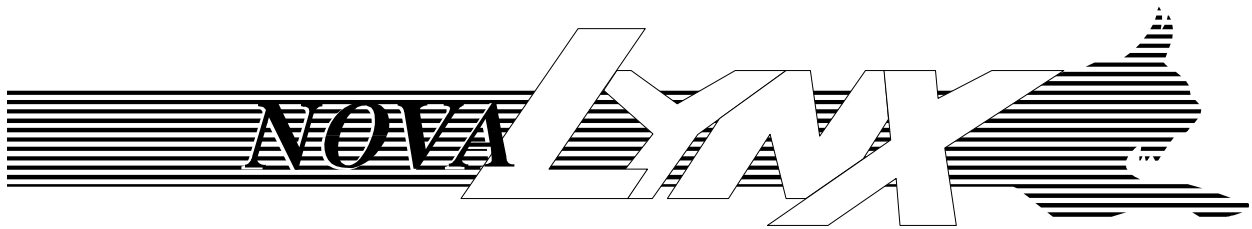


# NOVALYNX CORPORATION

MODEL 200-WS-21-A  
DUAL SET POINT WIND ALARM

INSTRUCTION MANUAL



REVISION DATE: JAN 2005

## Receiving and Unpacking

Carefully unpack all components and compare to the packing list. Notify NovaLynx Corporation immediately concerning any discrepancy. Inspect equipment to detect any damage that may have occurred during shipment. In the event of damage, any claim for loss must be filed immediately with the carrier by the consignee. Damages to equipment sent via Parcel Post or UPS require the consignee to contact NovaLynx Corporation for instructions.

## Returns

If equipment is to be returned to the factory for any reason, call NovaLynx between 8:00 a.m. and 4:00 p.m. Pacific Time to request a Return Authorization Number (RA#). Include with the returned equipment a description of the problem and the name, address, and daytime phone number of the sender. Carefully pack the equipment to prevent damage or additional damage during the return shipment. Call NovaLynx for packing instructions in the case of delicate or sensitive items. If packing facilities are not available take the equipment to the nearest Post Office, UPS, or other freight service and obtain assistance with the packaging. Please write the RA# on the outside of the box.

## Warranty

NovaLynx Corporation warrants that its products are free from defects in material and workmanship under normal use and service for a period of one year from the date of shipment from the factory. NovaLynx Corporation's obligations under this warranty are limited to, at NovaLynx's option: (i) replacing; or (ii) repairing; any product determined to be defective. In no case shall NovaLynx Corporation's liability exceed product's original purchase price. This warranty does not apply to any equipment that has been repaired or altered, except by NovaLynx Corporation, or that has been subjected to misuse, negligence, or accident. It is expressly agreed that this warranty will be in lieu of all warranties of fitness and in lieu of the warranty of merchantability.

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# MODEL 200-WS-21-A EQUIPMENT CONFIGURATION AND IDENTIFICATION



200-WS-21-A Menus

# **NovaLynx Corporation**

## **Model 200-WS-21-A Dual Set Point Wind Alarm Instruction Manual**

### **1.0 INTRODUCTION**

The NovaLynx 200-WS-21-A is a microprocessor-based dual set point wind speed alarm packaged in a NEMA4X box with a transparent cover. It has been designed with two independently controlled relays. The relays are used to control power to the users wind speed sensitive device(s). The control module has a liquid crystal digital display and push buttons for viewing and selection of the operating mode and the alarm threshold values. The user can control three parameters for each alarm channel: threshold wind speed delay before the relay triggers, after threshold speed is exceeded, and delay time before the relay turns off after the wind speed drops below the threshold. Each relay can be used in either the normally open or the normally closed mode. A piezoelectric buzzer in the control module can be activated to turn on when ever the alarm state is active.

### **2.0 GENERAL DESCRIPTION**

The NovaLynx 200-WS-21A consists of two components, an anemometer to measure wind speed and a control module.

#### **2.1 ANEMOMETER**

The Model 200-WS-01B anemometer uses three rotating cups to sense wind velocity. As the wind blows past the cups, the pressure of the wind against the insides of the cups causes the cups to rotate. There are three permanent magnets embedded in the hub that holds the cups. As the hub rotates on its instrument grade ball bearing, each magnet passes over a fixed magnetic reed switch mounted in the anemometer base. The magnetic reed switch is normally open and the contacts close each time a magnet passes over the switch. The ratio of closed to open time for the magnetic reed switch is nominally 1 to 9. Thus three switch closures are generated per revolution of the anemometer cups.

The anemometer is rated for wind speeds up to 125 mph and has a starting threshold of approximately 1 mph.

#### **2.2 CONTROL MODULE**

The function of the Control Module is to activate control relays when ever user selected wind speeds are reached and sustained for user determined periods of time. The Control Module is microprocessor based and is controlled via push buttons and a two-row-liquid-crystal-display. There are Option Switches on the printed circuit board for

selection of wind speed units (mph or kph), for enabling the audible alarm, and for controlling the LCD contrast.

## **3.0 OPERATION**

### **3.1 USER INTERFACE**

There are two modes of operation for the NovaLynx model 200-WS-21A Wind Speed Alarm, RUNNING and PAUSED. The RUNNING mode is the normal operating mode when the unit is initially powered up. The PAUSED mode is any state other than the normal OPERATING mode. Pressing any button during the RUNNING mode will place the unit in the PAUSED mode.

### **3.2 MENU STRUCTURE**

The user interface contains the following menu items:

- Wind Alarms
- Alarm Delays
- Max Wind Speed

#### **The MENU Button**

The MENU button will take the unit out of the RUNNING mode and allow the user to change the operating parameters and view maximum values.

Once the MENU button has been pressed the user may use the UP and DOWN buttons to scroll through the menu.

Subsequent presses of the MENU button will bounce the cursor between editable fields of any menu item, where applicable. When in an editable field, the cursor will become a blinking block.

#### **The GO Button**

The GO Button always returns the unit to the RUNNING mode, regardless of where the user may be in the menu structure.

#### **The UP and DOWN Buttons**

The UP and DOWN buttons control either of two things:

1. Scrolling through menu items when the user is not in an editable field.
2. Scrolling through user selectable values when the user is in an editable field.

## **The CLEAR Button**

Pressing the CLEAR button performs the following actions:

1. If the user is in an editable field, the field will be set to the lowest possible value.
2. If the user is viewing the maximum the wind value, the recorded value will be cleared.
3. If the unit is alarming, all delay counters will be cleared.

### **3.3 ALARM FEATURES**

The NovaLynx 200-WS-21-A Wind Speed Alarm provides the following alarm features:

- Two independent wind speed alarms
- Programmable On and OFF delays
- Pausing of alarm when any key is pressed
- Audible and Silent modes

When audible, Alarm 1 will produce a beep at 400 ms intervals while Alarm 2 will beep at 200 ms intervals.

When the alarms are in the audible mode and both alarms are active, Alarm 2 will have precedence.

The alarm can be put into the silent mode by moving Switch 4 to the off position on the switch block at the bottom of the circuit board. It is necessary to re-boot the 200-WS-21A after moving the switch in order to enable the change.

### **3.4 UNITS OF MEASURE**

It is possible to display wind speed values in either American standard units or in metric units. Selection of the unit system to be used is done with Switch 2 on the switch block at the bottom of the circuit board. The Off position is for mph and the On position is for km/hr. It is necessary to re-boot the 200-WS-21A after moving the switch in order to enable the change.

### **3.5 ANEMOMETER PLACEMENT**

The validity of anemometer signals can be compromised by the choice of the location of the anemometer with respect to the surrounding terrain. Placement of the anemometer should follow standards established by agencies such as the World Meteorological Organization (WMO) and the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service (NWS)

### **3.6 WIND INPUTS**

The wind speed inputs on the printed circuit board are labeled WND+ and WNDg.

### 3.7 POWER SUPPLY

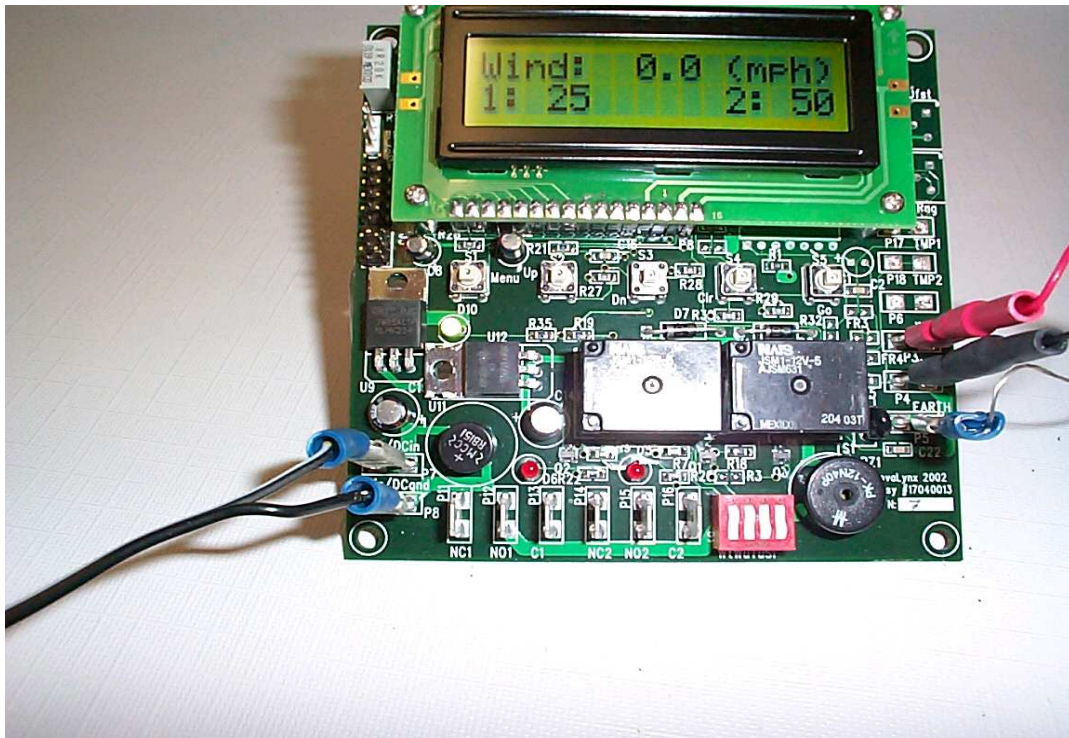
Use a 12V ac or dc power supply on the AC in/DC in and AC in/DC gnd terminals. Connect the two wires of the 200-WS-01B to these terminals and connect the cable shield to an earth ground.

### 3.8 EARTH GROUND

Attach a wire of at least 18 AWG or larger to the EARTH terminal. The other end of this wire must be attached to a metal water pipe or a copper ground rod. This is the ground path for all of the lightning and electrostatic protection devices incorporated on the 200-WS-21-A circuit board.

### 4.0 QUICK START

Before permanently installing the WS-21-A it is advisable to "bench test" it to gain familiarity with its operation. The test is conducted in the following manner.



Attach the anemometer (200-WS-01B) leads to the terminals on the 200-WS-21-A circuit board labeled WND+ and WND g. These terminals are on the right hand side of the circuit board.

Attach 12V dc or ac to the terminals on the 200-WS-21-A circuit board marked AC in/DC in and AC in/DC gnd. These terminals are on the lower left hand side of the circuit board.

When the 200-WS-21-A circuit board is energized the LCD is activated and it will display the wind speed on the first line and the alarm set point values on the second line. Spin the anemometer cups by hand and you will see the wind speed displayed on the top line of the display.

There are five control buttons next to the LCD. These are used to set the alarm thresholds for the two alarms, to set the delay times between the time that the wind speed crosses the alarm threshold and when the alarm state changes conditions, and to clear the maximum wind speed value in the maximum wind speed log. The default condition for the wind speed alarms is 15 mph.

Both the on-delay and the off-delay default values are 15 seconds.

To change the wind speed alarm threshold value press the Menu button. The top line of the display will change from "WIND X.X (mph)" to "Wind Alarms (mph)". Press the Menu button again and the cursor moves over the Alarm 1 speed value. Press the Up or Dn button to increment or decrement the alarm threshold value for Alarm 1. Press the Go button to return to the RUNNING mode.

To Change the Alarm On and Alarm Off delays, with the unit in the RUNNING mode press the Menu button and the "Wind Alarms (mph)" menu will appear. Then press the Up button and the "Alarm Delays (s)" menu will appear. Press the Menu button and the cursor will move to the "ON: XX" field. Then Press the Up or Dn button to increment or decrement the On delay value to the desired value. Press the Menu button again to advance the cursor to the "OFF: XX" field and adjust the value with the Up or Dn button. Press the Go button to return to the RUNNING mode.

To view the Maximum Wind Speed register from the RUNNING mode press the Menu button, then press the Up button. The "Max Wind Speed" screen will be displayed and the second line will show the maximum wind speed obtained since the last reset. To reset the maximum wind speed value to zero press the Clr button. Press the Go button to return to the RUNNING mode.

This concludes the series of quick start tests.

## 5.0 SPECIFICATIONS

Sensor	Three cup anemometer
Wind Speed Transducer	Sealed magnetic switch
Wind Speed Resolution	0 to 99 mph
Survivability Speed	125 mph
Wind Speed Resolution	0.1 mph
Wind Speed Threshold	1 mph
Wind Speed Integration Interval	2 seconds
Wind Speed Accuracy	0.5 mph or 3% (which ever is greatest)
Alarm Delay Range ON or Off	0 - 99 seconds
Controls	Four, push buttons select: 1. Run or Pause mode 2. Menu Select 3. Increment 4. Decrement
Option Slide Switch	(Switches are read only during power-up.) Switch 1: OFF = WIND Switch 2: OFF = mph, ON = km/hr Switch 3: N/A Switch 4: ON = Silent alarms, OFF = Audible alarms