



Technical Data Sheet

Product: Wind Sensor and Control Product Code: Q Series



- NCA provide sensors and controls for where features are adversely affected by wind.
- Pictured far left is a 3 cup Anemometer which generates a DC voltage proportional to wind speed and requires no external power.
- On the right of the picture opposite is a Wind Vane which uses a potentiometer to produce a voltage proportional to wind direction.
- Both sensors are constructed from corrosion resistant materials and incorporate sealed

stainless steel bearings for reliability and low starting threshold.

- These sensors can be mounted directly to a pipe mast with a ½” bsp male thread or as a pair on a cross arm or mounting sickle.

- The right hand picture is a combined Wind Speed and Alarm unit comprising a highly accurate indicator with dual point set point alarm relays. The alarm relays may be used to operate alarm and control devices when wind speed exceed the chosen set points limits shown on the scale plate of the meter, by adjustable red pointers.



- Operation – the wind speed input signal is amplified to drive the indicator and the High & Low level comparator circuits. When this signal equals or exceed the user adjustable set points, the comparators switch. Some hysteresis is incorporated in the comparator circuit to ensure a flutter free operation. The comparator switched output signal is then applied to the time delay circuits to determine when the relay should operate after the set point has been exceeded.

- The Wind Direction and Alarm unit is a modified Wind Speed and Alarm unit and works on the same principle of operation. This addition sensor is used to prevent adverse affect of strong winds from a specific direction on a water feature. It can be installed to prevent wind blown water from dosing buildings, new plantings or sea water from going on shores.



- Models/ options available:

| Product code | Description |
|--------------|-----------------------------------------------------|
| Q105A-2 | Anemometer plus Wind Speed and Alarm unit |
| Q105-20 | Anemometer sensor |
| Q105-21 | Wind Speed and Alarm unit |
| Q110V-2 | Wind Vane sensor plus Wind Direction and Alarm unit |
| Q110-20 | Wind Vane sensor |
| Q110-21 | Wind Direction and Alarm unit |

- Specifications of Anemometer sensor

| | |
|---------------------------------------|--------------------------------------------------------------------|
| 3 cup assembly with a cup diameter of | 45mm |
| Turning circle diameter | 130mm |
| Body diameter and height | 41.5mm x 170mm |
| Weight | 565g |
| Mounting | ½” bsp female |
| Body material | Brass |
| Cup set material | Fibre glass reinforced phenolic |
| Bearings | 2 stainless steel roller ball, sealed with low viscosity lubricant |
| Transfer coefficient | 0.0526km/per rpm |
| Measurable speed | Over 50m/sec (180km/hr.) |
| Transducer | DC generator |
| Starting Threshold | <0.75m/sec |
| Signal output | 6.5mV/km/hr. nominal – Calibration certificate supplied |
| Output impedance | 30 Ohms nominal |
| Power requirements | Nil |
| Connection | 2 pin |
| Electrical load | >600 Ohms |
| Operating Temperature Range | -20°C to + 60°C |

- Specifications of Wind Vane sensor

| | |
|------------------------------|--------------------------------------------------------------------|
| Vane length | 335mm |
| Turning circle diameter | 382mm |
| Body diameter | 41.5mm |
| Body height | 252mm |
| Weight | 910g |
| Mounting | ½” bsp female |
| Body material | Brass/Stainless Steel |
| Bearings | 2 stainless steel roller ball, sealed with low viscosity lubricant |
| Transducer | Precision potentiometer 5KOhm ±20%, 1.25W max |
| Mechanical/Electrical Travel | Mechanical - 360° / Electrical > 340° |
| Typical Transducer Voltage | 3 to 12 Volts D.C |
| Connection | 5 pin |
| Operating Temperature Range | -20°C to + 60°C |

- Electrical Connection for Wind Direction and Alarm unit

| Termination | Function |
|-------------|------------------------------------------|
| 1 | Anemometer input (-ve or AC) |
| 2 | Anemometer input (+ve or AC) |
| 5 | Power |
| 6 | Power |
| 15 & 35 | Common contact – High set point |
| 16 & 36 | Normally closed contact – High set point |
| 18 & 38 | Normally open contact – High set point |
| 25 & 45 | Common contact – Low set point |
| 26 & 46 | Normally closed contact – Low set point |
| 28 & 48 | Normally open contact – Low set point |



- Specification for Wind Direction and Alarm unit

| | |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Inputs | Anemometer |
| Power | 240Vac $\pm 20\%$, 40 to 70Hz, 3VA – optional power sources available e.g 24 or 110Vac |
| Meter | Permanent magnet moving coil. Taut band and oil damped 90° needle span. Scale length 91mm. White scale plate with black text and markers. |
| Set points | Two set points each with two isolated change over contact sets. Range is 97% of scale length and 3% minimum between set points. |
| Scale | 100km/hr |
| Outputs | Two set points each with two isolated change over contact sets. Indication of relay activation is by LED on scale plate. Contact rating – 5A at 240V ac resistive. |
| Delay | Adjustable from 0.3 to 20 seconds for each set point by screw driver adjustment on rear plate. |
| Temp. Coefficient | Control circuit -0.02%/°C, Meter movement -0.05%/°C |
| Environment | Temperature Operating: 0 to 60°C, Temperature Storage -25 to 70°C, Humidity up to 90% RH at 55°C non-condensing. |
| Terminations | M3.5 compression screw terminals, 18 off |
| Enclosure | To IP52, <1kg, UL94VI |

- Layout and dimensions

