

# SPECIFICATIONS

## IceFree3 Wind Vane, 10k Pot, 8.1m

### FEATURES

- Simple, robust design
- 24 V AC or DC



Made of cast aluminum with black anodized finish, the IceFree3 Wind Vane efficiently transfers heat from constant temperature, self-regulating heaters. Rotation of the vane head moves a potentiometer, and produces a ratiometric DC voltage output. The signal range is 352 degrees (8 degrees open), and the "deadband" is centered around North. The sensor's pinch clamp base mounts easily to a 27mm (1.05") diameter mounting pipe. The IceFree3's heater is powered by 24V AC or DC, making it compatible with a wide range of remote site equipment.

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Description	Sensor type	continuous rotation potentiometric heated wind direction vane
	Applications	<ul style="list-style-type: none"> <li>• wind resource assessment</li> <li>• meteorological studies</li> <li>• environmental monitoring</li> </ul>
	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"> <li>• 24 V AC/DC</li> <li>• optional transformer available</li> </ul>
	Heater supply current	<ul style="list-style-type: none"> <li>• Inrush: 8 A maximum</li> <li>• Steady state: 1 A at 20 °C (68 °F), 4 A under maximum thermal load (head frozen in clear ice then powered on)</li> </ul>
Installation	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)

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	Operating humidity range	0 to 100% RH
Physical	Connections	Signal Cable <ul style="list-style-type: none"> <li>• red: excitation</li> <li>• black: common</li> <li>• white: signal</li> </ul> Heater Cable <ul style="list-style-type: none"> <li>• black/white: heater power (AC or DC)</li> </ul>
	Cable length	8 m (26 feet) signal and heater cables
	Weight	1.58 kg (3.49 pounds)
	Dimensions	<ul style="list-style-type: none"> <li>• overall assembly height: 239 mm (9.41 inches)</li> <li>• body diameter: 70 mm (2.75 inches)</li> <li>• swept diameter: 212 mm (8.38 inches)</li> <li>• center to tail radius: 106 mm (4.19 inches)</li> </ul>
	Materials	Wing
	Body	cast aluminum with black anodized finish and heat-resistant black paint
	Shaft	centerless ground, stainless steel
	Bearing	<ul style="list-style-type: none"> <li>• upper: sealed, stainless steel, ball bearing with application specific lubrication</li> <li>• lower: stainless steel bearing</li> </ul>
	Cable	<ul style="list-style-type: none"> <li>• Signal: 3 conductor 20 AWG, chrome PVC jacket with overall foil shield and drain</li> <li>• Heater: 2 conductor 20 AWG, Teflon jacket with overall foil shield and drain</li> </ul>
	Enclosure	<ul style="list-style-type: none"> <li>• sealed to IP55</li> <li>• heater is epoxy encapsulated to IP65</li> </ul>
	Signal generator	glass reinforced thermoplastic shell
	Heater	fully encapsulated, self-regulating
	Base	cast aluminum with black anodized finish and heat-resistant black paint



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