

## THE MARINER Marine Duty Wind Speed Sensor



### Description

The Mariner is a wind speed sensor designed specifically for long life in harsh ocean environments. Electrical and mechanical failures are common with other popular 3-cup anemometers. To address these problems, a number of important features should be noted. The electrical components are fully encapsulated with a urethane casting compound. This casting compound was designed to meet US Navy specifications for operating electrical and electronic components submersed in sea water.

The rotor shaft is manufactured from 316 stainless steel that has a long history of successful use in salt and other corrosive environments. Both rotor bearings are Rulon® – a reinforced Teflon® bearing with a low coefficient of friction.

### TECHNICAL SPECIFICATION:

Threshold: starting threshold - 0.75 m/s

(1.75 mph). Cup distance constant (63% recovery) - 3.0m (10 ft.)

Materials: Cups one-piece injection molded black polycarbonate (Lexan).

Body housing is ABS/PVC

Shaft is 316 type stainless steel.

Bearings: modified Teflon®, self-lubricating.

Permanent magnet: 4 pole, plated Neodymium

Weight: 0.6 lb

Dimensions: 3 cups conical cross-section - 51 mm ( 2 in.) dia.

Swept diameter of rotor - 190 mm (7.5 in.) Overall height - 51 mm (3.2 in.).

Moment of Inertia of rotor assembly:  $68 \times 10^{-6}$  S - ft<sup>2</sup>

Mounting: using a cotter pin on a 13 mm (0.5 in.) diameter mast with a #35 hole 11 mm (.35 in.) from the top.

Electrical: dual redundant coils, bobbin wound, 4100 turns of #41 wire.

Voltage is a sine wave with frequency changing linearity with wind speed - 60Hz = 102 mph.

Voltage is 25 VAC @ 60 Hz

Environmental: Operating temperature -55 to 60° C (-67 to 150° F)

Operating humidity range: 0 - 100% RH.