WR10JA000

WIND RANGER

INSTRUCTION MANUAL

For Models With Software Rev. 1-000-008
And Earlier

CONTROL SYSTEM PROUDLY BUILT BY

SOUTH COAST CONTROLS

OPERATING MANUAL
WIND SPEED CONTROL
SOUTH COAST CONTROLS MODELS
WR10JA000 SERIES

This manual describes the use and operation of the South Coast Controls Wind Ranger wind speed monitor and control device.

Using the supplied schematics as a reference and wiring guide apply appropriate input power, anemometer input, and control connection(s) to the wind ranger. The Wind Ranger reacts to the wind conditions affecting the anemometer. For the Wind Ranger to give maximum beneficial effects the anemometer should be located in the same prevailing wind environment as the controlled device (IE: Fountains, Canopies, Umbrellas, Cooling Towers, and Amusement Park Attractions).

Upon application of power the Wind Ranger AQ-WR-1105 series of wind velocity set point controllers will display on the LCD the following power up message for five seconds. Note that the second line of the LCD may be slightly different than shown due to software and hardware upgrades.

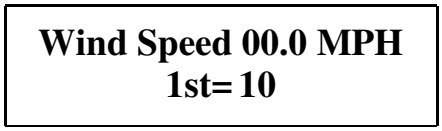
South Coast Controls
3 Stage WR10JA000h

The instructions are given for a 3 stage Wind Ranger. The 2 stage Wind Ranger has no third stage menu options. The 1 stage Wind Ranger has no third or second stage menu options.

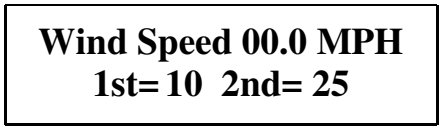
The password protection option is also described in the documentation.

When the power up message has completed the default running display will appear on the LCD and the green LED ACTIVITY lamp will be on solid indicating the Wind Ranger is powered up and no stage activity is occurring. Note that the first line of the LCD display indicating the Wind Speed is a real time value of the current wind condition. Depending on anemometer installation a few tenths of wind speed bobble may occur. The second line of the LCD displays the wind speed stage setpoint values. The Wind Ranger is preprogrammed with setpoint values to aid in a quick no hassle installation.

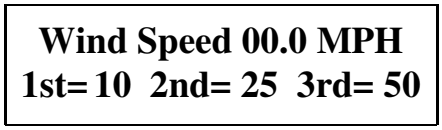
1 stage model display



2 stage model display



3 stage model display



Should a wind a speed stage become active the LCD display will indicate on the second line with a flashing message the particular stage that is active. The second stage **(2nd Stage Active)** has priority over the first stage **(1st Stage Active)** and the third stage **(3rd Stage Active)** has priority over the second stage **(2nd Stage Active)**. The green ACTIVITY lamp will flash indicating what stage activity is occurring. There will be one flash per second indicating the **(1st Stage Active)**, two flashes per second indicating the **(2nd Stage Active)**, and three flashes per second indicating the **(3rd Stage Active)**. The priorities are the same as those that occur on the LCD display. The LCD backlight will also illuminate during any stage activity. Note that first line of the LCD display indicating the Wind Speed is a real time value of the current wind condition and values other than shown may be displayed. When the setpoint activity has run its course the LCD display will revert to the default running display and the LCD backlight will be extinguished.

Wind Speed 10.0 MPH
1st Stage Active

Wind Speed 25.0 MPH
2nd Stage Active

Wind Speed 50.0 MPH
3rd Stage Active

In order to program the Wind Ranger control the MENU push button is used in concert with the setpoint ∧ (increment) and ∨ (decrement) arrow keys. Programming is not restricted and can be performed at any time. Holding down the ∧ (increment) or ∨ (decrement) arrow keys for approximately 1 second will invoke their respective auto repeat function. There are up to 20 displays depending upon model, including those already discussed, associated with the Wind ranger. The MENU key is pressed to scroll the LCD display to the desired programming setpoint and/or function to view and/or alter. The LCD backlight will also be illuminated at this time. If no push button activity is detected IE: MENU, UP, and DOWN arrow keys, the LCD display will revert to the default running display.

A note about Stage 1, 2, and 3 Setpoints: The Stage Setpoint values will be automatically adjusted when required so that the **Stage 1 Setpoint** will always be less than or equal to the Stage 2 Setpoint and the **Stage 2 Setpoint** will always be less than or equal to the **Stage 3 Setpoint**. The Stage Setpoint being adjusted will dictate the ultimate Stage Setpoint value of the other two.

For example: Stage 1 Setpoint = 10 MPH
Stage 2 Setpoint = 25 MPH
Stage 3 Setpoint = 50 MPH

If the **Stage 2 Setpoint** is raised to 55 MPH the **Stage 3 Setpoint** will be automatically adjusted to 55 MPH.

The displays the MENU push button accesses are as follows:

Entry Key: *(Only applicable to models with password option)*

This display will appear when a password has been entered and/or:

1. The activity timeout has reverted to the system default running display.
2. The system power is cycled.

The setpoint values can be password protected to prevent unauthorized setpoint value changes. The Wind Ranger is shipped with a default password of 0, essentially no password protection.

0 minimum Entry Key value.
9999 maximum Entry Key value.

XXX Entry Key XXXX **0000**

Stage 1 Setpoint:

The wind speed must be at or above this setpoint for the Stage 1 action to begin.

1 MPH minimum wind speed.
99 MPH maximum wind speed.

Stage 1 Setpoint **10 MPH**

Stage 1 Dwell To On:

The amount of time the wind speed must be consistently at or above the **Stage 1 Setpoint** for the stage 1 output relay to become active.

0 Mins 01 Secs minimum time.
9 Mins 59 Secs maximum time.

Stage 1 Dwell To On **00 Mins 05 Secs**

Stage 1 Dwell To Off:

The amount of time the wind speed must be consistently below the **Stage 1 Setpoint** for the Stage 1 output relay to deactivate. The **Stage 1 Dwell To On** and the **Stage 1 Dwell To Off** will also reset in readiness for a for a new stage 1 cycle.

0 Mins 01 Secs minimum time.
59 Mins 59 Secs maximum time.

Stage 1 Dwell To Off **00 Mins 10 Secs**

Stage 2 Setpoint:

The wind speed must be at or above this setpoint for the Stage 2 action to begin.

1 MPH minimum wind speed.
99 MPH maximum wind speed.

Stage 2 Setpoint **25 MPH**

Stage 2 Dwell To On:

The amount of time the wind speed must be consistently at or above the **Stage 2 Setpoint** for the stage 2 output relay to become active.

0 Mins 01 Secs minimum time.
9 Mins 59 Secs maximum time.

Stage 2 Dwell To On **00 Mins 05 Secs**

Stage 2 Dwell To Off:

The amount of time the wind speed must be consistently below the **Stage 2 Setpoint** for the Stage 2 output relay to deactivate. The **Stage 2 Dwell To On** and the **Stage 2 Dwell To Off** will also reset in readiness for a for a new stage 2 cycle.

0 Mins 01 Secs minimum time.
59 Mins 59 Secs maximum time.

Stage 2 Dwell To Off **00 Mins 15 Secs**

Stage 3 Setpoint:

The wind speed must be at or above this setpoint for the Stage 3 action to begin.

1 MPH minimum wind speed.

99 MPH maximum wind speed.

Stage 3 Setpoint **50 MPH**

Stage 3 Dwell To On:

The amount of time the wind speed must be consistently at or above the **Stage 3 Setpoint** for the stage 3 output relay to become active.

0 Mins 01 Secs minimum time.

9 Mins 59 Secs maximum time.

Stage 3 Dwell To On **00 Mins 05 Secs**

Stage 3 Dwell To Off:

The amount of time the wind speed must be consistently below the **Stage 3 Setpoint** for the Stage 3 output relay to deactivate. The **Stage 3 Dwell To Off** will also reset in readiness for a new stage 3 cycle.

00 Hrs 01 Mins minimum time.

99 Hrs 59 Mins maximum time.

Note that a setting of 00 Hrs 00 Mins will latch the stage 3 output relay on indefinitely and requires the use of the Stage 3 Reset function as described in the forthcoming display.

Stage 3 Dwell To Off **01 Hrs 00 Mins**

Stage Reset:

Performing the Stage Reset function will cause all stage 1,2 and 3 output relays to deactivate. The Stage 1, 2, and 3 Dwell To On and the Stage 1, 2 and 3 Dwell To Off will also reset in readiness for new stage cycles.

Pressing the Menu button will exit the Stage Reset function to the running display.

Pressing the ∧ (increment) button will commence the stage reset function and will exit the Stage Reset display to the running display.

Stage Reset **Menu = NO , ^ = YES**

LCD Backlight:

The **LCD Bcklight On Time** can be programmed to operate in a delay to off, "Screen Saver" mode, or can be programmed to be permanently on. The Wind Ranger is shipped with a **LCD Bcklight On Time** of 2 minutes. This means that the LCD Backlight will turn off when no activity of the push buttons is sensed and all stages are inactive for 2 minutes.

00 Hrs 01 Mins minimum time.

24 Hrs 00 Mins maximum time.

Note that a setting of 00 Hrs 00 Mins will force the LCD backlight to be permanently on.

LCD Bcklight On Time **01 Hrs 00 Mins**

Define New Password?: *(Only applicable to models with password option)*

The setpoint values can be password protected to prevent unauthorized setpoint value changes. The Wind Ranger is shipped with a default password of 0, essentially no password protection.
The password can be any value from 0000 – 9999.

<u>WARNING</u>: *Make sure you remember the password. Once the password is set you cannot view or alter the password or any of the setpoint values. If you do not remember the password you will have to return the Wind Ranger to the factory for password removal.*

0 minimum password value.
9999 maximum password value.

Define New Password? **0000**

Save Setpoints:

Performing the Save Setpoints function copies all setpoint values to the EEPROM were it is permanently saved. These saved setpoint values are recalled when the Wind Ranger is powered up. If changes are made to setpoint values and are not saved to the EEPROM the Wind Ranger will use these new setpoint values until loss and reapplication of power overwrites them with the values recalled from the EEPROM.

Pressing the Menu button will exit the Stage Reset function to the running display.
Pressing the ∧ (increment) button will commence the Save Setpoints function and will exit the Stage Reset function to the Saving Setpoints display. After a delay of 2 seconds exit the Saving Setpoints display to the running display.

Save Setpoints ? **Menu = NO , ^ = YES**

Saving Setpoints

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Control Outputs:

The Wind Ranger has up to three control outputs. The single stage Wind Ranger has 1 output designated a 1st STAGE. The two stage Wind Ranger has 2 outputs designated as 1st STAGE and 2nd STAGE. The three stage Wind Ranger has 3 outputs designated as 1st STAGE, 2nd Stage, and 3rd STAGE.

The relay control outputs are configured as Form C non-voltage and are meant to be used as a supplementary control signals to devices being controlled. Non-voltage means that the relay contacts are not connected to any power source inside the Wind Ranger and therefore can be wired as the user needs requires. These relays are rated up to 10 Amps at 240V/AC.