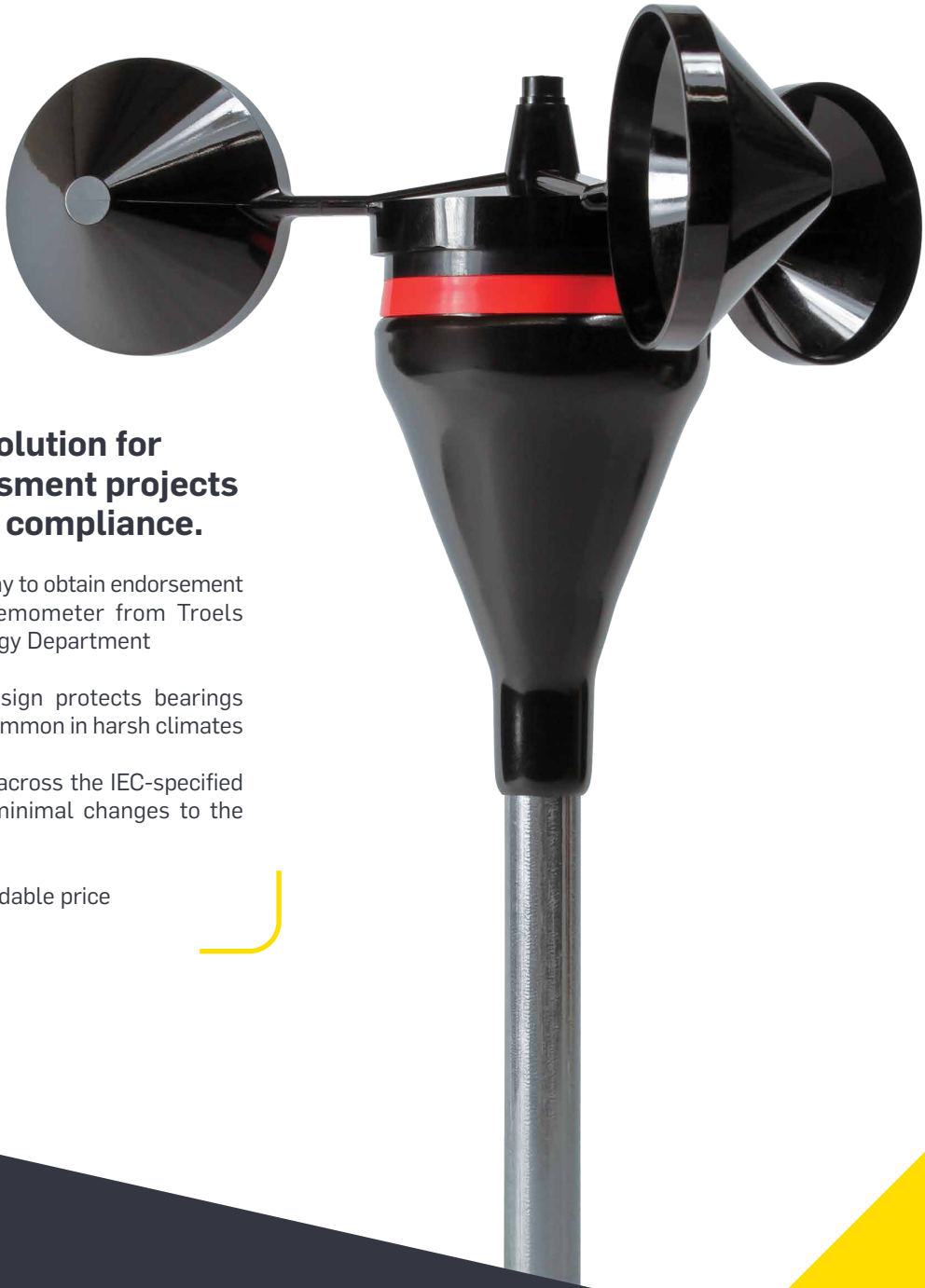
NRG CLASS 1 ANEMOMETER



The ideal, low-cost solution for wind resource assessment projects that require class 1A compliance.

- NRG Systems is the first company to obtain endorsement in the classification of an anemometer from Troels Pedersen of the DTU Wind Energy Department
- Patent-pending, dual shaft design protects bearings from debris and impact loads common in harsh climates
- Excellent friction performance across the IEC-specified temperature range, ensuring minimal changes to the calibrated transfer function
- Class 1 performance at an affordable price

NRG Systems®

Description

Sensor type
- 3-cup anemometer

Sensor range
- 1 m/s to 96 m/s (2.2 mph to 215 mph) (highest tested)

Instrument compatibility
- all NRG Systems data loggers

Applications
- wind resource assessment
- meteorological studies
- environmental monitoring

Output Signal

Signal type
- low level AC sine wave, frequency linearly proportional to wind speed

Anemometer transfer function
- refer to individual calibration report for anemometer transfer function
- all NRG Class 1 anemometers are calibrated per IEC 61400-12-1, Annex F

Output voltage at threshold
- 80 mV (peak-to-peak) minimum

Output voltage at 60 Hz
- 12 V (peak-to-peak) typical
- output amplitude NOT proportional to wind speed

Calibration
- individually calibrated, calibration report provided via electronic download

Output signal range
- 0 Hz to 125 Hz

Uncertainty

IEC 61400-12-1 Classification
- Class 1.01A
- Class 8.44B

IEC 61400-12-1 operational standard uncertainty
- ± 0.06 m/s at 10 m/s for Class A
- ± 0.49 m/s at 10 m/s for Class B
- refer to individual calibration report for information on calibration uncertainty

Response Characteristics

Threshold
- 0.79 m/s (1.77 mph) per ASTM D 5096-02

Swept diameter of rotor
- 190 mm (7.5 in)

Distance constant (63% recovery)
- 2.36 m (7.74 ft) at 5 m/s per ASTM D 5096-02
- 2.28 m (7.48 ft) at 10 m/s per ASTM D 5096-02

Moment of inertia
- 1.01 x 10^{-4} kg-m^2
- 74.5 x 10^{-6} S-ft^2

Installation

Mounting
- Onto a 13 mm (0.5 in) diameter mast with cotter pin and set screw

Tools required
- 0.25 in nut driver, petroleum jelly, electrical tape

Environmental

Operating temperature range
- -55 °C to 60 °C (-67 °F to 140 °F)

Operating humidity range
- 0% to 100% RH

Materials

Cups
- one piece injection-molded black polycarbonate

Body
- black ABS plastic

Shaft
- hardened 400 series stainless steel

Bearing
- ball bearings

Magnet
- Indox 1, 25 mm (1 in) diameter, 13 mm (0.5 in) long, 4 poles

Coil
- single coil, bobbin wound, 4100 turns of #40 wire, shielded for ESD protection

Boot
- protective PVC sensor terminal boot included

Terminals
- brass

Physical

Connections
- 4-40 brass hex nut/post terminals

Weight
- 0.14 kg (0.3 lbs)

Dimensions
- 3 cups of conical cross-section, 51 mm (2 in) diameter
- 81 mm (3.2 in) overall assembly height

For more information:

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ISO 9001: 2015 Certified
ISO 14001: 2015 Self-Certified

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