



# NRG Classic #40H Anemometer, Hall Effect

The NRG Systems Classic #40H anemometer is an unheated three-cup anemometer designed specifically for turbine control...

## SPECIFICATIONS

**Sensor type**  
**Applications**

### Description

- 3-cup anemometer
- wind turbine control
- wind speed measurement for programmable controllers
- wind resource assessment
- meteorological studies
- environmental monitoring

**Sensor range**  
**Instrument compatibility**

1 m/s to 96 m/s (2.2 mph to 214 mph) (highest recorded)  
controllers or loggers requiring a square wave signal

**Signal type**

### Output signal

- square wave signal from open collector transistor
- external pull-up resistor required
- frequency proportional to wind speed

**Anemometer Transfer Function**

- Consensus Transfer Function:  
Scale Factor (Slope): 0.765 m/s/Hz (1.711 mph/Hz)  
Offset: 0.35 m/s (0.78 mph)
- refer to the white paper "The Maximum Type 40 Anemometer Calibration Project" for more information on the consensus transfer function

**Recommended load resistance**

- output sinks up to 20 mA
- 3300 Ohm typical pull-up resistor for 24 V
- 1500 Ohm typical pull-up resistor for 12 V
- 330 Ohm typical pull-up resistor for 5 V

**Calibration**  
**Output signal range**  
**Uncertainty**

- calibrated version available
- 0 Hz to 125 Hz (highest recorded)
- operational standard uncertainty +/- 0.14 m/s at 10 m/s for class A operational range to IEC
- operational standard uncertainty +/- 0.45 m/s at 10 m/s for class B operational range to IEC
- refer to Application Note "#40C Anemometer Uncertainty" for definitions and more information

**Threshold**  
**Distance constant (63% recovery)**  
**Moment of inertia**  
**Swept diameter of rotor**

### Response characteristics

0.78 m/s (1.75 miles per hour)  
3.0 m (10 feet)  
 $68 \times 10^{-6} \text{ S-ft}^2$   
190 mm (7.5 inches)

**Supply voltage**  
**Supply current**

### Power requirements

5 V to 26 V DC  
9 mA max.

**Mounting**

### Installation

onto a 13 mm (0.5 inch) diameter mast with cotter pin and set screw

**Tools required**

0.25 inch nut driver, petroleum jelly, electrical tape

**Operating temperature range**  
**Operating humidity range**

### Environmental

-55 °C to 60 °C (-67 °F to 150 °F)  
0 to 100% RH

**Connections**  
**Weight**  
**Dimensions**

### Physical

- 4-40 brass hex nut / stud terminals
- 0.14 kg (0.3 pounds)
- 3 cups of conical cross-section, 51 mm (2 inches) dia.
- 81 mm (3.2 inches) overall assembly height

**Cups**  
**Body**  
**Shaft**  
**Bearing**  
**Boot**  
**Terminals**

### Materials

- one piece injection-molded black polycarbonate
- black ABS plastic
- beryllium copper, fully hardened
- modified Teflon, self-lubricating
- protective PVC sensor terminal boot included
- brass terminal studs
- nickel plated brass nuts

**Note: The NRG sensor is compatible with the DVE GFI Grid Feed Inverter series.**

