

Windvane Wiring: Connections and Cable/wire Colours (colors)

(For A100 Series Anemometer connections and cable/wire colourst

(For General Information on Instrument Cables and Installationt

General information on common W200P Series Potentiometer Windvane cable colour conventions

IMPORTANT INFORMATION:

1) ALWAYS CHECK THE INSTRUCTIONS & SPECIFICATION SHEETS ORIGINALLY SUPPLIED WITH THE INSTRUMENT FOR THE CORRECT WIRING/CONNECTIONS AND FULL INFORMATION/SPECS FOR THE INSTRUMENT. INSTRUMENTS WITH EXTRA "SUFFIXES" AT THE END OF THE PART/MODEL NUMBER MAY HAVE DIFFERENT/NON-STANDARD WIRING AND SPECIFICATIONS. THE INFORMATION PROVIDED HERE IS FOR YOUR CONVENIENCE, AND FOR GUIDANCE ONLY. VECTOR INSTRUMENTS (WINDSPEED LTD) CANNOT BE HELD LIABLE FOR ANY DAMAGE CAUSED BY INCORRECT CONNECTION OF INSTRUMENTS BASED ON THE INFORMATION GIVEN HERE.

2) IF UNSURE ABOUT THE INSTRUMENT TYPE, SPECIFICATIONS, SUPPLY VOLTAGE/CURRENT RATINGS , OPTIONS OR CONNECTIONS, ALWAYS CONTACT OUR SALES DESK QUOTING ANY IDENTIFICATION INFORMATION YOU HAVE (TYPE / SERIAL NUMBERS ETC) TO OBTAIN COPIES OF ANY AVAILABLE INSTRUCTIONS AND OTHER INFORMATION ON A PARTICULAR INSTRUMENT.

3) IF YOU STILL AREN'T SURE OF THE INSTRUMENT TYPE, INITIALLY TRY CONNECTING A LOW VOLTAGE CURRENT LIMITED DC POWER SUPPLY SOURCE (E.G. A SMALL 9V BATTERY) WITH A SERIES RESISTOR AND MONITOR THE SUPPLY CURRENT USING A METER, BEING PREPARED TO QUICKLY DISCONNECT THE SUPPLY IF A HIGHER THAN EXPECTED CURRENT FLOWS.

4) *NEVER* CONNECT ANEMOMETERS OR WINDVANES DIRECTLY TO A HIGH VOLTAGE "MAINS" ("LINE" OR "UTILITY") SUPPLY.

W200P Series Windvane Models WITHOUT "/HE-4" internal heater option

(Letters in [square-brackets] refer to notes below tables. For types not listed below, refer to the instructions provided with the instrument)

W200P Type	Cable cores	Red	Blue	Green	Yellow	White	Black	Brown	Violet
W200P (-01)	6	Supply+ (pos) [p]	Supply- (neg)	Analog / Voltage out [q]	Output negative /common [r][t]	Ref./Cal. Output [s][t]	Body-shell	N/A	N/A
W200P /L	6	Supply+ (pos) [p]	Supply- (neg)	Analog / Voltage out [q]	Output negative /common [r][t]	Ref./Cal. Output [s][t]	Body-shell	N/A	N/A

W200P Series Windvane Models WITH "/HE-4" internal heater option

(Letters in [square-brackets] refer to notes below tables. For types not listed below, refer to the instructions provided with the instrument)

W200P Type	Cable cores	Red	Blue	Green	Yellow	White	Black	Brown	Violet
W200P (-01)	8	Supply+ (pos) [p]	Supply- (neg)	Analog / Voltage out [q]	Output negative /common [r][t]	Ref./Cal. Output [s][t]	Body-shell	heater [x]	heater [x]
W200P /L	8	Supply+ (pos) [p]	Supply- (neg)	Analog / Voltage out [q]	Output negative /common [r][t]	Ref./Cal. Output [s][t]	Body-shell	heater [x]	heater [x]

Notes:

N/A = wire/core is not present in the cable.

[p] The RED wire is connected to the "top/high" end of the potentiometer "track/winding" (clockwise end when viewed from above), corresponding with the 355-360 degree end of the measurement range. The BLUE wire is connected to the other end (anti-clockwise, or 0 degree end) of the potentiometer "track/winding". During operation, it is normal to supply an accurate/stable "reference" voltage (typically 1V to 5V) to the potentiometer via the RED and BLUE wires (RED = positive, BLUE = negative/"0V").

[q] As the windvane "fin/vane-arm" turns with the wind, it turns the windvane/potentiometer spindle which causes the potentiometer "wiper" to move along the "track/winding". The GREEN wire is connected to the "wiper". As the wiper moves according to wind direction, the voltage on the GREEN wire varies from "zero" at the 0 degree end up to the voltage supplied via the RED wire at the clockwise/355-360 end of the potentiometer. This signal is therefore proportional to wind direction.

[r] The YELLOW wire is connected to the same point as the BLUE wire on the potentiometer. This allows measurement of the "actual" voltage at the 0 degree end of the track to allow/correct for voltage-drops in long cables. Some loggers use this wire to help construct a "bridge or half-bridge" circuit for the measurement.

[s] The WHITE wire is connected to the same point as the RED wire on the potentiometer. This allows measurement of the "actual" voltage at the 355-360 degree end of the track to allow/correct for voltage-drops in long cables. Some loggers use this wire to help construct a "bridge or half-bridge" circuit for the measurement.

[t] If the equipment to which the windvane is connected is not going to "make proper use" of the WHITE and YELLOW wires (as described above), then rather than "isolating/insulating" the WHITE and YELLOW wires, it is normally useful to connect the YELLOW wire to the same place on the measuring equipment as the BLUE wire, and connect the WHITE wire to the same place on the measuring equipment as the RED wire - doing so causes the windvane to be operated in "3-wire mode" (rather than 5-wire mode) and this "paralleling" of the wires can help to reduce small errors due to voltage drops in long cables.

[x] The "/HE-4" anti-icing heater option is available in "12V/6W" and "24V/6W" versions. Using a resistance meter (Ohm Meter) to measure between the "heater" wires indicated in the tables above will give a reading of around 24 ohms for the 12V type, and around 96 ohms for the 24V type. These anti-icing heaters DO NOT include a thermostat or any other sort of thermal control, they are simply a resistive heating element.

General W200P Series Potentiometer Windvane Wiring Notes:

A) Different potentiometer windvane types/models have different maximum/minimum limits on the allowed supply voltage range, and the potentiometers fitted into these windvanes have different resistances. The standard W200P(-01) uses a 1K ohm (1000 ohm) potentiometer, the W200P/L uses a 2K ohms (2000 ohm) potentiometer. Refer to the individual windvane specification sheet.

B) The presence (or absence) of the "/PC3" anti-surge option does not affect wiring or cable colours.

C) The cable shield/screen is "isolated/floating" at the windvane end, and should normally be grounded at the measuring/datalogger end for best shielding effectiveness. The BLACK wire (where present in the cable) is normally connected to the bodyshell of the instrument - if the instrument mounting/mast is isolated, connect BLACK to ground at the logger (otherwise isolate/insulate the BLACK wire).

D) Standard W200P Series Windvanes with the "/HE4" anti-icing heater option are fitted with an 8-core cable and are therefore easily identified.

E) "Numeric suffixes" to the windvane part number normally indicate the "fitted" cable length.

F) Other "suffixes" to the windvane part number may indicate a "special" or "non-standard" windvane, in which case do not rely on the standard connection information given above (refer to special instructions provided with the windvane).

G) When connecting windvanes to measuring equipment, loggers, or junction boxes and connectors, "unused" wires MUST be "isolated/insulated". If "unused" wires are not "isolated/insulated" they can cause excessive current to be drawn from the power supply, or can cause incorrect/intermittent operation if they touch other signals/terminals/contacts. In extreme cases, the windvane potentiometer could be damaged.

H) Some logger models require "Signal Conditioning Modules" (interface adaptors) from the logger manufacturer. Consult your logger manual/manufacturer.