TACMET WEATHER SENSOR

FEATURES:

- **Portable / Hand Held**
- **Self-Orienting Sensor**
- **Rugged**
- **Low-Power**

The TACMET[1] weather sensor is designed for maximum portability and utility, making it uniquely applicable for rapid deployment and use by one person under adverse conditions. The TACMET sensor may be hand-held or mounted on a tripod.

The TACMET weather sensor was designed for the US Air Force as part of the AN/TMQ-34 program. The sensor measures wind speed and direction, air temperature, and relative humidity. An optional pressure measurement is available (see TACMET Portable Display data sheet). The TACMET includes a magnetic compass. This ensures a wind direction output, which is referenced to magnetic North, regardless of sensor orientation.

Two versions are available. The first includes a rotor to measure the wind speed and a short vane to sense wind direction, optimizing size and ruggedness. The second version offers a 3-cup anemometer and a longer vane, which allows this version to be used for air quality monitoring and emergency response modeling applications.

The sensor's analog output signals can be handled by any data acquisition device, which has an analog to digital conversion capability. Climatronics' TACMET Portable Displays and IMP-800 series data loggers are devices, which can be used for this purpose.

Wind speed is sensed by either a rotor or cup set connected to a photo chopper detector assembly, producing a frequency directly proportional to the wind speed. The wind vane and magnetic compass transducers produce signals representing the position of the wind vane and the pointer of the compass. The resultant is the direction of the wind relative to magnetic the direction of the wind relative to magnetic North. A wide range thermistor is used to measure the air temperature. The relative humidity is sensed with an inert hygroscopic element connected to a strain gage, supplied with a filter to minimize particulate contamination. Both sensors are located below the wind sensor shielded from solar radiation and precipitation. The signal conditioning boards in the TACMET convert the various transducer signals into linear analog voltage outputs.

The TACMET Weather Sensor is supported by a number of accessories, including: carrying cases; hand-held displays (including the optional pressure measurement); compact, lightweight tripods and depot repair fixtures.

[1] *Available as a commercial or military unit.*

SPECIFICATIONS

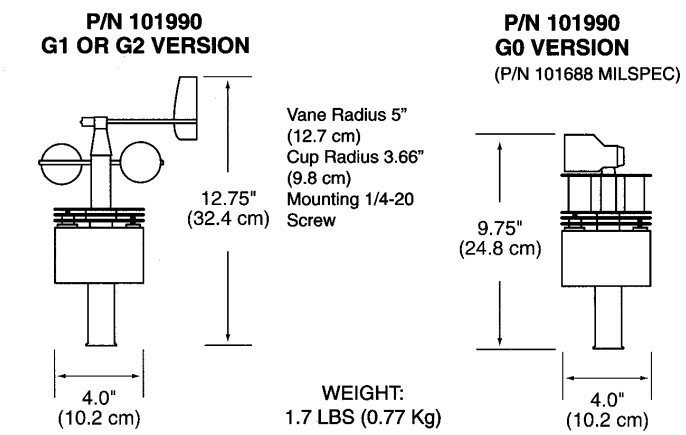
PERFORMANCE	Cup/Vane	Rotor/Vane
WIND SPEED		
Type	3-cup polycarbonate plastic	thermoplastic
Range	0 to 100 mph (0 to 45 m/s)	0 to 100 mph (0 to 45 m/s)
Accuracy*	±1.0 mph or 1.5% of true air speed, whichever is greater	
Starting Threshold	<1 mph (< 0.45 m/s)	<2 mph (<0.9 m/s)
Distance Constant	<8 ft	N/A
WIND DIRECTION		
Type	counter-balanced, aluminum magnesium	thermoplastic
Range	0º to 360º	0º to 360º
Accuracy*		
Vane	±3 degrees	±3 degrees
Magnetic Compass	±2 degrees	±2 degrees
Starting Threshold	<1 mph (<0.45 m/s)	<2 mph (<0.9 m/s)
Distant Constant	<8 feet	N/A
Damping Ratio	0.3	N/A
TEMPERATURE		
Range	0 to 100%	
Accuracy	±4%	
RELATIVE HUMIDITY		
Range	-58° to 131ºF (-50° to 55º C)	
Accuracy	±0.5ºF (±0.3ºC)	
ELECTRICAL		
Power Requirement	+12 ±2.5VDC @ 10mA	
Voltage Output	+0.1 to 2.5VDC for the specified ranges (0.1 to 5.0 volts P/N 101688)	

ENVIRONMENT

Accuracies are maintained over a wind speed, humidity, and altitude range of:

Wind Speed Range	1 to 100 mph
Temperature Range	-50 to 55ºC
Humidity Range	5% RH to 99% RH non-condensing
Altitude Range	-100 ft. to 10,000 ft. Mean Sea Level (MSL)

**This accuracy is maintained when the sensor is within ±10° of vertical.*
Specifications subject to change without notice



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Rev. 10 Jan 2002