

F460 WIND SENSORS

FEATURES

- **High Survivability**
- **Excellent Dynamic Response**
- **Low Threshold**
- **Low Power CMOS Design**
- **Optional External Heaters**

Climatronics' F460 Wind Sensors are capable of operation in virtually all weather conditions. Designed to meet the requirements of Specification No. F460-SP001 for the National Weather Service, the durability of these sensors makes them ideal for multi-level tower installations. Although moderately priced, the F460 wind sensors offer the combination of low starting threshold, quick response, and high accuracy with excellent reliability over a wide range of operating conditions.

The F460 Wind Speed Sensor P/N 100075 monitors the wind speed with a three-cup anemometer. An LED photo chopper device provides a frequency output directly proportional to the wind speed. NIST traceability is optionally available for each anemometer cup assembly by comparison testing against a NIST transfer standard in our wind tunnel test facility.

The F460 Wind Direction Sensor, P/N 100076, consists of a counter-balanced, lightweight vane and a precision, low torque, highly reliable potentiometer that yields a voltage output proportional to the wind direction. Once properly oriented on the keyed cross-arm, the wind direction sensor may be removed or replaced without requiring reorientation.

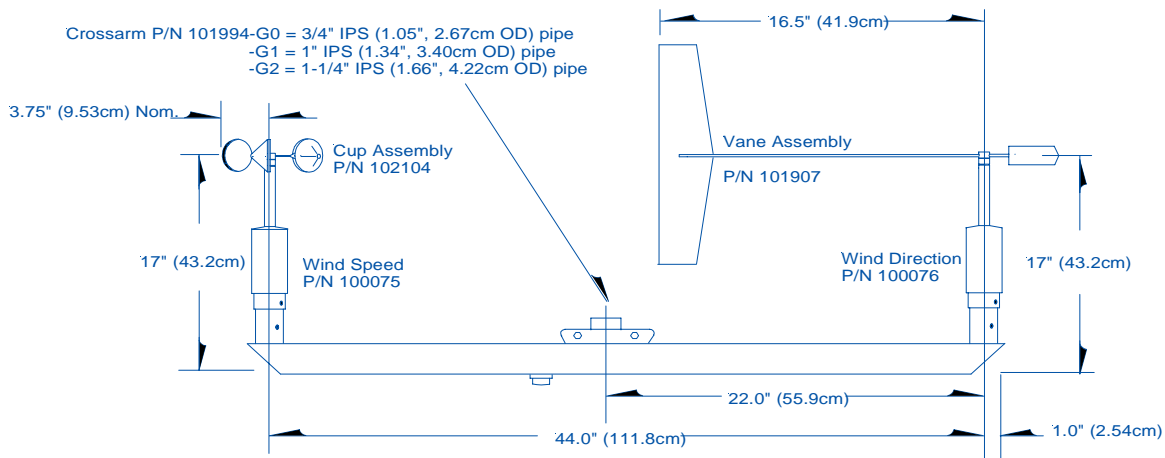
Installation is a simple matter of fastening each sensor to the crossarm, P/N 101994, which fits a $\frac{3}{4}$, 1, or 1- $\frac{1}{4}$ inch IPS pipe. Optional, thermostatically controlled external heaters are also available. Our single-board signal conditioner, the Universal Interface Module (UIM), can be used with the F460 sensors. Please consult the Universal Interface Module (UIM) data sheet for more details. The sensors can also be directly interfaced to Climatronics' IMP-800 series of data loggers or other commonly available data acquisition units.

The Component Anemometer, P/N 102236, can be used in conjunction with the F460 System to measure the vertical component of the wind. Consult the Vertical Component Anemometer data sheet for additional details.



SPECIFICATIONS

	F460 Wind Speed P/N 100075	F460 Wind Direction P/N 100076
PERFORMANCE		
Accuracy	0.15 mph (± 0.07 m/s) or $\pm 1.0\%$ of true air speed (whichever is greater)	± 2 degrees
Threshold	0.5 mph (0.22 m/s)	0.5 mph (0.22 m/s)
Distance Constant	102104 LEXAN <1.5 m (4.9 ft) 101287 HD Aluminum <4.0 m (13.1 ft) 100057 Stainless Steel <2.4 m (7.9 ft)	101907 Standard <1.0 m (3.0 ft) 101288 Heavy Duty <2.5m (8.2 ft)
Damping Ratio	N/A	>0.4 at 10° initial angle of attack
Operating Range	0 to 125 mph (0 to 60 m/s)	0 to 360 degrees - mechanical
ELECTRICAL SPECIFICATIONS		
Signal Output	Nominal 2.0 Vpp into 2.0 Kohm, frequency proportional to wind speed, amplitude dependant on supply voltage	Variable DC voltage, magnitude proportional to wind direction
Power Requirements	5 to 15 VDC @ 1 mA nominal	Max 1 mA through 10 Kohms
PHYSICAL SPECIFICATIONS		
Size	2.25 in (5.7 cm) max diameter 11.5 in (29.2 cm) high	2.25 in (5.7 cm) max diameter 11.5 in (29.2 cm) high
Weight	Less than 2 lbs (0.9 kg)	Less than 2 lbs (0.9 kg)
Turning Radius	3.75 in (9.5 cm)	16.5 in (41.9 cm)
Operating Temperature	-40° to 140° F (-40° to 60° C)	-40° to 140° F (-40° to 60° C)
CROSSARM SPECIFICATIONS		
Length	45 in (114.3 cm)	
Weight	7 lbs (3.2 kg)	
Mounting	1.66 in (4.2 cm) - O.D. 1-1/4 in IPS pipe (3/4 in & 1.0 in IPS also available)	
SENSOR HEATER SPECIFICATIONS		
Internal (P/N 101263)	12 VDC, 2 Watts per sensor	
External (P/N 101235)	115 VAC/60Hz 20 Watts per sensor, thermostatically controlled	



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