TimeTronics

Manual WindSpeed II

SPORT TIMING SYSTEMS

2024v1

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Manual WindSpeed II

Welcome to the "WindSpeed II" user manual.

May we recommend you to gently browse through the entire manual first, just to have an initial idea of how the book is structured. As we can't possibly explain all details simultaneously, this might help you a bit in understanding and tracing things back. Of course, the table of contents will also help you in doing so.

Please note that all pictures are examples, the delivered version can be different than shown in this manual please inform yourself before purchase.

If you, after reading this document, have any further question regarding the operation or service of this or any other TimeTronics equipment, please contact your local distributor or TimeTronics directly, by email: info@timetronics.be, or call us at +32 (0) 14 23 19 11.

Please also contact us if you have any remarks or advice regarding this user manual: info@timetronics.be

Good luck and thank you for your confidence in the TimeTronics products and services.

The editors

Important remark:

Do not forget to switch off the WindSpeed II Controller after usage!!! By pressing on the on/off button till system is shutting down.

WindSpeed II does not work together with FieldTerminal.

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1. Introduction

1.1 General

A precise and accurate registration of wind velocity is very significant for a sports branch as athletics. Let us remind you of the cream of track and field; the sprint races, whereby a record vitally depends on whether the athlete had the benefit of a tail wind of more than 2m/s or not.

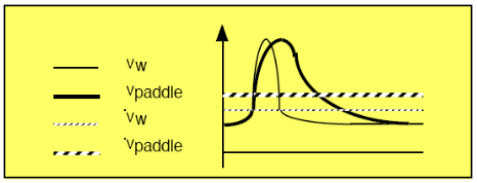
When exceeding this 2m/s limit, a possible record will not be officially acknowledged and ratified. For long jump and triple jump as well, a precise wind measurement is a condition sine qua non.

The best-known and ubiquitous method to measure the wind velocity is the pitot tube or a system which uses a propeller or rotating paddle wheel.

1.2 Disadvantages of a paddle wheel

To measure minor wind velocities, a paddle wheel with a large surface and a very small friction is required, which at the same time causes certain inertia.

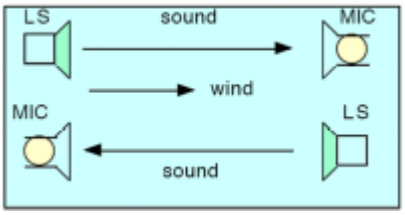
A short and powerful blast of wind suddenly brings the wheel to a number of revolutions. After the blast of wind has suddenly come to a standstill, the paddle wheel keeps on turning, for only the friction of the surrounding air will slow it down.



Because these rotations are calculated within the result, the average wind velocity will be automatically increased. Moreover, rotating parts are generally subject to wear. Therefore, a good alternative for this paddle wheel is the TimeTronics' sonic anemometer or WindSpeed.

2. Principle

A sonic wave is sent via from a minuscule loudspeaker to a tiny microphone. As is generally known, the speed of sound approximately measures 341 m/s., which is directly related to the medium of surrounding air.



In case this medium would start moving, the sound, which "drifts" with the wind, will arrive at the MIC a little sooner than the sound, which has to travel against the wind.

By measuring and registering the difference in speed between the sonic waves, which are travelling along with the wind, and the ones which are travelling against it, we can very accurately determine the wind velocity.

Do bear in mind that any material whatsoever does not blocks the free space between the LS and the MIC.

3. Description of the device

In the first place, the device consists of a central measuring box, provided with cable and a 5-pole Neutric connection for a photo finish (Argus, MacFinish,…) system, a WindSpeed II Controller, a scoreboard or a computer.

The WindSpeed II is mounted on a tripod, which means that measuring plane shall be positioned 1.22m ± 0.05m high, a value, which has been instructed by the World Athletics regulations.

TTC-310 WindSpeed II

The TTC310 consist of:

- 1x TTP-75 = Tripod 55-190cm
- 1x TTP-1195 = WindSpeed II
- 1x TTP-1295 = Carrying Case WindSpeed II

The TTC1090 consist of:

- 1x TTP-1229 = WindSpeed II Controller
- 2x TTP-505 = 3m, 5-pole Neutric cable, male-female
- 1x TTP-1246 = Charger

TTC-1090 WindSpeed II Contoller

4. Direction / Placing – Measuring according to World Athletics Regulations 2023

- Rounding and reading – Rule 17.13

  The wind gauge shall be read in metres per second, rounded to the next higher tenth of a metre per second, unless the second decimal is zero, in the positive direction (that is, a reading of +2.03 metres per second shall be recorded as +2.1; a reading of -2.03 metres per second shall be recorded as -2.0). Gauges that produce digital readings expressed in tenths of metres per second shall be constructed so as to comply with this Rule.

- Placing and reading during Track and Field events:

  - Track – Rule 17.10
    - Is placed beside the straight, adjacent to lane 1, 30m (50m and 60m races)
    - Is placed beside the straight, adjacent to lane 1, 50m (100m, 110m and 200m races) from the finish line.
    - The measuring plane shall be positioned 1.22m ± 0.05m high and not more than 2m away from the track.
    - Measuring time from start pulse:
      - 50m - 5 Sec
      - 50m Hurdles - 5 Sec
      - 60m - 5 Sec
      - 100m - 10 Sec
      - 100m Hurdles - 13 Sec
      - 110m Hurdles - 13 Sec
      - 200m: In the 200m event, except for races on a 200m Standard Oval Track, the wind velocity shall normally be measured for a period of 10 seconds commencing when the first athlete enters the straight.

  - Field – Rule 29.11
    - 20m from take-off line
    - The measuring plane shall be positioned 1.22m ± 0.05m high and not more than 2m away from the runway.
    - Long Jump
      - The wind velocity shall be measured for a period of 5 seconds from the time an athlete passes a mark placed alongside the runway, for the Long Jump 40m from the take-off line.
      - If an athlete runs less than 40m, as appropriate, the wind velocity shall be measured from the time they commence their run.

- Triple Jump
  - The wind velocity shall be measured for a period of 5 seconds from the time an athlete passes a mark placed alongside the runway, for the Triple Jump 35m from the take-off line.
  - If an athlete runs less than 35m, as appropriate, the wind velocity shall be measured from the time they commence their run.

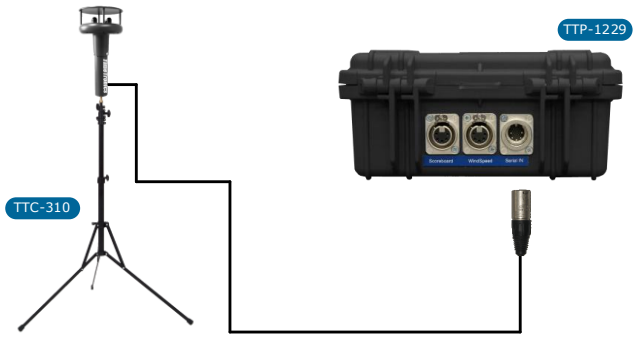
- Placing in running direction of the athlete
-

Running Direction

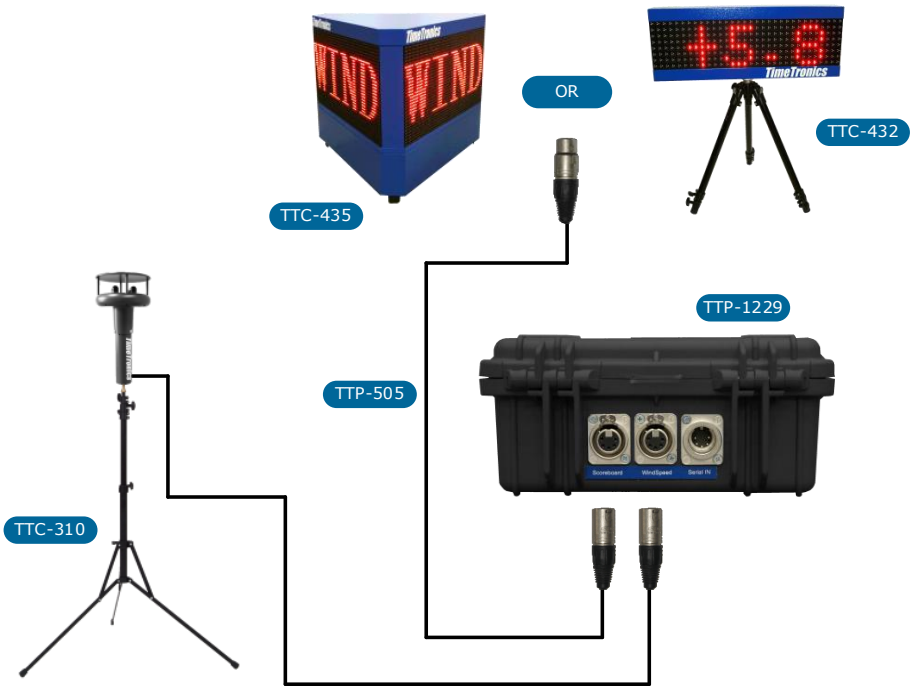
5. How to connect WindSpeed II – Track Events

WindSpeed II can be controlled either by WindSpeed II controller or direct by a photo finish (Argus, MacFinish,…) . The following configurations are possible:

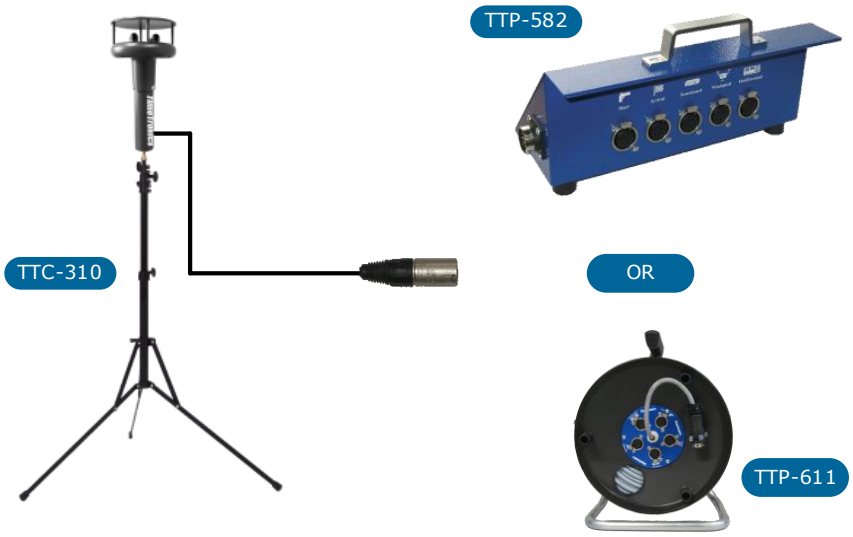
5.1 WindSpeed II controlled standalone without scoreboard



5.2 WindSpeed II controlled standalone with scoreboard



5.3 WindSpeed II controlled by photo finish Argus, MacFinish II Ethernet, 2D 100 or 2D 400 without Scoreboard

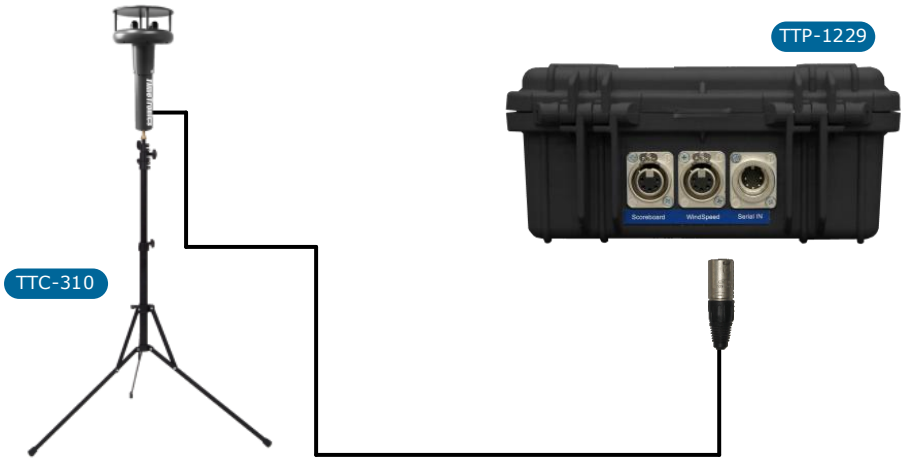


5.4 WindSpeed II controlled by photo finish Argus, MacFinish II Ethernet, 2D 100 or 2D 400 with Scoreboard

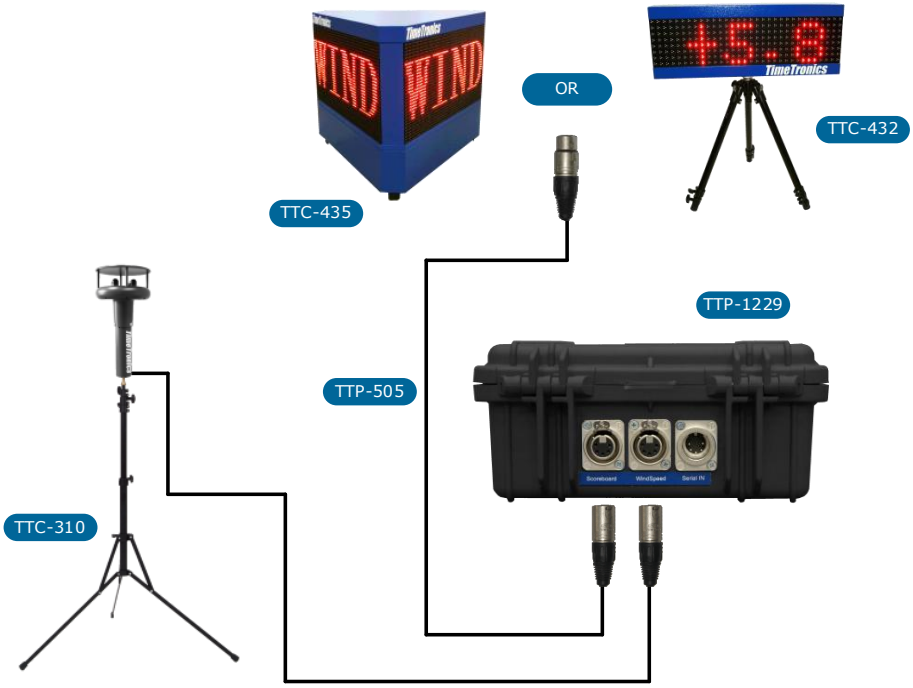
6. How to connect WindSpeed II – Field Events

WindSpeed II can be controlled either by a computer, tablet, with or without Scoreboard, cabled or wireless with TTP-1010

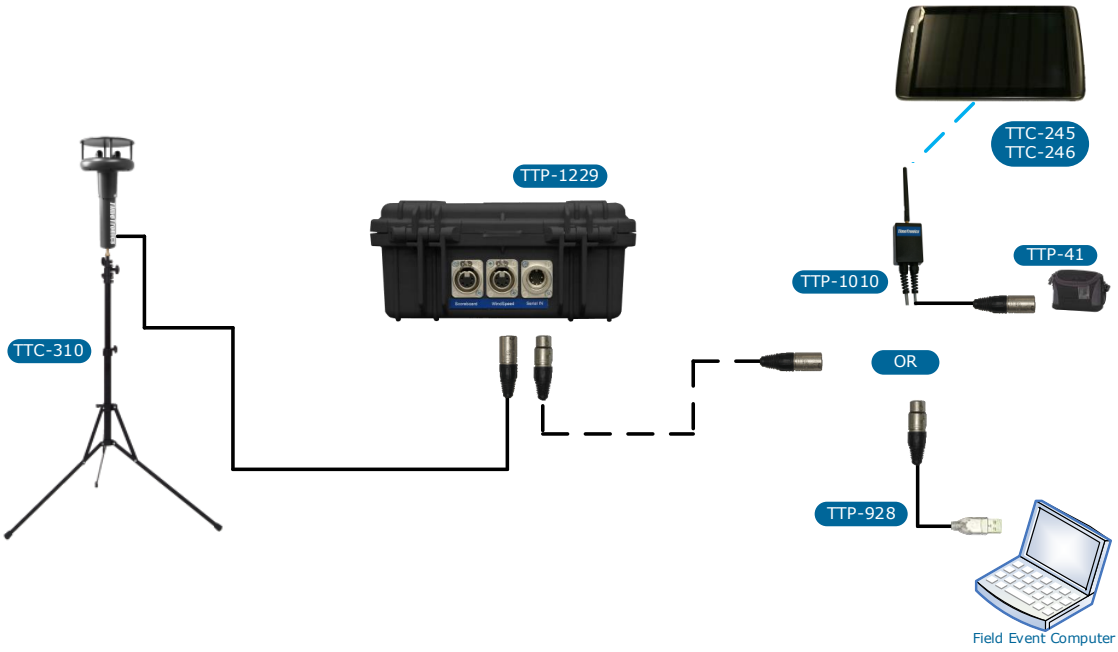
6.1 WindSpeed II controlled standalone



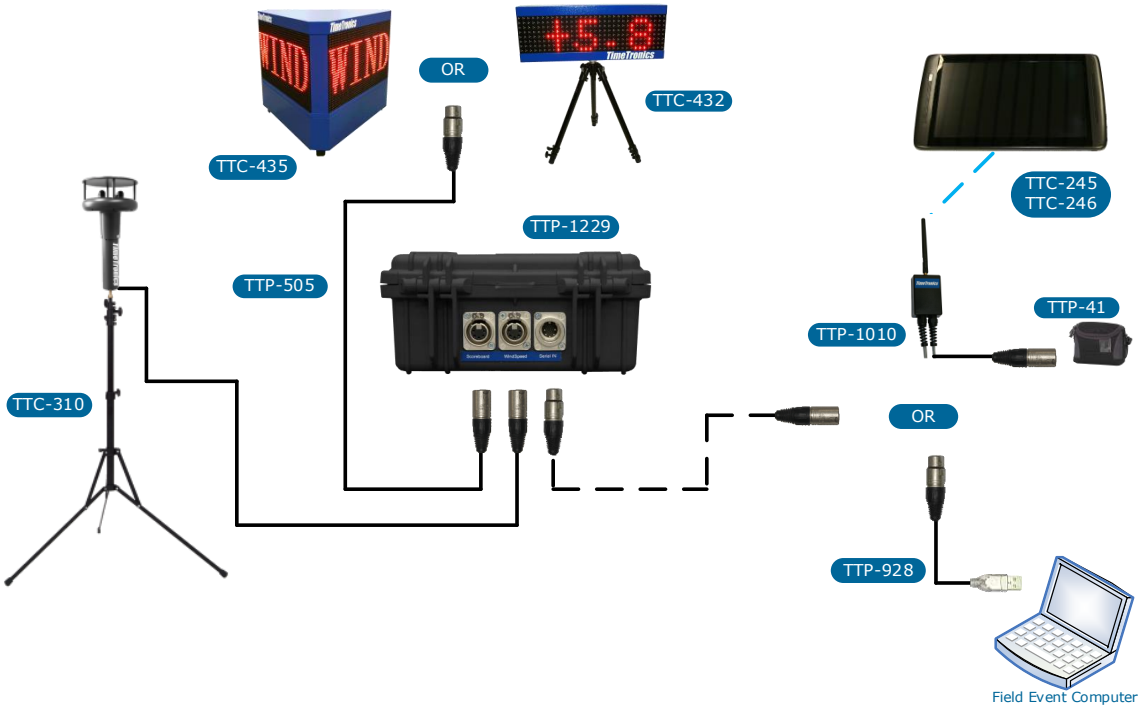
6.2 WindSpeed II controlled standalone with scoreboard



6.3 WindSpeed II controlled by computer or tablet without scoreboard



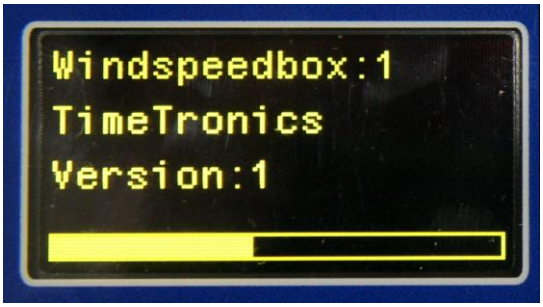
6.4 WindSpeed II controlled by computer or tablet with scoreboard



7. WindSpeed II Controller

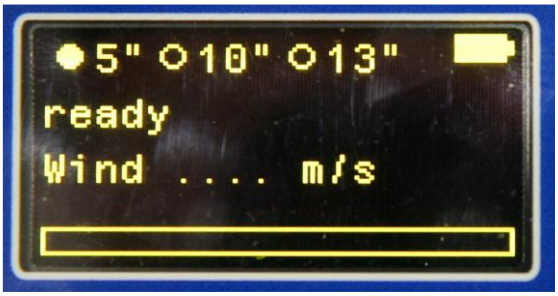
Long press to start WindSpeed Controler

Startup screen



If no WindSpeed II connected then

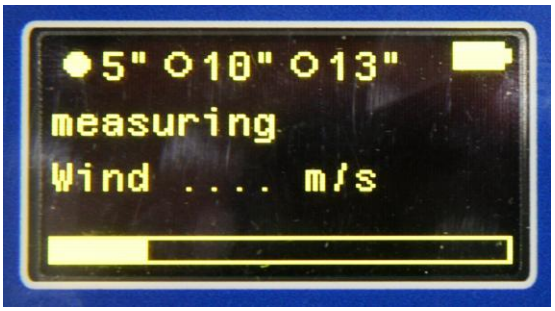
If WindSpeed II connected then



To change measurement time to 5, 10 or 13 seconds

To start measurement

Bar is filling up when measuring



Result

8. Charging of battery

The WindSpeed II unit itself does not contain any battery and does not have to be charged But the WindSpeed II Controller should be charged before and after every event and every 4 months if it is not used.

To charge with TTP-1246 charger:

TTP-1246
Charger Li-Ion

Important remark:

Do not forget to switch off the WindSpeed II Controller after usage!!! By pressing on the on/off button till system is shutting down.

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