate the rain cone anti-clockwise to unlock it from the base, then pull it firmly upwards to remove the cone and expose the tipping mechanism.
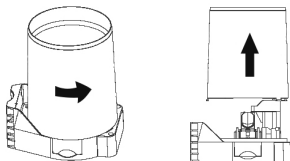
The battery compartment is located at the front of the Rain Gauge, facing away from the mounting panel. Remove the protective cover to access the battery port, as pictured below.
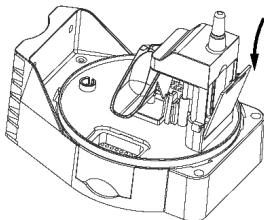

Place 4 x AAA batteries into the battery compartment, making sure that these are inserted correctly. Close the battery door and ensure that this clicks back into position. Don't re-attach the rain cone just yet, as leaving this exposed will make it easier to install the Rain Gauge outdoors in a moment.

Note: To avoid operating problems please check the polarity when inserting the batteries, as inserting them incorrectly can potentially cause permanent damage to the circuitry of the sensor. Use good quality alkaline or lithium batteries and avoid using rechargeable varieties, as these are generally unsuitable for this type of device.

Setting up the CM7 Sensor

The next part to set up is the CM7 Temperature & Humidity Sensor, which is used to measure remote temperature and humidity readings.

Before inserting the batteries, locate the Channel Selector by removing the battery cover from the rear of the CM7 Temperature & Humidity Sensor. The Channel Selector is made up of four DIP-switches and will appear as follows:
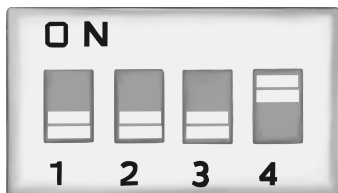
Up to eight CM7 Sensors can be used at once, so if you're looking to use more than one please ensure they are each set to different Channel IDs (numbered from 1 to 8) in order to be successfully received by the Display Console. The selected Channel ID will be shown on the small screen on each sensor, as well as on the console next to the measurements it's transmitting. It's worth noting down the Channel ID and location of each sensor so that you know where each set of readings is coming from!

The default setting is for switches 1 to 3 to be in the DOWN position, which sets the CM7 Sensor to Channel 1. The full list of different combinations for other Channel ID's can be found on Page 24. If you're setting up your station with more than one sensor, please refer to this now.

The fourth DIP switch along is responsible for setting the measurement units of each particular sensor. If it's left in the UP position it will measure the temperature in Celsius (°C) whereas moving it to the DOWN position will prompt the sensor to measure in Fahrenheit (°F) instead. Be sure to check that this is set as desired before powering the sensor up in order for it to adjust immediately. If you wish to change this later down the line, you'll also need to reset the sensor (by removing and re-inserting the batteries) to prompt this change to take effect.

Further information regarding the Channel Selector can be found on Page 23 of this handbook.

Once you've checked the channel and units of your CM7 Sensor are set correctly, power it up by inserting 2 x AAA batteries. The sensor will turn on and begin displaying temperature and humidity measurements, while also showing the Channel ID it has been set to. If you're happy with the units and the Channel ID, you can return the battery cover and screw this back into place.

It's best to get your Rain Gauge and CM7 Sensor (or Sensors) powered up before the Display Console. Doing so should ensure that the sensors are active and received quickly by the console shortly after it's turned on, as it will enter a searching phase immediately after starting up where it will try to find any sensors within range.

Setting up the Display Console

Once the Rain Gauge and any CM7 Sensors are turned on, power up the Display Console by inserting 4 x AAA batteries into the battery port found at the rear of the device. The LCD screen will turn on and a short beep will sound to signify the console is operating properly.

Note: The console will briefly display DCF when first powered up – this refers to a radio-time signal that is not used by this particular model. Your time and date can be set in the Setup Menu instead – detailed on Page 18.

After a few moments, the console will show the home screen and begin locating your Rain Gauge, along with any CM7 Sensors within range. This process can take a few minutes to complete, but please don't press any buttons until your sensor readings are being picked up as this will cause the console to stop searching. If this does happen, simply reset the Display Console by removing and re-inserting the batteries and this will prompt it to start again. When finished, the searching icon 🛜 will disappear and the Display Console can be used freely.

Finally, make sure to replace all battery covers and tighten them securely to prevent any moisture from making its way into the battery port.

Power Adaptor

If you have the additional power adaptor for use with the CM7015, follow the above process but simply plug the Display Console in using mains power instead. You can still keep batteries inserted into the console too, as this will allow it to remain powered up when mains power is not available – for example if the console is unplugged temporarily. Keeping batteries inserted will also allow the console to use these as an immediate backup in the event of a power cut, which should ensure that no measurements are lost.

If you'd like to add a power adaptor later down the line that's no problem! This part is called the CM7-PA and is available as a spare part at www.climemet.com.

Confirming Connections

Once the searching phase has been completed by the Display Console, make sure that you are receiving the following readings:

- Remote information from the CM7 Sensor

- Internal information measured by the Display Console

- A signal from the Rain Gauge (confirmed by data shown in the Rain field)

If any of these readings are missing, check that the batteries in the relevant part have been inserted correctly, then reset the Display Console by removing and re-inserting the batteries.

As long as all of the above sets of information are present, it's time to situate each part as desired – ensuring that the Rain Gauge and any CM7 Sensors remain within 100 metre transmission range of the Display Console.

Installing your Rain Gauge

Rain measurements are traditionally taken at a height of around 45cm from ground level. Aiming to install your Rain Gauge at this height should help you achieve most-accurate readings as it will be low enough to minimise interference caused by the wind, yet high enough to prevent heavy raindrops from bouncing into the rain cone and causing additional rainfall to be measured.

Most importantly, it's vital to ensure that the Rain Gauge is exposed and not being blocked by any trees or surrounding walls. Rain can fall from completely different angles depending on the weather, so be sure to consider this when looking for a suitable location. A general rule of thumb is to try to keep the Rain Gauge at twice the distance of any nearby object's height – so for example 20ft away from a 10ft tree.

It's possible that the Rain Gauge may need to be cleared if any leaves or debris create a blockage later down the line, so it's also worth considering the accessibility of this part before installing it permanently. Over time the batteries used inside the Rain Gauge will run down – replacing these tends to provide a good opportunity to clean the Rain Gauge at the same time.

When you've decided on a location, you can use the mounting recess found at the back of the Rain Gauge's base to fasten this to a mounting pole, fence post or other suitable support of up to 35mm in diameter. Use the two U-bolts and four nuts included in order to secure this in place.

Alternatively, the Rain Gauge can be affixed to a vertical surface using the four self-tapping screws provided. These can be inserted into the same four holes on the mounting panel as the U-Bolts, affording some flexibility when setting the Rain Gauge up. If using this method, just ensure that the rain cone sits above the top of this surface; otherwise some falling rain may be blocked.

Once your Rain Gauge is secure, check the bubble level built into the base to make sure that the instrument is level. The Rain Gauge uses a tipping mechanism, so it's important to make sure that the mechanism sits evenly and is able to tip properly from side to side. If the Rain Gauge is not mounted correctly, this can lead to under-recording of rainfall.

When the Rain Gauge is level, re-attach the rain cone to the base and lock this back into place by lining it up correctly and firmly turning it clockwise. Finally, make sure the Rain Gauge Filter is placed inside the top of the cone to prevent falling leaves or other large items from causing a blockage.
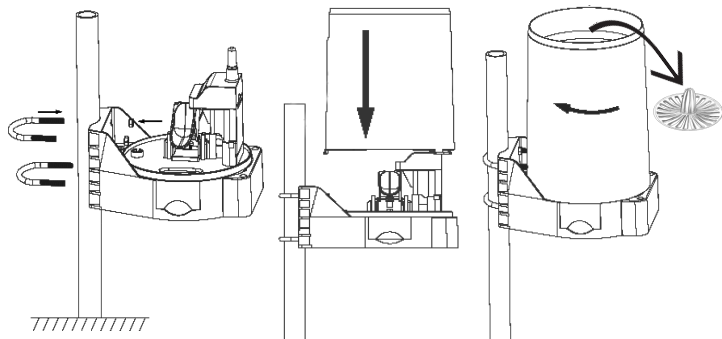
Situating your CM7 Sensor

Your CM7 Sensor can now been relocated as desired, ensuring it also remains within 100-metre transmission range of the Display Console.

To achieve accurate temperature measurements, avoid mounting the sensor in a position where it will be subject to direct sunlight – your sensor will measure most accurately in a shaded, North-facing position.

Exposure to direct sunlight can have a massive impact on what the CM7 Sensor measures as it will cause the sensor itself to warm up and retain heat for some time - meaning you won't be taking a true air temperature measurement.

Look for a suitable position where the sensor can have shelter from the sun and will not be influenced by other external factors. For example - be sure to avoid spots that might be in the path of an air conditioning unit, or in the proximity of a dark surface that will radiate heat on a sunny day.

The CM7 Sensor can be situated either indoors or outdoors, but when located outside it's best to consider the long-term effects of direct sunlight and prolonged rainfall – placement that provides shelter from both will help to extend the lifespan of your sensor. The sensor is designed for outdoor use and can be considered weatherproof, but it is not fully waterproof and is unable to withstand being submerged.

The sensor can be placed vertically or horizontally if suitable, or attached more securely using the keyhole hook on the rear side.
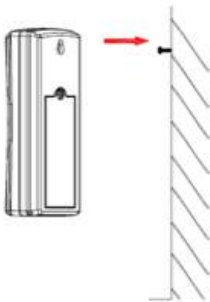
Situating your Display Console

The Display Console can receive data from the CM7 Sensors at a maximum distance of 100 metres, but this may be impacted slightly by trees, or walls made from certain materials. If your readings are intermittent, it may be worth experimenting with the placement of the console to ensure all sensors are being picked up successfully, otherwise some channels may not be present.

For troubleshooting, please see Page 35.

The Display Console can be placed on any flat surface, using the fold-out stand found on the back of the screen. Alternatively, it can be hung vertically using the keyhole hook also on the back of the console.

5. Display Console

Using the Console

The Display Console receives information wirelessly from the outdoor Rain Gauge and the CM7 Sensor, as well as measuring indoor temperature and humidity information using sensors located within the console itself. Once the Rain Gauge and any CM7 Sensors are operational and positioned suitably, it's worth taking some time to familiarise yourself with the console's key features and ensure it is set up as desired. Most importantly, you'll need to configure the console using the Setup Menu, which should only take 5-10 minutes to complete.

The Display Console has a total of five keys used to navigate and use its various functions – four underneath the screen: **HISTORY**, **SET, ALARM, CHANNEL**, and one on the top of the console: **SNOOZE/LIGHT**. The **HISTORY** and **CHANNEL** keys also double as ⊟ and ⊞ respectively when adjusting numeric values such as date and time, illustrated by the symbols beneath these keys.

The **HISTORY**, **SET**, **ALARM** and **CHANNEL** keys are used to access and set various features of the display console, whereas the **SNOOZE/LIGHT** key is used to silence any alarms or simply turn the backlight on. Pressing the **SNOOZE/LIGHT** key once will turn the backlight on for a period of 5 seconds.

Extended Backlight

You can also hold the **SNOOZE/LIGHT** key down for 3 seconds, until LED ON is shown briefly on the Time and Date section of the console. This will cause the backlight to stay illuminated for up to 30 minutes, or until it's turned off manually by pushing and holding the key again (you should see LED OFF shown in the same place). If your console is plugged into mains power using an adaptor, this backlight will stay on until manually turned off again.

Console Key Tone On/Off

The beeping sound emitted by the console can be helpful in making sure that key presses have been registered. However, this can be turned off if preferred. To do so, simply press and hold the **HISTORY** key for 3 seconds while on the home screen until BUZZ OFF 🐝 is displayed at the top of the console confirming this has been disabled. To turn the sound back on, just do the same again and it will be re-enabled. For the purposes of this manual we'll assume that key tones are enabled and will reference pressing certain keys until a beep is heard.

Channel Selection

The Channel ID for the selected sensor will be shown on the second row of the Display Console. This row will display temperature and humidity measurements provided by the CM7 Sensor that is set to this channel.

Press the **CHANNEL** key to move between available sensors in sequential order from 1 to 8. After the final sensor has been selected, press the **CHANNEL** key on more time and the ↻ icon will be displayed next to the Channel ID. This means that the Sensor Scroll Mode is active, which will set the console to automatically scroll between all active sensors in 5-second intervals. To turn this mode off, simply press the **CHANNEL** key again to navigate to the desired sensor instead.

Sensor Search Mode

If communication is ever lost between your Display Console and CM7 Sensors, it may be necessary to prompt the console to re-establish these connections.

If a specific channel is lost – press the **CHANNEL** key until the Channel ID for the missing sensor is displayed, then press and hold the **CHANNEL** key for 3 seconds to enter the Sensor Search Mode. You will see that CH is flashing followed by a number from 1 to 8 – make sure that this corresponds to the sensor you are looking to re-establish the connection with, then press the **SET** key to prompt the Display Console to do so. The searching icon 📶 will display next to the Channel ID for up to 3 minutes, showing that the console is now looking for signals from this Channel ID. Once the signal has been found, remote readings will return and the searching icon will no longer be displayed.

If your Rain Gauge signal is lost – press and hold the **CHANNEL** key for 3 seconds to enter the Sensor Search Mode as before. The Channel ID will be flashing, but this time press the ⊞ key once to scroll to the 'RAIN' setting instead. Once this option is flashing, press the **SET** key to prompt the Display Console to seek to re-establish a connection with your Rain Gauge. The searching icon 🛜 will be shown on the Rain section of your console until the signal is received, at which point your rainfall readings will return.

Finally – if you wish to prompt your Display Console to refresh all connections with your Rain Gauge and all CM7 Sensors – press and hold the **CHANNEL** key for 3 seconds to enter the Sensor Search Mode. This time, press the ⊞ key twice to scroll to the 'ALL' option. Press the **SET** key now to prompt the Display Console to seek to re-establish a connection with all active channels. Searching icons 🛜 will be shown next to your rainfall readings and the remote channel icon for a period of up to 10 minutes while the console is looking to reacquire all active signals. This procedure can be useful when setting up multiple CM7 Sensors at one time.

Setup Menu

Once the Display Console is receiving information from your Rain Gauge and CM7 Sensor, the most important thing you'll need to do is configure the Display Console by running through the Setup Menu. This will allow you to set the time and date of the console, as well as tweak details such as preferred units of measurement to your liking. You can leave the Setup Menu at any time by pressing the **SNOOZE/LIGHT** key found on top of the console, which will bring you back to the home screen.

To enter the Setup Menu, push and hold the **SET** key for 3 seconds and the console will beep, with the first setting (12/24 Hour Time Format) flashing in the top section of the screen. Pressing the **SET** key now will scroll through to the next option in the Setup Menu, eventually returning back to the home screen. While each different option is flashing, using the ⊟ (**HISTORY**) or ⊞ (**CHANNEL**) keys will allow you to toggle between various settings, or increase/decrease values as needed. If no key is pressed for 30 seconds at any point, the Setup Menu will close and your console will revert to the home screen.

The order of the options in the Setup Menu is as follows:

12/24 Hour Time Format

Time Setting – Hour

Time Setting – Minutes

Day/Month Format

Date Setting – Month

Date Setting – Day

Date Setting – Year

Min/Max Clearing

Temperature Units

Rainfall Units of Measure

12/24 Hour Time Format: This will toggle the displayed time between a 12 or 24 hour clock format. Use either the ⊟ or ⊞ keys to switch between the two settings.

Time Setting – Hour: Used to manually set the time. Use the ⊟ or ⊞ keys to increase/decrease this value.

Time Setting – Minutes: Used to manually set the time. Use the ⊟ or ⊞ keys to increase/decrease this value.

Day/Month Format: Toggle between Day/Month or Month/Day format for the date.

Date Setting – Month: Select the month of the year using the ⊟ or ⊞ key.

Date Setting – Day: Select the day of the month using the ⊟ or ⊞ key.

Date Setting – Year: Select the year using the ⊟ or ⊞ key.

Min/Max Clearing: The Min/Max Clearing feature causes the console to automatically reset all minimum and maximum values at midnight. Enabling this feature can therefore make it easier to check the highs and lows for temperature and humidity each day. If you'd prefer to manually reset these measurements to take readings over a different time period (for example – keeping track of the highest temperature over a week) this feature can be disabled at any time. Pressing the ⊞ key will toggle this feature on (with the CL24 icon displayed) or off (with this section empty). More information on minimum and maximum readings can be found on Page 27.

Temperature Units: Select the desired units of measurement for temperature. Use the ⊞ key to toggle between C (Celsius) and F (Fahrenheit) while either icon is flashing next to the temperature readings.

Rainfall Units: Select the desired units of measurement for rainfall. Use the ⊞ key to toggle between mm (Millimetres) and inch (Inches) while either icon is flashing next to the rainfall readings. Please note, if your Rain Gauge is not connected, this menu option will not appear.

Custom Display Mode

The second function of the **SET** key is using it to access a separate menu that will allow you to customise certain parameters shown on the Display Console. To enter the Custom Display mode, press (do not hold) the **SET** key so that the console beeps. Pressing the **SET** key again will advance to the next customisable section.

Pressing the **SNOOZE/LIGHT** key at any point will exit this mode and revert to the home screen. When one of these options is changed, it will affect which setting is displayed as default on the home screen allowing you to customise your Display Console to your preference.

The following settings are available in this order:

Date Display – Date or Year

Outdoor Temperature or Dew Point

Rainfall Window – 1 Hour, 24 Hour, Week, Month or Total

Graph Timeframe – 24 Hour or 72 Hour

Date Display – Date or Year: Pressing the ⊞ key while this section is flashing will allow you to toggle between having the current date or current year shown below the weekday, found on the first row of the Display Console.

Outdoor Temperature or Dew Point: While the outdoor temperature section is flashing, pressing the ⊞ key will toggle between a temperature reading and dew point calculation. This is also a straightforward method of checking dew point readings as and when desired.

Rainfall Window: While your rainfall value is flashing, pressing the ⊞ key will allow you toggle between readings received over the last 1 Hour, 24 Hours, Week, Month or Total. This can also be a simple way to quickly check rainfall readings received over different periods.

This option will also allow you to clear your rainfall figures. To do so, press the ⊞ key until TOTAL rainfall is selected. While the total rainfall is flashing, press and hold the **SET** key for 5 seconds until the rainfall total resets to zero.

Graph Timeframe: Press the ⊞ key to toggle the graph to show historic data in a 24-hour or 72-hour scale. When the 24-hour scale is selected, the scale will be highlighted above the graph, whereas the 72-hour scale will display below the graph.

This graph can be used to track indoor temperature, indoor humidity, outdoor temperature, outdoor humidity and rainfall. For steps on how to view this information, please refer to Page 26.

Viewing and Resetting Rainfall

The Display Console will allow you to quickly view your rainfall measurements over different time periods. While on the home screen, press (do not hold) the **SET** key three times and your rainfall reading will begin to flash. While this value is flashing, pressing the ⊟ or ⊞ keys will toggle between the following options:

1 Hour

24 Hours

Week

Month

Total

1 Hour: This option will show readings measured since the current hour began, clearing automatically on the hour.

24 Hours: This option will show readings measured since the current day began, clearing automatically at midnight. This provides a quick way to check the daily rainfall.

Week: This option will display all readings measured since the current week began, allowing you to monitor rainfall throughout the week. This value will reset to zero at midnight on Saturday night, providing Sunday-to-Saturday weekly data.

Month: This option will display all readings measured since the current month began. This value will reset to zero at 0:00 on the first day of every month.

Total: Finally, this option will display all rainfall measured by the Rain Gauge since being manually reset. It can therefore be used to monitor rainfall over custom periods of time. To reset the total rainfall, press and hold the **SET** key for 5 seconds while this value is selected.

6. CM7 Temperature & Humidity Sensor

Configuring Channels

The Channel ID of each sensor can be changed at any time using the Channel Selector found underneath the battery cover. When setting or changing the Channel ID of a sensor, please note you'll also need to remove and re-insert the sensor batteries in order for this change to take effect. Any time a Channel ID setting is changed, you will also need to carry out the Sensor Search Mode on your Display Console (found on Page 17 of this handbook) to prompt all connections to be refreshed. Each sensor can use a numeric channel from 1 to 8, but if a particular channel is being used by multiple sensors only one of these will be picked up on the console, so be sure to select unique Channel ID's for each of your sensors.

To change the channel of a sensor, locate the Channel Selector by removing the battery cover from the rear of the relevant CM7. The Channel Selector is made up of four DIP-switches and will appear as follows:
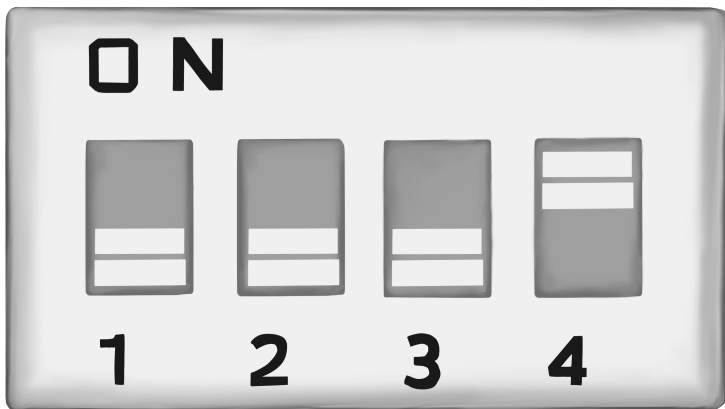
Remove the batteries from the sensor, then carefully move the first three DIP switches to either the UP or DOWN positions (it may be easiest to use a narrow implement such as a pencil to do this) in order to set the Channel ID as desired. Each numbered channel uses a different combination of up and down switches, as shown:

DIP SWITCH				FUNCTION
1	2	3	4	
DOWN	DOWN	DOWN	- - -	Channel 1
DOWN	DOWN	UP	- - -	Channel 2
DOWN	UP	DOWN	- - -	Channel 3
DOWN	UP	UP	- - -	Channel 4
UP	DOWN	DOWN	- - -	Channel 5
UP	DOWN	UP	- - -	Channel 6
UP	UP	DOWN	- - -	Channel 7
UP	UP	UP	- - -	Channel 8
- - -	- - -	- - -	DOWN	°F
- - -	- - -	- - -	UP	°C

Note: Remote alarms can only be used with a CM7 Sensor set to Channel 1 - if you're looking to make use of this feature please therefore make sure your Channel ID's are set accordingly.

The fourth DIP switch is only used to adjust the temperature units shown on the sensor's screen. The UP position will set the units to °C Celsius, whereas moving the dip switch to DOWN will change this to °F Fahrenheit. This does not affect the units shown on the console itself, which can be changed manually in the Setup Menu – please refer to Page 19 for instructions on how to do so.

Once you have the DIP switches in the correct position for the desired channel, re-insert the batteries and return the battery tray to its position – making sure to tighten the screw to ensure no moisture finds its way inside.

To check that the sensor is being received, press the **CHANNEL** key on the Display Console to move between available sensors in numerical order from 1 to 8. If your sensor is not picked up automatically within 10 minutes, follow the Sensor Search procedure detailed on Page 17.

Low Battery Indicator

Over time, the batteries in the CM7 Sensor will run down and need to be replaced. We recommend not using rechargeable batteries, as these do not tend to be compatible with this type of device. For the best results, lithium-based batteries will be most dependable and have the longest lifespan. When the battery power of the CM7 is low, a battery icon will display next to the sensor's temperature measurement on the indoor console to indicate that replacements are required.

Adding More Sensors

Adding extra CM7 sensors to your CM7015 later down the line is as straightforward as inserting batteries into a new sensor and ensuring that it is set to a different channel to any others currently in place. Once the sensor is powered up, use the Sensor Search Mode detailed on Page 17 to prompt the console to look for any available sensors. The console will then look for any sensors within range for a period of 10 minutes, during which all active sensors should be received.

7. History Graph

The History Graph can be used to track changes in various weather parameters over time. While on the home screen, press the **HISTORY** key to toggle between the different graphs. Keep pressing the **HISTORY** key to toggle between the five available graphs at any time. When selected, the name of the parameter shown by each graph will be displayed briefly at the top of the screen, along with the relevant icon shown in the Graph Display Box. This icon will be displayed at all times, so it's simple to tell which graph is currently being displayed.

The following graphs are available, along with the relevant graph icons for each:

Indoor Temperature	**IN** 🌡
Indoor Humidity	**IN** 💧
Remote Temperature (for the currently selected Channel ID)	CH 🌡
Remote Humidity (for the currently selected Channel ID)	CH 💧
Rainfall	🌧

If viewing a remote temperature or humidity graph, this will always show information from the currently selected channel. If you'd like to view remote temperature/humidity information from a different channel, be sure to select the required channel first (using the **CHANNEL** key) before navigating to one of the remote graphs.

The timeframe of each graph can also be changed between the last 24-hours and the last 72-hours using the Custom Display Mode – please refer to Page 20 for information on how to do this.

8. Minimum and Maximum Records

The CM7015 Display Console is capable of storing various minimum and maximum records, helping you to keep track of the extent that the weather has changed over a certain period of time.

Viewing Minimum and Maximum Records

Viewing your minimum and maximum records for temperature and humidity can be done with ease. While on the home screen, press (don't hold) the **ALARM** key. MAX will be displayed at the top of the screen, along with your maximum readings for indoor/outdoor temperature and humidity. While these figures are displayed, pressing the **HISTORY** key will allow you to also toggle between maximum outdoor temperature and dew point readings, while pressing it multiple times will navigate across maximum rainfall readings over periods of 1 hour, 24 hours, Week and Month.

Pressing the **CHANNEL** key will also allow you to quickly toggle between all available channels to easily view maximum records for each sensor.

Pressing the **ALARM** key twice from the home screen will display your minimum readings (you should see MIN is now displayed at the top of the screen). Again, pressing the **HISTORY** key will allow you to toggle between minimum records for outdoor temperature and dew point.

Pressing the **CHANNEL** key will also allow you to quickly toggle between all available channels to easily view minimum records for each sensor.

Resetting Minimum and Maximum Records

While viewing either the minimum or maximum values as detailed above, pressing and holding the **SET** key down for 3 seconds will cause the selected set of records to be cleared. Doing so will reset minimum/maximum records to the current measurements, until they are reset again manually or cleared automatically at midnight if Min/Max Clearing has been enabled.

Min/Max Clearing Mode

The Min/Max Clearing feature will prompt the CM7015 to automatically clear all minimum and maximum records each day at midnight. This means you will not need to clear these manually, and can simply take readings at whatever point in the day is desired.

To enable/disable this feature, navigate through the Setup Menu and toggle this on/off as preferred. When this feature is enabled, the CL24 icon will be shown directly below the rainfall section of the Display Console. Further information on how to access this feature can be found on Page 20.

9. Alarm Mode

The CM7015 can utilise various alarms, including customisable alerts for time, temperature, humidity, dew point and rainfall. Alarms can be set for outdoor temperature and humidity, but only for sensors set to Channel 1, so if you are looking to make use of external alarms please ensure that the sensor to be used is set correctly using the Channel Selector.

Alarm Configuration

To view current alarm settings (regardless of whether the alarms are active or not) press and hold the **ALARM** key for 3 seconds to enter Alarm Mode and view the High Alarm Page – 'HI' should be displayed in the Date section of the console.

Press the **ALARM** key a second time to view Low Alarm settings – you should now see that 'LOW' is displayed in the Date section of the console while these are showing.

Pressing the **ALARM** key a third time will return back to the home screen.

Setting Alarms

To set an alarm, first navigate to the Alarm Mode by pressing and holding the **ALARM** key down for 3 seconds, as detailed above. Now, press and hold the **SET** key for 3 seconds to enter the menu where you can navigate between various parameters to set different High or Low alarms.

Each time you press the **SET** key, the next available parameter will be flashing to indicate this is selected, along with either 'HI' or 'LOW' shown in the top row of the console to indicate which type of alarm this will be.

The following alarms are available in this order:

Time Alarm – Hour

Time Alarm – Minutes

Outdoor Temperature – High Alarm

Outdoor Temperature – Low Alarm

Outdoor Humidity – High Alarm

Outdoor Humidity – Low Alarm

Dew Point – High Alarm

Dew Point – Low Alarm

Indoor Temperature – High Alarm

Indoor Temperature – Low Alarm

Indoor Humidity – High Alarm

Indoor Humidity – Low Alarm

1-Hour Rainfall Alarm

24-Hour Rainfall Alarm

While each parameter is flashing, use the ☐ and ☐ keys to decrease or increase the desired alarm value as required. When you have the selected the desired value, press the **ALARM** key and the alarm icon ❗ should now display next to this parameter while on the home screen indicating that the alarm is active. When the required conditions are met, the alarm will now sound.

As an example, to set an alarm for when indoor humidity reaches as high as 80%:

- Press and hold the **ALARM** key for 3 seconds to enter the Alarm Mode.

- Then, press and hold the **SET** key for 3 seconds to enter the menu for setting alarms.

- Now press (do not hold) the **SET** key to navigate to the desired parameter, which should start flashing. In this example we're looking for the indoor humidity High Alarm, so we'll need to press the **SET** key 10 times to navigate past the other types of alarm available.

- While 'HI' is displayed at the top of the screen and the indoor humidity value is flashing, use the ▭ or ⊞ keys to adjust this alarm setting to 80%.

- Once the desired value has been reached, press the **ALARM** key and the High Alarm icon should now display next to the indoor humidity value confirming that the alarm has been set. Let the console automatically return back to the home screen and you should see that the High Alarm icon is now displayed next to the indoor humidity value – signifying that this alarm is active.

Disabling Alarms

To disable any alarm settings in order to prevent them from sounding in future, follow the above steps to navigate to the relevant parameter and simply use the **ALARM** key to toggle the alarm off again, so that the alarm icon ❶ is not displaying. If you want to cancel all active alarms, just make sure that none of the parameters on your console have active alarm icons shown next to them!

To leave the Alarm Mode at any point and return to the home screen, just press the **SNOOZE/LIGHT** key found on top of the console.

Snooze Mode

When an alarm sounds, pressing the **SNOOZE/LIGHT** key on top of the console will silence the alarm for 5 minutes, leaving only a flashing icon next to the related parameter. This will continue until the alarm is toggled off completely using the steps detailed above.

10. Calibration

Temperature and humidity measurements shown on the CM7015 console can be calibrated manually if desired. This is not typically required; however it can be an option if you wish to calibrate the device to take measurements in-line with another specific instrument nearby. For example – comparing temperature readings between digital and liquid thermometers will generally produce different results, as these devices can retain heat at vastly differing rates. If you'd prefer these different instruments to measure in-line with one another, the calibration mode will allow you to tweak the measurements on the console by adding or subtracting from the true measured value. This will not adjust the measurements shown on the CM7 Sensor, but only the readings as displayed on the internal console.

Calibration is only useful if you have a reliable, previously calibrated source you are able to directly compare readings against. It's not recommended to compare readings measured by this device to those you may see online, or weather forecasts on television. A difference of even a few feet in distance can produce vastly different measurements, and many of these resources use averages or update hourly throughout the day. The purpose of this type of weather station is to measure the current conditions in your immediate surroundings, so making comparisons with stations elsewhere will likely lead to varying results!

Please also keep in mind that calibrating the CM7015 to match another instrument will not guarantee identical readings at all times. A measurement accuracy of +/- 1°C for both instruments would mean of a difference of 2°C is still within expected range for these devices as the temperature rises or falls from the calibrated value.

Temperature Calibration

While on the home screen, press and hold the **SET** & **CHANNEL** keys together for 5 seconds to enter the temperature calibration mode – the indoor temperature reading will begin to flash.

While this is flashing, pressing the ▭ or ⊞ keys will decrease/increase an adjustment value in small amounts, which will then be applied to the reading measured by the console. Press the **SNOOZE/LIGHT** key to select this value and return to the home screen.

To move to the outdoor temperature calibration, instead of pressing **SNOOZE/LIGHT**, press the **SET** key again and this parameter will now begin to flash. As before, you can use the ⊟ or ⊞ keys to enter an adjustment value as desired. Pressing the **SET** key again will allow you to toggle between any available CM7 Sensors to adjust readings from different channels.

To revert back to the true readings for any of these measurements in future, follow the same process and adjust these values back to zero.

To leave the calibration mode and return back to the home screen, press the **SNOOZE/ LIGHT** button at any time.

Humidity Calibration

While on the home screen, press and hold the **SET** & **HISTORY** keys together for 5 seconds to enter the humidity calibration mode – the indoor humidity reading will begin to flash.

While this is flashing, pressing the ⊟ or ⊞ keys will decrease/increase an adjustment value in small amounts, which will then be applied to the reading measured by the console. Press the **SNOOZE/LIGHT** key to select this value and return to the home screen.

To move to the outdoor humidity calibration, instead of pressing **SNOOZE/LIGHT**, press the **SET** key again and this parameter will now begin to flash. As before, you can use the ⊟ or ⊞ keys to enter an adjustment value as desired. Pressing the **SET** key again will allow you to toggle between any available CM7 Sensors to adjust readings from different channels.

To revert back to the true readings for any of these measurements in future, follow the same process and adjust these values back to zero.

To leave the calibration mode and return back to the home screen, press the **SNOOZE/ LIGHT** button at any time.

11. Specifications

Radio Signal:

Transmission Range: 100m in line of sight, measured in an open field. Obstructions such as trees, walls and so on will impact this range in varying amounts dependent on type of material:

Medium Material	RF Signal Strength Reduction
Glass (untreated)	5-15%
Plastics	10-15%
Wood	10-40%
Brick	10-40%
Concrete	40-80%
Metal	90-100%

Transmission Frequency: 433 MHz

Update Interval:

60 Seconds from CM7 Sensor

60 Seconds from CM7-RG Rain Gauge

Measurement Specifications:

Measurement	Range	Accuracy	Resolution
Indoor Temperature	0 to 60 °C	± 1 °C	0.1 °C
Outdoor Temperature	-40 to 60 °C	± 1 °C	0.1 °C
Indoor Humidity	10 to 99 %	± 5%	1 %
Outdoor Humidity	10 to 99%	± 5%	1 %
Rain	0 to 9999mm	±1 mm	0.3mm

Power Consumption:

Display Console: 4 x AAA 1.5V Batteries or 6V Adaptor

Rain Gauge: 4 x AAA 1.5V Batteries

CM7 Sensor: 2 x AAA 1.5V Batteries

Battery Life:

Display Console: Dependent upon battery quality, but minimum of 12 months as long as strong reception from CM7 Sensor. Intermittent reception may reduce battery life.

Rain Gauge: Dependent upon battery quality, but minimum of 12 months in normal usage. Lithium batteries will work more-reliably in colder climates below 20°C.

CM7 Sensor: Dependent upon battery quality, but minimum of 12 months in normal usage. Lithium batteries will work more-reliably in colder climates below 20°C.

12. Support

Often, problems that appear to develop with this type of device actually have a cause that may be easy to miss, but should be straightforward to resolve. Below is a list of the most common problems and the steps we'd suggest in order to address them.

Wireless sensor is not being received by the console; instead the console is showing dashes

If the reception from a CM7 Sensor is lost, dashes will be displayed on the Display Console instead of numeric measurements. This can be due to a weak signal caused by distance, obstruction or interference from another device nearby. If you lose signal from a CM7 Sensor, we'd suggest checking the following:

- Ensure the CM7 is powered up and working. If the LCD display window is not showing measurements, the sensor will not be operational and may require a change of batteries.

- Move the console and sensor closer together to see if readings return. Leave them at a distance of around 2 metres apart for a period of 15 minutes – if your readings return, then the two parts were either too far apart or having the signal blocked by obstructions in the area. The transmission range of the sensor is 100 metres, but trees and thick walls can reduce this. Try to plan the placement of these parts so that the impact of distance or obstructions is minimised.

- Make sure that the CM7 Sensor is also not transmitting through large obstructions such as solid metal (which can act as a radio frequency shield) or earth barriers (if placed in a hilly environment).

Once the above conditions have been checked, select the missing channel on the Display Console, then press and hold the **CHANNEL** key down for 3 seconds. The searching icon 🛜 will be displayed and the console will re-establish the connection with the relevant sensor**.**

Temperature readings appear to measure too high

Check the placement of your CM7 Sensors. If the sensor is receiving any direct sunlight during the day, this will heat up the case of the sensor. As this heat is retained, it will also affect the temperature being measured and lift it above the true value.

Make sure that the sensor is not subject to direct sunlight – or other nearby sources of heat – as this is the best way achieve accurate readings.

Another possible cause of temperature measurements over-reading is the type of batteries being used. Certain batteries can heat up slightly when in use, so this could potentially cause the temperature sensor to measure slightly higher than usual. Use good quality lithium batteries (and avoid rechargeable varieties) in order to minimise the effects of this.

If your outdoor sensor is producing a reading that is extremely high (and not realistically possible) it could be due to some moisture within the outdoor sensor. Bring this part inside, remove the batteries and leave it in an area with low humidity (such as an airing cupboard) for 48 hours to allow it to dry out. When you re-insert the batteries, temperature and humidity readings should be correct. Remember to use the Sensor Search Mode detailed on Page 17 to quickly re-establish this connection with the console.

Indoor and remote temperature readings do not match when placed in the same location

The differing shapes and sizes of these parts can cause them to warm and cool at slightly different rates. In normal usage, if the two parts are placed side-by-side in the same environment and given time to settle, measurements should match very closely. The error margin for each part is +/– 1°C, so in practice this difference could be up to 2°C.

Temperature readings can be calibrated manually if this is preferable – please refer to Page 31 if this would be required.

Indoor and remote humidity readings do not match when placed in the same location

Similar to the temperature readings, the console and CM7 Sensor should produce the same readings if placed next to each other in an identical environment. The sensor accuracy is +/− 5%, so a difference of up to 10% may still sometimes be possible in these conditions.

Humidity readings can be calibrated manually if this is preferable – please refer to Page 32 if this would be required.

Display Console screen is faded and hard to read

The contrast of the console will dim as the batteries begin to run down. If the display of your console is becoming weak, replacing the batteries should solve the issue. Alternatively, you can purchase a CM7-PA Power Adaptor to provide a constant power source.

Rainfall readings are lower than expected

If your measured rainfall is lower than you'd expect to see, this tends to be due to the placement of the rain gauge. Check that rain isn't being blocked by any obstacles nearby, as this could easily be preventing rainfall from reaching the Rain Gauge in order to be measured.

If the Rain Gauge is placed over a metre in height, it's also possible that the wind could be affecting your readings. Blustery wind can blow the rainfall in different directions, meaning it would be less likely to fall into the rain cone as intended. If your rainfall readings consistently look to be low, assess the height of the rain gauge to determine if the wind could be a factor.

It's also worth checking the mechanism itself, located beneath the rain cone. This mechanism functions like a seesaw and needs to be able to tip fully in both directions in order for rainfall to be measured. Over time, general debris and insects can find their way inside the rain cone and physically block the mechanism from tipping completely. If this is the case, you'll need to clean around the mechanism to ensure that nothing is in its way and stopping it from moving properly.

Rainfall readings are higher than expected

If your rainfall readings are higher than you'd expect, it's possible that the mechanism is being physically moved by something other than the rain. Check the angle and height of the Rain Gauge – if it's exposed to the wind, the wind itself could be physically blowing the mechanism back and forth, which would simulate rainfall. You could also check the method of installation – for example, if the Rain Gauge is secured to a fence that is being blown in the wind, this could cause the mechanism to shake and produce the same outcome.

No rainfall measurements are being received – readings are displaying zero

If no rainfall readings are being received whatsoever, there could be a blockage preventing any rain from even reaching the mechanism. Remove and clean the cone to make sure this is clear, while also ensuring that the Rain Gauge Filter is in place.

No rainfall measurements are being received – dashes are shown instead

If you are seeing dashes where your rainfall readings should be, this will likely be to do with the Rain Gauge not being properly powered. Replace the batteries in this part to make sure that the Rain Gauge is turned on and being received by your Display Console. Check the battery port for any dirt or corrosion that could be preventing the batteries from making a successful connection and carefully clean this if required.

If you find that you have any issues with this system our team will be more than happy to help – you can reach us via email at sales@climemet.co.uk.

ClimeMET

Helping you make the most of the great outdoors

Discover more at **www.ClimeMET.com**

Share a picture of your new weather station and tag us in it for a chance to be featured on our social media channels.

@ClimeMET