RNRG 40H ANEMOMETER

The 40H Anemometer is an unheated three-cup anemometer that provides high precision wind speed measurements.

	RNRG 40H Anemometer (#5930)	RNRG 40H Anemometer	MEASNET Calibrated (#2551)
DESCRIPTION		
Sensor type	3 Cup Anemometer	3 Cup Anemometer
Applications	• Wind turbine control • Wind speed measurement for programmable controllers • Wind resource assessment • Meteorological studies • Environmental monitoring	• Wind turbine control • Wind speed measurement for programmable controllers • Wind resource assessment • Meteorological studies • Environmental monitoring
Sensor range	1 m/s to 96 m/s (2.2 mph to 215 mph) (highest recorded)	1 m/s to 96 m/s (2.2 mph to 215 mph) (highest recorded)
Instrument compatibility	Controllers or loggers requiring a square wave signal	Controllers or loggers requiring a square wave signal
OUTPUT SIGNAL		

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Signal type	• Square wave signal from open collector transistor • External pull-up resistor required • Frequency proportional to wind speed	• Square wave signal from open collector transistor • External pull-up resistor required • Frequency proportional to wind speed
Anemometer Transfer Function	m/s = (Hz x 0.765) + 0.35 [miles per hour = (Hz x 1.711) + 0.78]	m/s = (Hz x 0.765) + 0.35 [miles per hour = (Hz x 1.711) + 0.78]
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	• 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	Calibration certificate for #2551 available via electronic download	Calibration certificate for #2551 available via electronic download
Output signal range	0 Hz to 125 Hz	0 Hz to 125 Hz
RESPONSE CHARACTERISTICS		
Threshold	0.78 m/s (1.75 miles per hour)	0.78 m/s (1.75 miles per hour)

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Distance constant (63% recovery)	3.0 m (10 feet)	3.0 m (10 feet)
Moment of inertia	68 x 10^{-6}S-ft^2	68 x 10^{-6}S-ft^2
Swept diameter of rotor	190 mm (7.5 inches)	190 mm (7.5 inches)
POWER REQUIREMENTS		
Supply voltage	5 V to 26 V DC	5 V to 26 V DC
Supply current	9 mA maximum	9 mA maximum
INSTALLATION		
Mounting	Onto a 13 mm (0.5 inch) diameter mast with cotter pin and set screw	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	0.25 inch nut driver, petroleum jelly, electrical tape
Accessories	Protective PVC sensor terminal boot included	Protective PVC sensor terminal boot included
ENVIRONMENTAL		
Operating temperature range	-55 °C to 60 °C (-67 °F to 150 °F)	-55 °C to 60 °C (-67 °F to 150 °F)

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Operating humidity range	0 to 100% RH	0 to 100% RH
PHYSICAL		
Connections	4-40 brass hex nut / stud terminals	4-40 brass hex nut / stud terminals
Weight	0.14 kg (0.3 pounds)	0.14 kg (0.3 pounds)
Dimensions	• 3 cups of conical cross-section, 51 mm (2 inches) dia. • 81 mm (3.2 inches) overall assembly height	• 3 cups of conical cross-section, 51 mm (2 inches) dia. • 81 mm (3.2 inches) overall assembly height
MATERIALS		
Cups	One piece injection-molded black polycarbonate	One piece injection-molded black polycarbonate
Body	Black ABS plastic	Black ABS plastic
Shaft	Beryllium copper, fully hardened	Beryllium copper, fully hardened
Bearing	Modified Teflon, self-lubricating	Modified Teflon, self-lubricating
Boot	Protective PVC sensor terminal boot included	Protective PVC sensor terminal boot included
Terminals	• Brass terminal studs • Nickel plated brass nuts	• Brass terminal studs • Nickel plated brass nuts