

NRG ICEFREE3 HEATED VANE



The heated IceFree3 Vane is a proven and reliable solution for measuring wind direction in icing environments.

IceFree3 Heated Vane | 8m (26.4') cable (#2450)

DESCRIPTION

Sensor type	continuous rotation potentiometric heated wind direction vane
Applications	<ul style="list-style-type: none">• wind resource assessment• meteorological studies• environmental monitoring
Sensor range	360° mechanical, continuous rotation
Instrument compatibility	all NRG loggers

OUTPUT SIGNAL

Signal type	analog DC voltage from conductive plastic potentiometer, 10K ohms
Transfer function	output signal is a ratiometric voltage
Accuracy	potentiometer linearity within 1%
Dead band	8° Maximum, 4° Typical

POWER REQUIREMENTS

Supply voltage	regulated potentiometer excitation of 1 V to 15 V DC
Heater supply voltage	<ul style="list-style-type: none">• 24 V AC/DC• optional transformer available
Heater supply current	<ul style="list-style-type: none">• Inrush: 8 A maximum• Steady state: 1 A at 20 °C (68 °F), 4 A under maximum thermal load (head frozen in clear ice then powered on)

INSTALLATION

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Mounting	mounts to a 27 mm (1.05 inch) diameter (3/4 inch IPS) pipe with a 3/8 inch lock bolt; cabling exits into mounting pipe
Tools required	13 mm (0.5 inch) nut driver

ENVIRONMENTAL

Operating temperature range	-40 °C to 80 °C (-40 °F to 176 °F)
Operating humidity range	0 to 100% RH

PHYSICAL

Connections	<p>Signal Cable</p> <ul style="list-style-type: none"> • red: excitation • black: common • white: signal <p>Heater Cable</p> <ul style="list-style-type: none"> • black/white: heater power (AC or DC)
Cable length	8.1 m (26.6 ft) signal and heater cables
Weight	1.23 kg (2.7 pounds)
Dimensions	<ul style="list-style-type: none"> • overall assembly height: 239 mm (9.41 inches) • body diameter: 70 mm (2.75 inches) • swept diameter: 212 mm (8.38 inches) • center to tail radius: 106 mm (4.19 inches)

MATERIALS

Wing	precision balanced aluminum with black anodized finish and heat-resistant black paint
Body	cast aluminum with black anodized finish and heat-resistant black paint
Shaft	centerless ground, stainless steel

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Bearing	<ul style="list-style-type: none">• upper: sealed, stainless steel, ball bearing with application specific lubrication• lower: stainless steel bearing
Cable	<ul style="list-style-type: none">• Signal: 3 conductor 20 AWG, chrome PVC jacket with overall foil shield and drain• Heater: 2 conductor 20 AWG, Teflon jacket with overall foil shield and drain
Enclosure	<ul style="list-style-type: none">• sealed to IP55• heater is epoxy encapsulated to IP65
Signal generator	glass reinforced thermoplastic shell
Heater	fully encapsulated, self-regulating
Base	cast aluminum with black anodized finish and heat-resistant black paint