

WEATHER ALARM WR

Operation Manual

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OPERATION

The Weather Alarm will activate an output whenever the wind speed exceeds a programmed wind speed set point or the rain sensor detects a programmed level of moisture on the sensor surface. The output will force an environmental controller to close any open roof vents to the first programmed position. This output may also be connected to warning lights, an audible alarm or automatic dialer.

Depending on selected options the Weather Alarm has the ability to display wind speed, temperature, humidity or the rain sensor reading. Use the number keys one, two, three and four to change which value is being displayed. A horizontal bar on the far left display will light up to indicate the value being displayed.

- 1 Key – Wind Speed
- 2 Key – Temperature
- 3 Key – Humidity
- 4 Key – Rain sensor reading

WIND SPEED DISPLAY

While wind speed is displayed the top horizontal bar of the far left display digit will be on. In the example below the top bar is on indicating that the current wind speed is 15 miles per hour.



Figure 1. Wind speed 15 miles per hour

TEMPERATURE DISPLAY

While temperature is displayed the middle horizontal bar of the far left display digit will be on. In the example below the middle bar is on indicating that the current temperature is 72 degrees Fahrenheit.

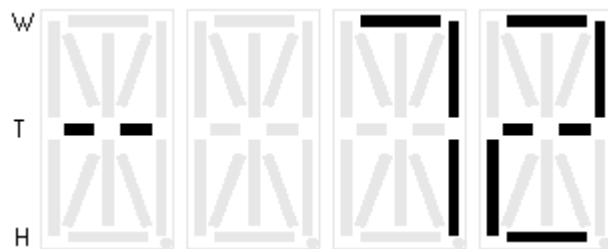


Figure 2. Temperature 72 degrees Fahrenheit

HUMIDITY DISPLAY

While humidity is displayed the bottom horizontal bar of the far left display digit will be on. In the example below the bottom bar is on indicating that the current humidity is 63 percent.

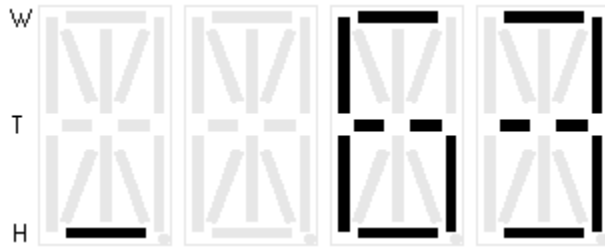


Figure 3. Humidity 63%

RAIN SENSOR READING DISPLAY

While rain sensor reading is displayed no horizontal bars in the bar left display digit will be on. In the example below the rain sensor reading is 88. The rain sensor reading is a number 0 - 99. The higher the rain sensor reading the wetter the sensor currently is.

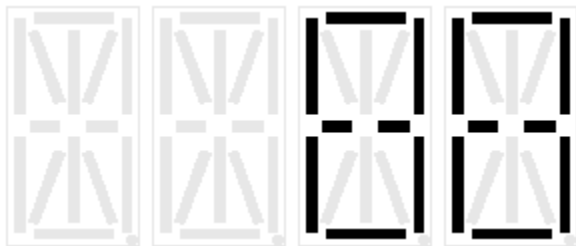


Figure 4. Rain sensor reading is 88 – the sensor is very wet

ALARM MESSAGE DISPLAY

If either a wind alarm or a rain alarm occurs the controller will display the type of alarm by lighting up a display segment below the word wind or above the word rain. If a wind alarm occurs the top horizontal bar in the second digit from the left will be on. If a rain alarm occurs the bottom horizontal bar in the second digit from the left will be on.

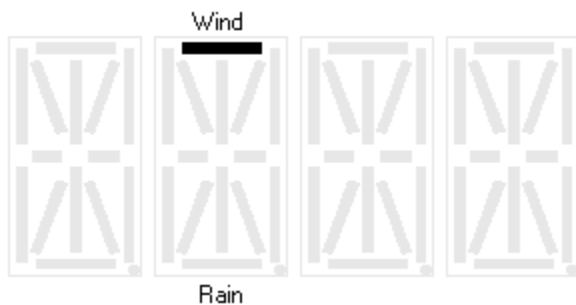


Figure 5. Wind alarm is occurring

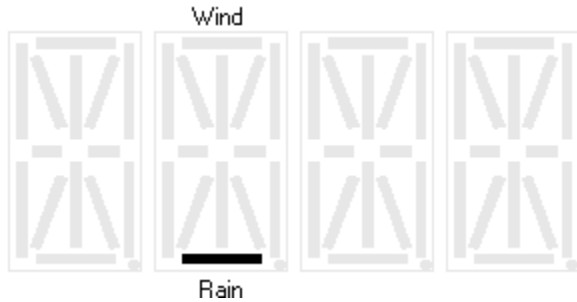


Figure 6. Rain alarm is occurring

WARNING MESSAGE DISPLAY

If a potential problem occurs the Weather Alarm will display a warning message.

| WARNING | MEANING |
|----------------|------------------------------------------------------|
| W1 | Activation Set Point is less than Drop Out Set Point |

OUTPUTS

The Weather Alarm has four relay outputs – rain alarm, rain sensor heater, wind alarm, and a combined wind and rain alarm.

RAIN ALARM

The rain alarm output will activate when the moisture level on the rain sensor exceeds the rain sensitivity level. The output will remain activated until the moisture level drops below the rain sensitivity level.

WIND ALARM

The wind alarm output will activate when the wind speed exceeds the activate set point. The wind speed must remain above the activate setpoint for the length of time specified by the activate delay setting. The rain alarm will remain activated until the wind speed drops below the drop out set point wind speed. The wind speed must remain below the drop out set point for the length of time specified by the drop out delay setting.

WIND OR RAIN ALARM

The wind or rain alarm output will activate any time either a wind or a rain alarm occurs.

RAIN SENSOR HEATER

The rain sensor heater is on when the rain alarm has been triggered. The heater ensures that sensor dries more quickly after the rain stops.

CONFIGURATION

The Weather Alarm has a quick and simple configuration process. To operate the Weather Alarm the following parameters need to be set up. See diagrams 1 and 2 on pages 13 and 14 for graphical representation of set points and delays.

1. Activation set point (ASP)
2. Activation delay (ADL)
3. Drop out set point (DOSP)
4. Drop out delay (DODL)
5. Rain Sensitivity
6. Units
7. Response time
8. Clock

ACTIVATION SET POINT (ASP)

If the wind speed is greater than the activation set point the alarm will activate. When the alarm activates, the environmental controller will close any open roof vents to the first programmed position. The activation set point may be programmed for any wind speed between 0 and 120 miles per hour (0 and 192 kilometers per hour).

To program the activation set point:

1. Press the **ACTIVATION SET POINT** key.
2. The display will alternate between A SP and the current activation set point.
3. Use the numerical keypad to enter the new activation set point.
4. Press the enter key to store the displayed value.
5. The message complete (CPLT) will be displayed.

ACTIVATION DELAY (ADL)

The activation delay is the length of time that the wind speed will need to be above the activation set point for the alarm to activate. When the alarm activates, the environmental controller will close any open roof vents to the first programmed position. The activation delay may be programmed from zero to 99 minutes and 99 seconds.

To program the activation delay:

1. Press the **ACTIVATION DELAY** key.
2. The display will alternate between A DL and the current activation delay.
3. Use the numerical keypad to enter the new activation delay. Before the decimal point is minutes, after the decimal point is seconds.
4. Press the enter key to store the displayed value.
5. The message complete (CPLT) will be displayed.

DROP OUT SET POINT (DOSP)

If the wind speed is less than the drop out set point the alarm will deactivate. When the alarm deactivates, the roof vents will be under the control of the environmental controller. The drop out set point may be programmed for any wind speed between 0 and 120 miles per hour (0 and 192 kilometers per hour).

To set up the drop out set point:

1. Press the **DROP OUT SET POINT** key.
2. The display will alternate between D SP and the current drop out set point.
3. Use the numerical keypad to enter the new drop out set point.
4. Press the enter key to select the displayed value.
5. The message complete (CPLT) will be displayed.

DROP OUT DELAY (DODL)

The drop out delay is the length of time that the wind speed will need to be below the drop out set point for the alarm to deactivate. When the alarm deactivates, the roof vents will be under the control of the environmental controller. The drop out delay may be programmed from zero to 99 minutes and 99 seconds.

To set up the drop out delay:

1. Press the **DROP OUT DELAY** key.
2. The display will alternate between D DL and the current drop out delay.
3. Use the numerical keypad to enter the new drop out delay. Before the decimal point is minutes, after the decimal point is seconds.
4. Press the enter key to select the displayed value.
5. The message complete (CPLT) will be displayed.

RAIN SENSITIVITY

The rain sensitivity key will allow setting a rain sensitivity of high, medium, or low. When the rain starts, the alarm will activate, and the environmental controller will close any open roof vents to the first programmed position. Programming a high sensitivity will cause the alarm to activate quicker than a low sensitivity. When the rain stops, the alarm will deactivate, and the roof vents will be under the control of the environmental controller.

To set up rain sensitivity:

1. Press the **RAIN SENSITIVITY** key.
2. The display will alternate between SENS and the current setting – HIGH, MED, or LOW
3. Press the **RAIN SENSITIVITY** key to change the displayed setting.
4. Press the enter key to select the displayed value.
5. The message complete (CPLT) will be displayed.

UNITS

The Weather Alarm can be set to operate with English or metric units. With English units the wind speeds are displayed in miles per hour and temperatures in degrees Fahrenheit. With metric units the wind speeds are displayed in kilometers per hour and temperatures in degrees Celsius. A decimal point at the lower right hand corner of the display indicates that the controller is operating in metric mode.

To change the units setting:

1. Press the **UNITS** key.
2. The display will alternate between UNIT and the current setting – ENGL or METR.
3. Press the **ONE** key to toggle the setting.
4. Press **ENTER** to select the displayed setting.
5. The message complete (CPLT) will be displayed.

RESPONSE TIME

Response time is the length of time that wind speed will be averaged. Wind speed may be averaged from one to nine seconds. The lower the response time the quicker the Weather Alarm's display will update the wind speed. The response time may be programmed from one second to nine seconds. A response time of one will not average the wind speed.

To set up response time:

1. Press the **RESPONSE TIME** key.
2. The display will alternate between RESP and the programmed response time.
3. Use the keypad to type in the new response time.
4. Press the enter key to select the displayed value.
5. The message complete (CPLT) will be displayed.

ACTIVATE ALARM

The **ACTIVATE ALARM** key may be pressed at any time to activate the output of the Weather Alarm, this is a manual override feature. The Weather Alarm will close any open roof vents to the first programmed position. The roof vents will remain closed for ten minutes or until the **CANCEL ALARM** key is pressed. After ten minutes the roof vents will automatically return to being controlled by the environmental controller. The Weather Alarm will return to normal operation. When **ACTIVATE ALARM** is pressed the letter A will be displayed in the hundreds position of the display. Reset will clear the activate alarm feature.

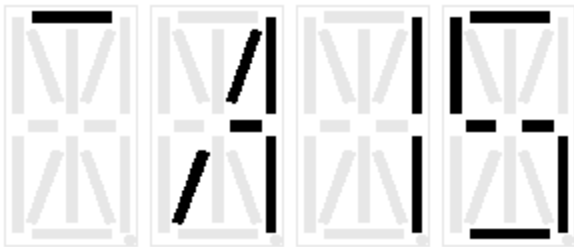


Figure 7. Activate now and a wind speed of 15 miles per hour

CANCEL ALARM

The **CANCEL ALARM** key may be pressed at any time to cancel the output of the Weather Alarm, this is a manual override feature. The Weather Alarm will allow any roof vents to return to the control of the environmental controller. The roof vents will remain under control of the environmental controller for ten minutes or until the **ACTIVATE ALARM** key is pressed. The Weather Alarm will return to normal operation. When **CANCEL ALARM** is pressed the letter C will be displayed in the hundreds position of the display. Reset will clear the cancel alarm feature.

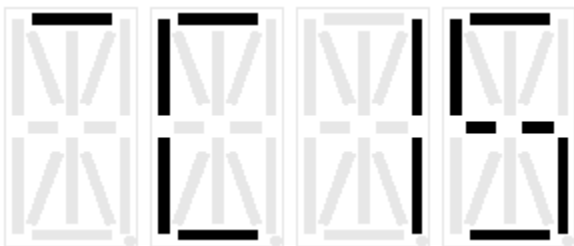


Figure 8. Cancel now and a wind speed of 15 miles per hour

ESCAPE

The escape key may be pressed at any time to exit out of any menu or data entry without changing the previously programmed value. The Weather Alarm will display the message ESC for two seconds and then return to the normal operation display.

MENU

There are nine menu options under the menu key. The first menu option is Last Rain Alarm (LRA). To select the displayed option press the enter key. To change the menu option, press the menu key again.

1. LAST RAIN ALARM (LRA)

The time of the rain alarm will be saved for each of the last seven days. The last rain alarm is the last time an alarm occurred on that day. If multiple rain alarms occur on the same day only the time of the most recent alarm will be displayed.

To view when the last rain alarm occurred:

1. The display will show the message DAY1. DAY1 is today.
2. Press the **MENU** key or use the numerical keypad to change the option. Press number three key for day three.
3. Press the enter key to select the day to review.
4. The display will show the time the last rain alarm occurred.

2. LAST WIND ALARM (LWA)

The time of the last wind alarm will be saved for each of the last seven days. The last wind alarm is the last time an alarm occurred on that day. If multiple wind alarms occur on the same day only the time of the most recent alarm will be displayed.

To view when the last wind alarm occurred:

1. The display will show the message DAY1. DAY1 is today, DAY2 is yesterday, etc
2. Press the **MENU** key or use the numerical keypad to change the option. Press number three key for day three.
3. Press the enter key to select the day to review.
4. The display will show the time the last wind alarm occurred.

3. MAXIMUM WIND SPEED AND TIME (MAX)

The maximum wind speed and time will be saved for each of the last seven days.

To view the maximum wind speed and time

1. The display will show the message DAY1. DAY1 is today, DAY2 is yesterday, etc.
2. Press the **MENU** key or use the numerical keypad to change the option. Press number three key for day three.
3. Press the enter key to select the day to review.
4. The display will show the maximum wind speed and the time the maximum occurred.

4. RESET (RSET)

Reset will shut off any active alarms and clear last wind alarm, last rain alarm, and maximum wind speed. If the **ACTIVATE NOW** or the **CANCEL NOW** buttons have been pressed, reset will return the alarm output to the control of the Weather Alarm. The display will alternate between the message RSET and either YES or NO. To reset the controller press the number one key to toggle the reset option to YES and press the enter key. If the reset option is NO and the enter key is pressed the controller will not reset.

5. CLOCK (CLCK)

The Weather Alarm uses a 24-hour (military time) clock. The clock is used to record when the last wind alarm, last rain alarm, and maximum wind speed occurred.

To program the 24-hour clock:

1. Press the **CLOCK** key.
2. The display will alternate between CLCK and the current programmed time
3. Use the keypad to type in the time. Remember one o'clock in the afternoon should be entered as 13:00 because of the 24-hour clock format
4. Press the enter key to select the displayed value.

The message complete (CPLT) will be displayed.

6. RAIN (RAIN)

The rain option will allow turning off the rain alarm. The display will alternate between the message RAIN and either ON or OFF. To turn on the rain alarm, press the number one key to toggle the rain option to ON and press the enter key. If the rain option is OFF, a rain alarm will not occur.

7. WIND (WIND)

The wind option will allow turning off the wind alarm. The display will alternate between the message WIND and either ON or OFF. To turn on the wind alarm, press the number one key to toggle the rain option to ON and press the enter key. If the wind option is OFF, a wind alarm will not occur.

8. CALIBRATION CODE (CODE) – FOR HUMIDITY SENSOR ONLY

Each humidity sensor has a unique four digit calibration code. This code must be entered for the Weather Alarm to display the correct humidity. The display will alternate between the message code and the current calibration code. If the code is correct press the enter key. To change the code use the keypad and type in the for digit number that came with your humidity sensor. Press enter when the code has been entered correctly.

9. DEFAULTS (DEFT)

Restore factory default settings. The default settings are:

Activation Set Point – 20 MPH

Drop Out Set Point – 15 MPH

Activation Delay – 4 Seconds

Drop Out Delay – 6 Seconds

Units – English

Response Time – 1

Sensitivity – Medium

Wind Alarm – On

Rain Alarm – On

DIAGRAM 1 – ACTIVATION AND DROP OUT DELAYS

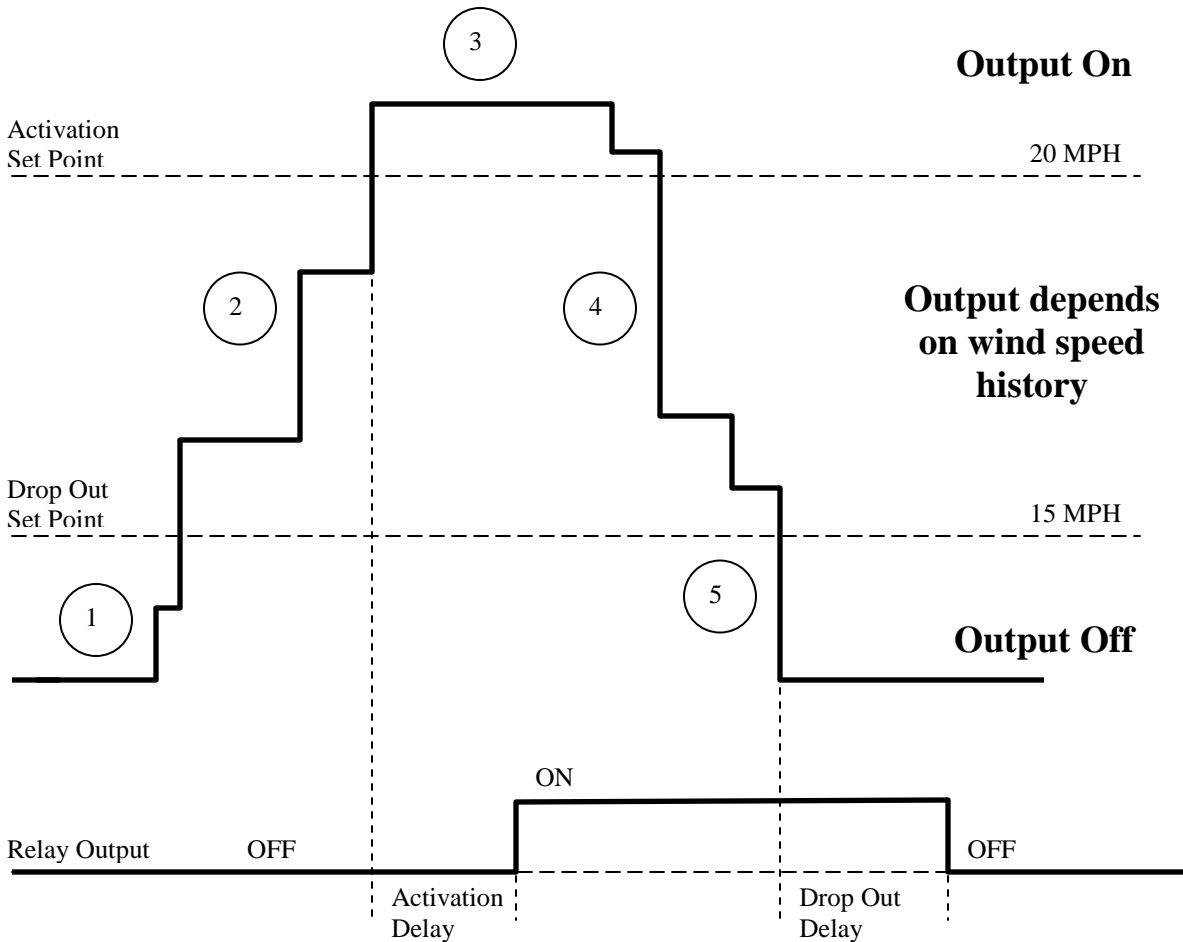
The Weather Alarm will close any open roof vents to the first programmed position when the when the wind speed exceeds 20 miles per hour for 4 seconds. The roof vents will return control of the roof vents to the environmental controller when the wind speed drops below 15 miles per hour for 6 seconds.

Activation Set Point – 20 MPH

Drop Out Set Point – 15 MPH

Activation Delay – 4 Seconds

Drop Out Delay – 6 Seconds



1. Output Off – Wind speed is below the activation and drop out set points
2. Output Off – Wind speed is below the activation set point and the output has not been triggered
3. Output On – Wind speed is above the activation set point, output triggers after activation delay
4. Output On – Wind speed is below the activation set point and the output has been triggered
5. Output Off – Wind speed is below the activation and drop out set points, output turns off after drop out delay

DIAGRAM 2 – NO DELAYS

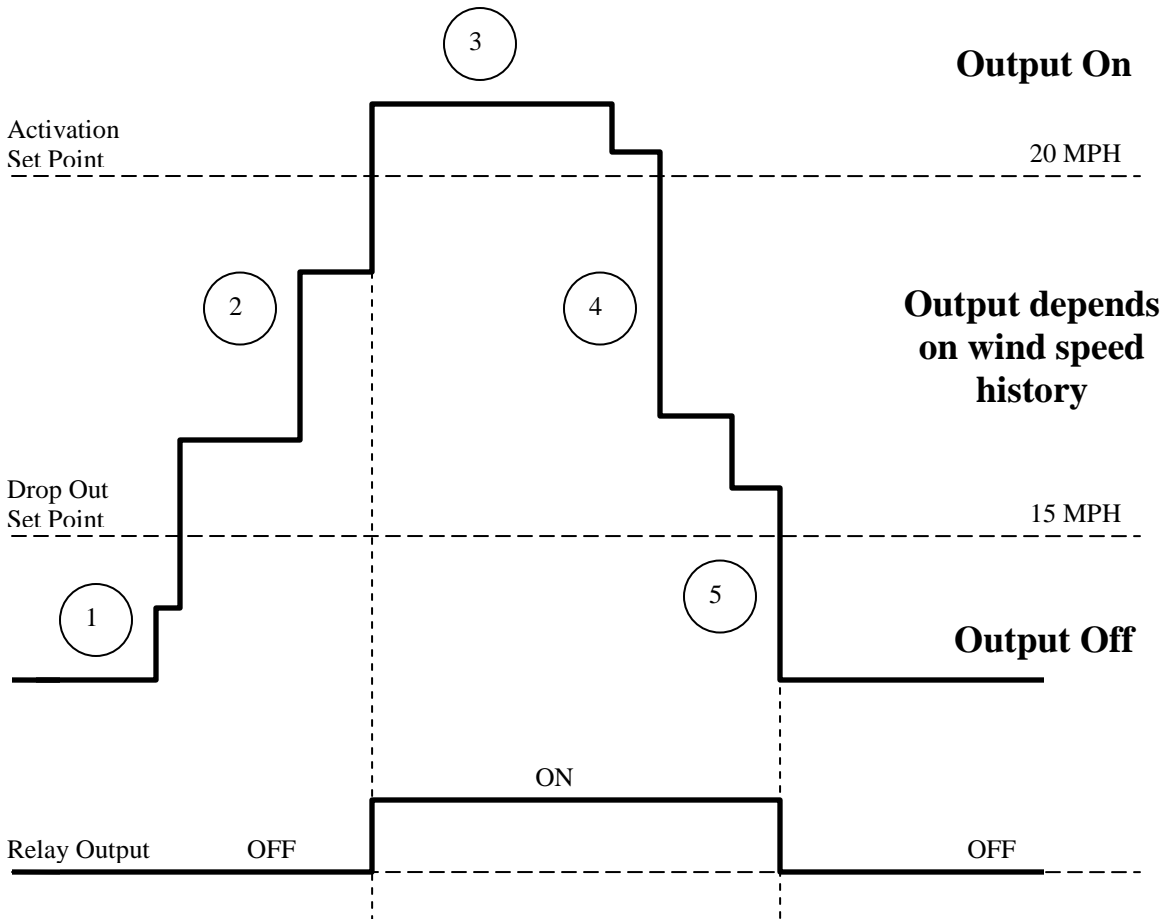
The Weather Alarm will close any open roof vents to the first programmed position when the when the wind speed exceeds 20 miles per hour. The roof vents will return control of the roof vents to the environmental controller when the wind speed drops below 15 miles per hour.

Activation Set Point – 20 MPH

Drop Out Set Point – 15 MPH

Activation Delay – 0 Seconds

Drop Out Delay – 0 Seconds



1. Output Off – Wind speed is below the activation and drop out set points
2. Output Off – Wind speed is below the activation set point and the output has not been triggered
3. Output On – Wind speed is above the activation set point, output triggers immediately
4. Output On – Wind speed is below the activation set point and the output has been triggered
5. Output Off – Wind speed is below the activation and drop out set points, outputs shuts off immediately