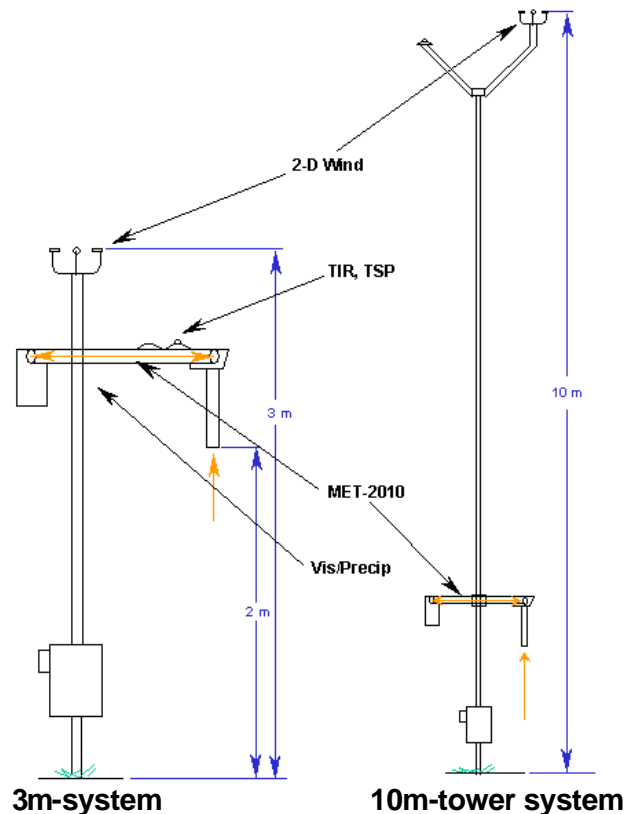


# TOTAL METEOROLOGICAL SYSTEM MODEL TMS-7000

BULLETIN TMS-7000



TMS-7000 system with TSP-400 option



$$p = \frac{\rho RT}{m}$$

$$S(\lambda) = S_0(\lambda) e^{-\tau \cdot \delta(\lambda)}$$

## General Description

The Total Meteorological System TMS-7000 is a state-of-the-art remote surface weather monitoring system based on a suite of field-proven environmental sensors. It is well suited for shipboard operation where high salt environments tend to degrade equipment. Sensors are aspirated, and dew point is determined via a chilled mirror hygrometer that is periodically cleaned to restore accuracy. Chilled mirror hygrometer technology provides superior long-term accuracy and stability vs. polymer-type humidity sensors that cannot be cleaned once they are contaminated.

Each TMS-7000 system includes a MET-2010 Thermohygrometer with integral pressure sensor, a TSP-400 visible/NIR pyranometer, and 2-D wind speed and direction (either sonic or wind vane/anemometer), providing pressure, temperature, dew point, winds, and solar. Other optional sensors include TSI-880 automated Total Sky Imager, Ultraviolet UVB-1 and UVA-1 pyranometers, visible/NIR TSP-400 Total Solar Pyranometer, long wave infrared TIR-550 radiometer, optical visibility and precipitation sensors, laser ceilometers and rain gauges. Available 2-D sonic anemometer option provides even more accurate and reliable wind speed and direction.

## Features

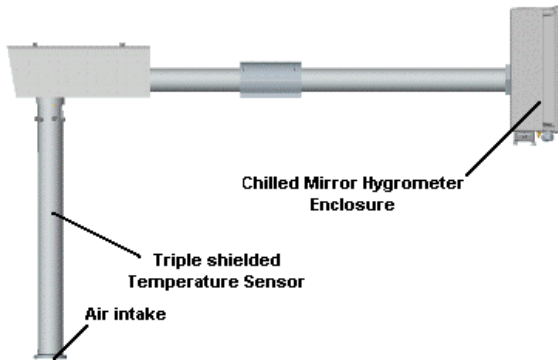
- Few moving parts means long field life
- Rugged metal construction
- CPU-managed for remote administration
- Digital RS-232 output, two analog outputs
- DC input protected from over-voltage
- Battery backup on AC power loss

## Applications

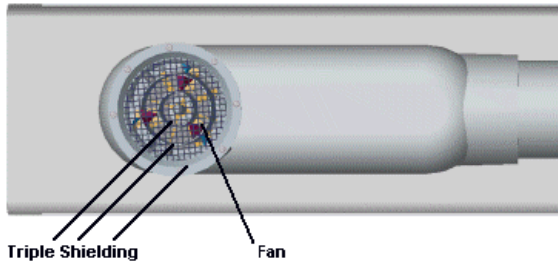
The TMS-7000 systems addresses a wide variety of meteorological applications where direct human observation is impractical:

- Roadway information systems
- Government meteorological agencies
- Aviation and military tactical weather
- Long term climate research networks
- Regulatory compliance at industrial sites

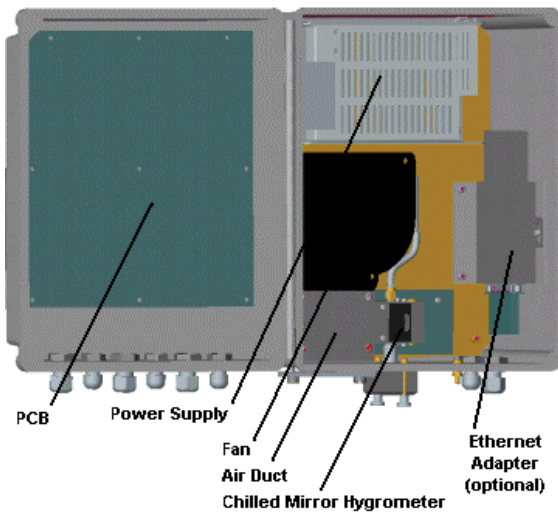




Side view of MET-2010 Thermohygrometer



Bottom view of MET-2010 temperature sensor air intake.



MET-2010 chilled mirror hygrometer enclosure and instrument electronics

### Mechanical Configuration

The TMS-7000 main assembly is clamped to a pole or tower at a height of 2.5 m above ground to position the thermohygrometer air sampling input at 2m. The wind sensor is mounted at 3m. At sites with 10m towers, the wind and solar sensors can be mounted at the WMO standard sampling heights. Other

options such as the Model TSI-880 are typically placed within a few meters of the tower to avoid shadowing.

### Networking and Communications

A TMS-7000 integrates well with today's open technology network infrastructures. The interface is RS-232 or dial-up modem or optionally, a RJ-45 via 10BaseT to a LAN.

Data can be telemetered to optional SQL-based data display software (YESDAQ) via TCP/IP protocols. For redundancy and backup, each can be replicated via the Internet and any user can view YESDAQ Data Visualization data immediately via a web browser.

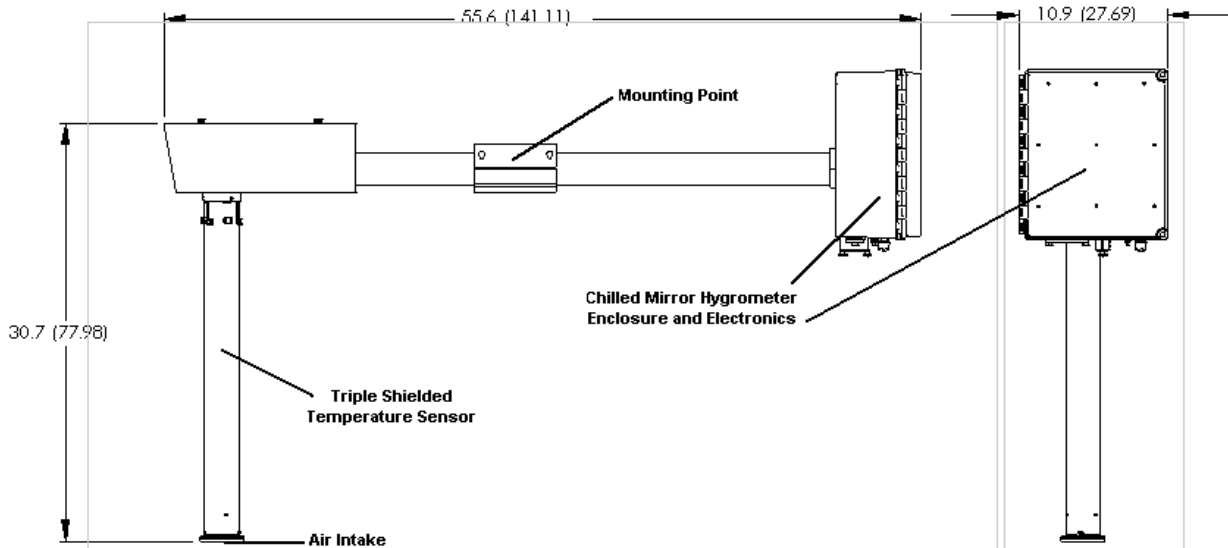
### Maintenance

To ensure accuracy, radiometer domes and the chilled mirror hygrometer should be periodically cleaned (monthly). We recommend replacing the aspiration blower every 2 years. For more information, please refer to datasheets on the individual sensors.

### Installation Details

Although installable as a stand-alone system, TMS-7000 is typically connected via Ethernet and TCP/IP providing real-time measurements to users via a web browser interface. In addition, legacy surface observation systems (ASOS/AWOS) can be fed advisory information via an RS-232 data stream.





**Mechanical Interface of MET-2010 DIMENSIONS IN INCHES (CM)**

Since the TMS-7000 can operate autonomously, sites without an ASOS/ AWOS can duplicate functionality at lower cost. TMS-7000 systems are self-contained, occupying approximately 1 square meter and are typically sited on a concrete pad but can also be mounted on mobile platforms. Electronics are protected by NEMA-4X enclosures, designed to provide continuous worry-free operation. In the event of a sensor failure, components can be rapidly swapped by semi-skilled personnel. Full coverage maintenance contracts are available.

**Specifications**

Please refer to individual sensor data sheets for specifications. System power requirements are dependent on number and type of options configured.

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