

Installation of the Wind110 (Pulse110-2 pos. terminal block)

The anemometer should be mounted vertically in an open area, as high up as possible. It should be mounted on a pole so that the Wind110 is unobstructed and clear of debris. It can be mounted using a cotter pin on a 13 mm (0.5 in.) diameter mast with a #35 hole, 11 mm (0.35 in.) from the top. The anemometer is non-directional, and will measure wind blowing in any horizontal direction. To ensure the most accurate readings, adjust the position of the anemometer on the bracket so that it is level. Run the 25' (ft.) of provided cable to the location where the data logger will be mounted, securing it roughly every 2 feet. There are 4 mounting holes (0.2 in. diameter spaced 2.5 in. square) on the watertight enclosure.

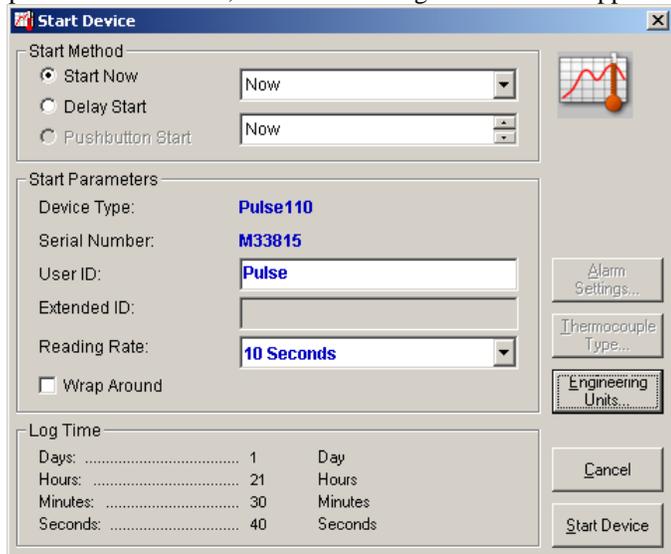
PC and Interface Cable Set-up

A computer running Windows with the MadgeTech software v2.00.58a (or higher) is required. Once the software is installed, a MadgeTech IFC110 interface cable is required to communicate with the logger. To install the software and interface cable, consult the "QuickStart Guide" (pages # 7 to 11) on the MadgeTech web site: <http://www.madgetech.com/quickstart.php>

Once the software is installed and the interface cable (or IFC200) is connected to the PC, you are ready to communicate with the Wind110 data logger. To establish communications, the first step is to unscrew the stainless steel plug from the enclosure. The second step is to insert the 3.5mm plug of the interface cable through the hole in the enclosure and completely into the datalogger. The third step is to ensure that a 57600 baud rate is checked under the "Communications" -> "Select Baud Rate" menu bar option within the MadgeTech software.

Launch the Wind110

The Wind110 is programmed to record wind speed (mph) every 10 seconds, but can be changed when starting the device. To start the device, select the "Device" -> "Start Device" menu option in the software, and the following screen should appear:



If a 10 second reading rate is acceptable, click the "Start Device" menu bar option to start the device. Wait for a dialog box to appear that indicates the device has been started successfully. Unplug the interface cable, and replace the stainless steel watertight plug.

Changing the Reading Rate

If a different reading rate is desired, for example to extend the logging time, or to more accurately record gust values, the engineering units gain will have to be reprogrammed on the device. To do this, click the "Engineering Units..." button from the "Start Device" dialog box, and use the "Device Units Wizard." Follow the wizard's prompts to accomplish the following:

- 1) Enable use of portable engineering units.
- 2) Enter an appropriate description and label (MPH or KPH).
- 3) Enter the Offset and Gain values (offset=0 / gain=see below).
- 4) Enable Engineering Units.

Click the "Finish" button to save the units to the device.

The Engineering Units are based on a linear conversion of the measured data $y = m \cdot x + b$, where m =gain b =offset x =measured value and y =engineered value. With the Wind110, the offset will always = 0. The gain will change depending on the desired units and reading rate. The anemometer is calibrated to produce 120 pulses per second at 102mph. To get a gain value from that, we use a Gain of $102[\text{mph}] / (120[1/\text{sec}] \times \text{Reading Rate} [\text{sec}])$. To read in different units (e.g. KPH, knots) the gain value must be multiplied by an appropriate conversion factor.

Engineering Units Quick Reference (1 pulse/reading rate)

Engineering Units Gain				
Reading Rate	MPH	KPH	M/S	KNOTS
2 sec	0.425	0.68397	0.18999	0.36931
5 sec	0.17	0.27359	0.075997	0.14773
10 sec	0.085	0.13679	0.037998	0.073863
15 sec	0.056	0.09012	0.025034	0.048663
30 sec	0.028333	0.045598	0.012666	0.024621
1 min	0.014167	0.022799	0.0063331	0.0123100
5 min	0.0028333	0.0045598	0.0012666	0.0024621
10 min	0.0014167	0.0022799	0.00063331	0.0012310
15 min	0.0009444	0.00152	0.000422	0.000821
30 min	0.0004722	0.00076	0.000211	0.00041
60 min	0.0002361	0.00038	0.000106	0.000205