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TYPE 40 MAXIMUM ANEMOMETER



MEASURING THE WIND'S ENERGY



The Maximum #40 has three conical cups molded in one continuous piece. Cup rotation induces a sine wave voltage in a single coil by a four pole magnet. Two sine wave cycles are produced for each revolution of the cups with the frequency directly proportional to windspeed.

■ The Maximum #40 Anemometer has proven to be rugged, reliable and highly accurate. Over 100,000 units are now in use on wind farms, on mountaintops and in thousands of household, wind energy and institutional installations. ■ Maximum cup anemometers have recorded wind to 96 m/s (214mph). Their low moment of inertia and unique bearings permit very rapid response to gusts and lulls. The black Lexan cups (virtually shatterproof) have thermal properties which resist and shed icing far more effectively than metal assemblies. ■ Because of their output linearity, these sensors are ideal for use with various data retrieval systems and controllers. The unique bearing system ensures that wind-blown dirt and moisture will not destroy the bearings or degrade performance. ■ The unbeatable combination of accuracy, simple yet rugged construction and very low cost have made the #40 the first choice for professionals in all fields. Optional digital outputs and calibration are available. The Maximum #40 from NRG Systems: the wind industry standard anemometer.

NRG SYSTEMS

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APPLICATIONS

- Anemometer for wind resource assessment instrumentation
- Research measurements in environmental studies
- Control anemometer for new or existing wind turbines
- Sensing wind speeds at sporting events (i.e. Olympics)
- Engineering studies on wind effects on bridges, skyscrapers

FEATURES

- Very simple, elegantly engineered construction
- Dirt and wear resistant, modified Teflon bearing system
- All corrosion-resistant materials
- All 3 cups molded in one piece for repeatable performance
- Frequency output for ease of filtering and long cable runs
- Professional qualities at a minimum price
- Never change bearings; stays accurate many years in hostile environments
- Optional signal conditioners for digital and analog outputs available

SPECIFICATIONS

MECHANICAL:

3 cups of conical cross-section, 51mm (2") diameter
190mm (7.5") swept diameter of rotor
51mm (3.2") overall assembly height
Moment of inertia of rotor assembly = 68×10^{-6} S-ft²
Mounting—(Using a cotter pin and set screw) on a 13mm (0.5") diameter mast with a #35 hole, 11mm (.35") from the top.

Materials:

Cups—one piece injection- molded black polycarbonate (Lexan)
Body—housing is black ABS plastic
Shaft—beryllium copper, fully hardened
Bearing—modified Teflon, self-lubricating. Rated PV factor of 20,000 (at 15 mph, PV is approx. 500; at 100 mph PV is approx. 2,000). Upper bearing is centered in the plane of cup thrust for optimal loading.
Permanent magnet—Indox 1, 25mm (1") dia., 13mm (0.5") long, 4 poles

Threshold:

Starting threshold—0.78 m/s (1.75 mph)
Cup distance constant (63% recovery)—3.0m (10')

Environmental:

Operating temperature -55°C to 60°C (-67 to 150 F)
Operating humidity range 0 to 100% RH

Weight: 0.1kg (0.2 lb)

Shipping Weight: 0.5kg (1 lb)

ELECTRICAL:

Single coil, bobbin wound, 4100 turns of #41 wire
Voltage is a sine wave with frequency changing linearly with wind speed—
60 hz = 45.82 m/s (102.5 mph) [1.7 mph/Hz w/0.78 offset, 0.765 m/s/Hz w/0.35 offset]
Voltage is 2.0 VAC at 60 cycles—minimum (typical is 6 VAC P-P)
Hall Effect (#40H): A Hall Effect switch replaces the single coil. The voltage output is a square wave with the same frequency-to-wind speed relationship as the single coil. Requires a 5 to 24 VDC voltage with 5ma of current.

Custom sensors available for wind turbine control, etc.
Please contact us directly.

SPECIFICATIONS MAY CHANGE WITHOUT NOTICE.

ORDERING INFORMATION:

NRG #40 Anemometer	Cat. No. 40
#40 Hall Effect Output Anemometer	Cat. No. 40H
#40 Calibrated Anemometer	Cat. No. 40C



Shown here is the #40 Anemometer with the #200P NRG wind direction vane.



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