

# SPECIFICATIONS

## NRG #40C Anemometer

### FEATURES

- The standard anemometer used in the wind energy industry
- Short distance constant
- Simple, durable design



The NRG #40C anemometer is the industry standard anemometer used worldwide. NRG #40 anemometers have recorded wind speeds of 96 m/s (214 mph). Their low moment of inertia and unique bearings permit very rapid response to gusts and lulls. Because of their output linearity, these sensors are ideal for use with various data retrieval systems. A four pole magnet induces a sine wave voltage into a coil producing an output signal with a frequency proportional to wind speed. The #40C is constructed of rugged Lexan cups molded in one piece for repeatable performance. A protective rubber terminal boot is included.

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Description	Sensor type	3-cup anemometer
	Applications	<ul style="list-style-type: none"><li>• wind resource assessment</li><li>• meteorological studies</li><li>• environmental monitoring</li></ul>
	Sensor range	1 m/s to 96 m/s (2.2 mph to 214 mph) (highest recorded)
	Instrument compatibility	all NRG loggers
Output signal	Signal type	low level AC sine wave, frequency linearly proportional to windspeed
	Transfer function	$m/s = (Hz \times 0.765) + 0.35$ [miles per hour = $(Hz \times 1.711) + 0.78$ ]
	Calibration	each anemometer individually calibrated, calibration reports provided via electronic download
	Output signal range	0 Hz to 125 Hz (highest recorded)
	Threshold	0.78 m/s (1.75 miles per hour)



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Response characteristics	Distance constant (63% recovery)	3.0 m (10 feet)
	Moment of inertia	$68 \times 10^{-6} \text{ S-ft}^2$
	Swept diameter of rotor	190 mm (7.5 inches)
	Mounting	onto a 13 mm (0.5 inch) diameter mast with cotter pin and set screw
Installation	Tools required	0.25 inch nut driver, petroleum jelly, electrical tape
	Operating temperature range	-55 °C to 60 °C (-67 °F to 140 °F)
Environmental	Operating humidity range	0 to 100% RH
	Connections	4-40 brass hex nut/post terminals
Physical	Weight	0.14 kg (0.3 pounds)
	Dimensions	<ul style="list-style-type: none"> <li>• 3 cups of conical cross-section, 51 mm (2 inches) dia.</li> <li>• 81 mm (3.2 inches) overall assembly height</li> </ul>
	Cups	one piece injection-molded black polycarbonate
Materials	Body	housing is black ABS plastic
	Shaft	beryllium copper, fully hardened
	Bearing	modified Teflon, self-lubricating
	Magnet	Indox 1, 25 mm (1 inch) diameter, 13 mm (0.5 inch) 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

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