

Installation Instructions for the Demico Wind Speed Monitor and Control- Surface Mount

The Wind Monitor and Control is composed of two parts, the wind sensor(s) and the control.

The Wind Monitor and Control can utilize up to three separate anemometers to sense wind currents around the area of interest. The anemometers should be mounted to a plastic or metal conduit or pipe approximately at the height of interest. If the anemometer is mounted higher than surrounding structures, then a suitably grounded lightning rod should be installed above the anemometer. A shielded twisted pair is required to electrically connect the anemometer to the control. The anemometer generates minimal power, and voltage drop should not be a problem except in extreme cases where the anemometer is more than one thousand feet away.

The enclosure is designed to be flush mounted to a panel, wall, or post. The cover screw holes are used to allow mounting without drilling holes inside the enclosure and without affecting the environmental rating of the enclosure.

Mount the enclosure appropriately either near the controlled load, or near the rest of the control circuitry.

1. Remove the clear front cover.
2. Hold the control in the desired mounting location and mark the four corner holes with a punch, scribe, pencil, or nail.
3. Drill holes for screws, or use self-drilling screws to attach the enclosure.

Attaching Conduit to the Enclosure

The enclosure has $\frac{1}{2}$ " and $\frac{3}{4}$ " knockouts for standard conduit fittings. The anemometer leads should be routed in a separate conduit. Power and control output wiring

should be sized and routed according to the type of load controlled.

Up to three anemometers may be utilized by the control. A twisted shielded pair is required. Recommended minimum wire size is 22 gage.

1. Securely attach #6 ring connectors to the two signal wires at the anemometer end of the cables.
2. Cut the shield wire off flush with the end of the stripped cable jacket.
3. Remove the first brass nuts on each stud on the bottom of the anemometers.
4. Secure each ring connector to the stud with the brass nuts. There is no polarity.
5. Silicone sealant may be used to cover and protect the electrical connections.
6. Check to see that appropriate lightning protection exists, or install a lightning rod above the anemometers.
7. Route all anemometer cables to the control through conduit.

The four terminals numbered 10 through 14 on the control terminal block connect the anemometer wiring to the control.

8. Connect all shield wires from the anemometer cables to terminal 10. Terminal 10 is internally connected to Terminal 3, which must be connected to an earth ground.
9. Connect one wire from each anemometer to Terminal 11, the anemometer Common.
10. Connect the other wire from each anemometer to Terminal 12, 13, or 14. These terminals are paired with the trouble shooting LED's on the terminal block board, and with the

anemometer indicators above the digital display. It makes no difference which anemometer is connected to which terminal. All inputs are treated equally. However, it may be helpful to place them in an order which makes some logical sense, such as from left to right when viewing the fountain. Alternately, a label can be attached to the cabinet describing each anemometer location. Unused inputs must be shorted to terminal 11, the anemometer common.

The control has two independent dry outputs rated at 10A @240 Vac, 8A @24Vdc, and ½ HP at 240Vac. Each output is controlled by its associated setpoint, and can be used for any purpose.

Output #1 normally controls the spray height with a bypass valve or an input to a variable speed drive. The output contacts are dry and do not source any power for the valve. Connect an appropriate power source to Terminal 8 and the Valve wire to Terminal 9, the Normally Open Contact.

Output #2 normally controls an interposing relay or interfaces with a motor starter. The output contacts are dry and do not source any power. Connect an appropriate power source to terminal 5, and the pump control wire to terminal 4.

The Wind Monitor and Control is designed to be powered from 120 or 240 Vac at either 50 or 60Hz. The Control operates correctly for a wide voltage range of 100 to 250 Vac.

1. Connect power wires to terminals 1 and 2. There is no preferred polarity. Terminal 3 must be connected to an earth ground.

1. After all wiring is complete, adjust both setpoints to maximum.
2. Adjust both time delay adjustments to maximum.
3. Set both output control toggle switches to OFF.
4. Power up the control. All LED's and digital display segments will light for a second, and then "d1.0" will be displayed indicating the Demico firmware version. The highest wind speed detected from the three anemometer inputs is then displayed on the numerical display. One of the anemometer indicators above the numerical display will light indicating which anemometer's wind speed is being displayed.
5. Switch Output Control toggle switch #2 to ON. The Output #2 indicator and the #2 output should activate.
6. Verify the fountain height is high.
7. Switch the output control toggle switch #1 to ON.
8. Verify the fountain height is low.
9. Swing out the front panel to observe the anemometer troubleshooting LEDs. Each anemometer troubleshooting LED is paired with an anemometer. The bottom LED is for Terminal 12, anemometer #1, the middle LED is for Terminal 13, anemometer #2, and the top LED is for Terminal 14, anemometer 3.
 - a. If there is not an anemometer connected, the LED will be constantly on. If there is an anemometer connected and the LED is constantly on, the anemometer circuit has a break in it.
 - b. If the LED is not lit, then either the anemometer is connected properly, but is not presently rotating, or the anemometer circuit has a short

- circuit.
- c. If the LED is flashing, then the anemometer is connected properly and is presently rotating at a speed proportional to the flash rate.
 - d. All unused inputs should be connected to Terminal 10, Anemometer Common, which will turn off the associated LED.
 - e. If there are wiring faults, turn the power off, disconnect the anemometer wiring and repair the fault.
10. Close the front panel and secure with the two thumbscrews.
 11. Notice that a single LED above the digital display will be lit, indicating which anemometer is sensing the highest wind speed. The digital display will display the highest wind speed sensed.
 12. Switch the Output control toggle switch to Auto. If the wind speed is less than 25 MPH, the spray height will remain high.
 13. For testing purposes, adjust setpoint #1 to a value less than the present wind speed. The spray height will switch to the low height automatically and the #1 LED indicator will turn on. Adjust setpoint #1 to a value above the present wind speed. The spray height will remain low, and the output #1 indicator LED will begin to flash once a second for 100 seconds. Then the #1 output LED will turn off, and the spray height output will return to high. Switching the #1 toggle switch to HIGH momentarily and then back to AUTO will cancel the delay.
 14. Adjust the #1 setpoint to maximum.
 15. Switch output control toggle switch #2 to Auto. If the wind speed is less than 25 MPH, the Pump will continue to run.
 16. Adjust Setpoint #2 to a value less than the present wind speed. The #2 output LED indicator and the Pump Motor will turn off. Adjust Setpoint #2 above the present wind speed. The Pump Motor will remain off and the #2 output Indicator LED will flash once a second for 100 seconds. Then output Indicator LED #2 and the Pump Motor will switch on. Switching output control toggle switch #2 to OFF momentarily and then back to AUTO will cancel the delay.
 17. Adjust the #1 delay to the desired time.
 18. Adjust the #2 delay to the desired time.
 19. Adjust setpoint #1 to the maximum wind speed allowed for high spray height.
 20. Adjust setpoint #2 to the maximum wind speed allowed for low spray height.
 21. Place clear cover over control and secure with four corner screws.