



WTM1

WEATHERPROOF

TEMPERATURE MONITOR



WTM1 Weatherproof Temperature Monitor Overview

The WTM1 Weatherproof Temperature Monitor, developed by Bradshaw Communication Systems, is a serial interfaced temperature monitoring unit providing both local ambient temperature monitoring as well as remote temperature monitoring capability via optional remote temperature sensors. The base unit is supplied with a built in local temperature probe which measures temperature at the unit. As few as one and a many as sixteen additional temperature sensor/s can optionally be added to provide additional remote monitoring.

The WTM1 is housed in an IP66/NEMA 4X enclosure, thus supporting the most rugged outdoor applications. The WTM1 is provided with one factory installed watertight cable entry gland to support the interface cable. Each optional remote temperature sensor is provided with it's own supporting cable gland. Up to four additional cable glands can be supported by the base unit by means of existing knockout holes. Since the optional temperature sensors are connected in a parallel 3-wire buss configuration, additional sensors in excess of four will require external user supplied terminations by means of two primary host cables routed from the WTM1. All optional temperature sensors are connected to two separate connectors (Bank 1 & Bank 2), each capable of supporting up to eight sensors each. Rubber 'build up' tape is provided with both the WTM1 and with each optional temperature sensor to support round and irregular cable outside diameters down to 0.10 inch.

WTM1 electrical terminations are provided via internal screw type pluggable terminal blocks, providing fast, easy, and accurate termination of interface wiring.

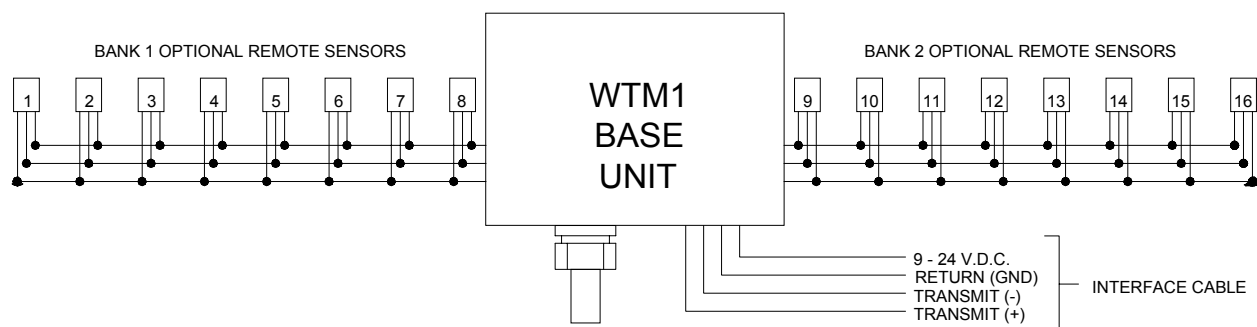
Each digital temperature sensor has a unique 64-bit serial number stored onboard and this serial number is permanently marked on the exterior of each temperature sensor. This allows each sensor to be identified individually while on the parallel 3-wire buss.

With a temperature measurement range of -55°C to $+125^{\circ}\text{C}$ and an accuracy of 0.5°C from -10°C to $+85^{\circ}\text{C}$ on each temperature sensor, the WTM1 provides great flexibility for use in many applications. Temperature sensor resolution is provided in 0.0625°C increments.

The WTM1 serial data is sent (unsolicited) as a "readable" hexadecimal data frame for each sensor. Each frame consists of a fixed start byte, 8 bytes containing the serial number for a given sensor, and finally 9 bytes containing the temperature data and CRC. Each temperature sensor is polled by the WTM1 and its data frame transmitted consecutively until all connected temperature sensors have been polled, then an approximate 5-second delay will occur until the start of the next polling/transmission cycle. This cycle then continues as long as power is supplied to the WTM1. The serial output of the WTM1 is compliant with ANSI Standards TIA/EIA-422-B and TIA/EIA-485-A.

Visual monitoring of functionality is provided on the main board by means of two LED indicators. One indicating the WTM1 is operating and the second indicating the WTM1 is polling temperature sensor/s.

The WTM1 has been designed to provide long life and ease of service while still allowing the system integrator great flexibility in installation and use.



BRADSHAW COMMUNICATION SYSTEMS

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WTM1 Weatherproof Temperature Monitor Specifications

- **Power Requirements**
 - Voltage: 9 to 24 V.D.C.(+/-10%)
 - Current: 500 Ma (MAX)
- **Serial Transmission Output**
 - ANSI Standards TIA/EIA-422-B Compliant
 - ANSI Standards TIA/EIA-485-A Compliant
 - Baud Rate: 19200
 - Data Bits: 8
 - Parity: None
 - Stop Bits: 1
- **Electrical Termination**
 - Screw Type Pluggable Terminal Blocks
 - 26-14 AWG Wire Size
 - Temperature Sensor Cable Length: 100FT (MAX)
- **Cable Entry**
 - Cable O.D. Range: 0.230-0.530 inches
 - "Build Up" Rubber Tape provided to support interface cables as small as 0.10" O.D.
- **Mounting**
 - Four 0.190" Diameter Mounting Holes
 - Hole to Hole Dimensions 4.53" Square
- **Temperature Sensor/s**
 - Housing: 3/8" Round Aluminum x 1.25" Long
 - 1 Built In & Up To 16 More Optional
 - Remote Sensor Cable Length: P/N Specific
 - Measurement Range: -55°C to +125°C
 - Accuracy -10°C to +85°C: $\pm 0.5^{\circ}\text{C}$
 - Accuracy -55°C to -10°C/+85°C to +125°C: $\pm 2^{\circ}\text{C}$
 - Resolution: 12 Bits (0.0625°C)
- **Base Unit Environmental**
 - -40° F to +122° F, 100% humidity, condensing (-40° C to +50° C, 100% humidity, condensing)
 - Enclosure Rating: IP66 (NEMA 4X)
- **Physical**
 - Enclosure Dimensions 5.12" wide x 5.12" high x 2.95" deep (130mm wide x 130mm high x 75mm deep)
 - Weight: 1 LB (0.45 Kg)
 - Enclosure Color/Type: Light Gray/Polystyrene
 - Cable Gland Protrusion: 1.25" (31.75mm) Nominal
- **Approvals**
 - The WTM1 has been designed to meet or exceed CE, UL, & CSA safety requirements.

WTM1 Weatherproof Temperature Monitor & Optional Remote Temperature Sensors

- **WTM1 - Weatherproof Temperature Monitor**
 - P/N 06-01000-1
Weatherproof Temperature Monitor
w/ Installation Manual
- **25 FT Remote Temperature Sensor**
 - P/N 06-02000-25
Temperature Sensor w/ 25FT Cable,
Cable Gland, & "Build Up" Rubber Tape
- **50 FT Remote Temperature Sensor**
 - P/N 06-02000-50
Temperature Sensor w/ 50FT Cable,
Cable Gland, & "Build Up" Rubber Tape
- **100 FT Remote Temperature Sensor**
 - P/N 06-02000-100
Temperature Sensor w/ 100FT Cable,
Cable Gland, & "Build Up" Rubber Tape

Conclusion

With over 40 years of combined experience in the Satellite Communications Industry, Bradshaw Communication Systems (BCS) has the solution to get your job done right and on time. By providing extremely high quality products and services at economical prices, BCS has become a respected name in the industry and the right choice when it comes to satellite earth station antenna products and services. BCS has provided custom solutions for numerous customers and stands ready to provide components, systems, and services to best fit your specific requirements. Please contact BCS today regarding your requirements.