

This instrument incorporates a precision wire-wound potentiometer as shaft angle transducer, enabling wind direction to be accurately determined when used in suitable electronic circuits. The potentiometer has the lowest possible torque consistent with long life and reliability, the small gap at north being filled with an insulating material to ensure smooth operation over the full 360°. The vane-arm assembly is attached by the unique Porton™ gravity fastener, allowing rapid attachment and release; thus improving portability.

Construction is from anodised aluminium alloys and stainless steels for exposed parts. Combined with the hard plastic (upper) plain bearing and precision ball races, the result is an instrument with a long service interval which is suitable for permanent exposure to the weather.

In the marine version,^{#1} body/fin sealing is enhanced and a touching shaft-seal is fitted above the upper (replaceable) bearing for extra protection.

For applications where improved sensitivity is required, a larger vane version ^{#2} is available.

An anti-icing heater can also be fitted to extend operation by removing hoare frost around the upper bearing.



Range of Operation

Maximum Wind Speed: Over 75m/s (150Knots, 170mph) [60m/s]^{#2}
Range: 360° mechanical angle, full-circle continuous rotation allowed.
Temperature range: -50 to +70°C

Performance

Threshold: 0.6m/s (1.2Knot, 1.4mph) [0.75m/s]^{#1} [0.5m/s]^{#2}
(the vane will commence movement when aligned at 45° to the flow).
Response: Damped natural Wavelength: 3.4m [3.6m]^{#2} Damping Ratio: 0.2m [0.24m]^{#2}
Recovery distance: 0.51m [0.54m]^{#2} Distance constant: 2.3m [2.4m]^{#2}
Repeatability: ±0.5° vane removed and replaced (no measurable backlash movement during use).
Life of potentiometer: 5 x 10⁷ cycles (10 years typical exposure).
Service Interval: 4 to 5 years.
Accuracy: ±3° in steady winds >5m/s [6m/s]^{#1} [3.5m/s]^{#2} (±2° obtainable following calibration).

Electrical

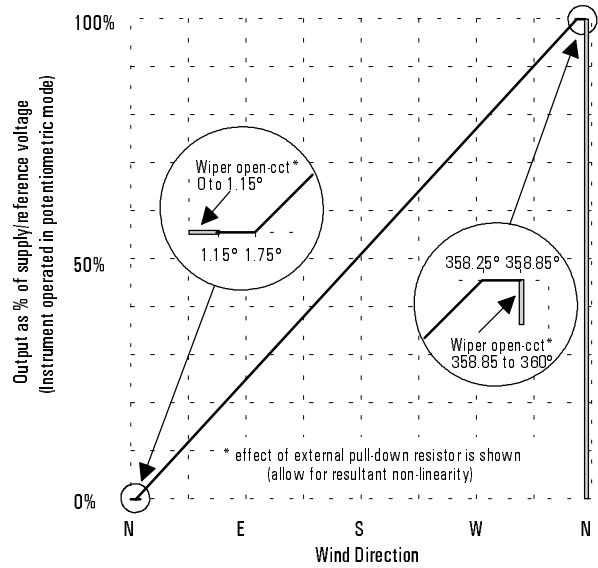
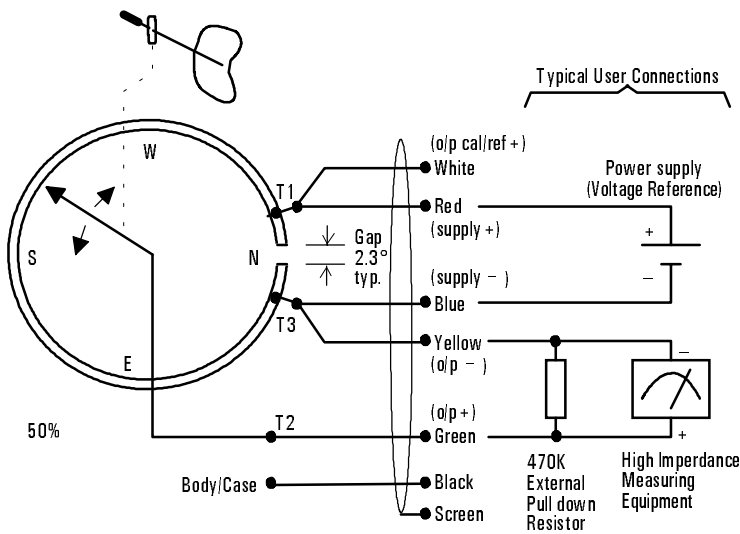
Potentiometer resistance: 1000 Ω ±10%
Maximum dissipation: 0.5W, -50 to +20°C (de-rate linearly to 0.25W at 70°C)
Maximum wiper current: 50µA*, (20mA absolute max.)
Supply voltage: 1 to 5V*, (20V absolute max.) across terminals 1 & 3.
Case to pot. voltage: 72V max. (case or screen to any terminal on pot.)
Insulation resistance: >50MΩ
Temperature coefficient of resistance: ±50 x 10⁻⁶/°C
Electrical continuity angle: 357.7 ±1.5° (2.3° gap at north)
Electrical variation angle: 356.5 ±1.5° (3.5° dead-band)
Resolution: ±0.2°
Independent non-linearity: ±0.25% (unloaded)

Notes: Figures marked * refer to recommended operating conditions.

Bracketed figures marked ^{#1,#2} refer to parameters changed when options are fitted, (see options section overleaf).

W200P

Electrical (cont'd)



Terminations:

3 metres of 6-wire cable with overall screen: 7 x 0.2mm (\approx 24AWG) overall tinned copper wire braid screen and black pvc outer. Alternative standard lengths: 6m, 10m, 15m. (where extended, max. recommended overall length: 100m)

Connections:

Red, White: Terminal T1. Green (wiper): Terminal T2.
Blue, Yellow: Terminal T3. Black: Sensor body.
Screen: Isolated.

Rotation sense:

Direction changes from N through E,S,W to N cause the wiper to move along the track from terminal T3 to terminal T1. Note: Wind direction is North when wind is coming from the North.

Mechanical

Net weight:

310g. [350g]^{#2}

Packed weight:

700g. [780g]^{#2}

Packed dimensions:

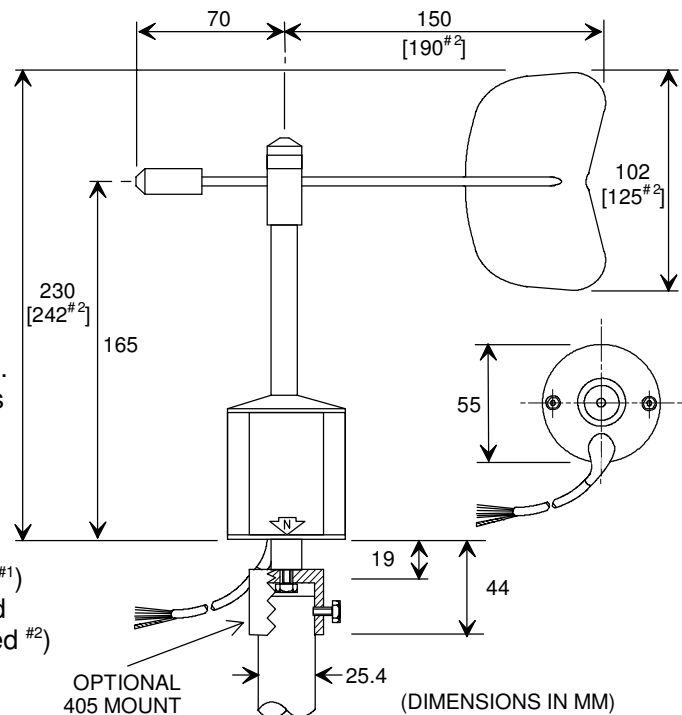
250 x 160 x 160mm
[230 x 180 x 170mm]^{#2}
(one instrument c/w fin)

Fixing:

0.25 inch UNC/BSW screw into base, or optional mast adapter (type 405 shown). Taper fitting also available.

Materials:

Anodised aluminium alloys and stainless steels for exposed parts.



Options

/WR:- Marine version (see bracketed figures marked #1)

/LV:- The standard F20 vane-arm/fin can be replaced with a larger F20/LV type (see bracketed figures marked #2)

/HE-1, /HE-2:- Anti-icing heaters, 6W (12V, 24V resp.)

Also available is a selection of mounting brackets and arms, mast adaptors and spare parts; including vane, bearing, potentiometer/spindle assy. & overhaul kit.

Vector Instruments

115, Marsh Road,
RHYL, N. Wales, LL18 2AB,
United Kingdom.

Tel: 01745 350700

Fax: +44 (0) 1745 344206

050-202-07

Vector Instrument's policy of continuous development means that this specification may be altered without notice, however new product will wherever possible remain compatible with that previously supplied.

Distributor:

S-W200P-7

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