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Model THT500

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Warranty

This product is fully warranted against defective materials and/or workmanship for a period of one year after purchase, provided it was not improperly used. For your protection, please use this product as soon as possible. If returned, it must be securely wrapped, sent prepaid and insured to:

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Please include a note with name, address, telephone number and description of the problem. Although we provide assistance on Pacer Instruments & Miltronics products both personally and through our literature, it is still the total responsibility of the customer to determine the suitability of the product for use in their application.

This manual is provided by Miltronics Mfg., Inc. without any kind of warranty. Precautions have been taken in accurately preparing this manual; however, we neither assume responsibility for any omissions or errors that may appear nor assume liability for any damages that result from the use of the products in accordance with the information contained in the manual.

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INTRODUCTION

The THT500 humidity-temperature transmitters supply accurate humidity and temperature (THT500) data from a room or process air source on a continuous basis to a computer, chart recorder, printer, meter or control circuit.
The AT400 and TAT420 air velocity transmitters supply accurate air velocity and (TAT420) temperature data from a building or process airflow on a continuous basis to a computer, chart recorder, printer, and meter or control circuit.

Every instrument has terminals for both DC and AC power, and 0-1V, 0-5V and 4-20mA outputs. The outputs are concurrent and can accept multiple wires (depending on the gauge used).

The humidity or humidity-temperature probe can be mounted on the instrument enclosure or at a remote location; that choice must be made at the time of purchase. The probe can be fitted with a optional sintered-metal filter for dusty or harsh environments.

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SPECIFICATIONS

Sensors:
    Humidity sensor: Capacitive (Thin Film)
    Temperature: PT100 RTD

Range:
    Relative Humidity: 5% to 95% RH
    Temperature: -4° to 176°F (-20° to 80°C)

Accuracy:
    Relative Humidity: ±2% RH
    Temperature: ±0.5°C

Resolution (optional display):
    Relative Humidity: 0.1%RH
    Temperature: 0.1°F or °C

Response Time:
    Relative Humidity: 90% of final value in 15 sec.
    Temperature: Approximately 60 seconds

Analog Outputs (separate and concurrent):
    Relative Humidity:
      0-1V, 0-5V and 4-20mA represent 0-100%RH
    Temperature:
      0-1V, 0-5V and 4-20mA represent -4 to 176°F (-20 to 80°C)

Operating Range: -4° to 176°F (-20° to 80°C)
Power Supply: 120 or 220VAC, 50-60Hz, also
                10-30 VDC

Input Current (with all options):
  10-30VDC: 38mA
  110VAC: 18mA
  220VAC: 9mA

Output Impedance (0-1V and 0-5V outputs):   1KΩ
Enclosure: ABS plastic, NEMA Class 4

Dimensions:
    Housing: 4.8" x 4.8" x 2.2"
    Probe: 4.5" x 1" diameter
Weight: 18 ounces
Options:
    Sintered-metal filter: Harsh environments

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[1]In order to insure the proper calibration, all custom-length cables for the THT500 must be ordered at the time the transmitter is purchased; or the unit must be returned for calibration.

[2]The maximum length for probe cables is 150 ft.; please consult manufacturer if longer cable is required.

[3]Cable grips will seal on round cables from 2.5 to 6.5mm diameter. For wire bundles, if you wish to insure water tightness, use RTV silicon or other sealant safe for electronics at end of cable grip.

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APPENDIX A – No Longer Available

APPENDIX B – Collecting data by means of resident "Hyper-Terminal" program on Win 95, 98, NT4, and Win 2000 PC's

A. Set up Communication Port.
   1) Find and open "HyperTerminal" under "Accessories" and "Communications"
   2) Type a name like "Humidity Transmitter" and select an icon, then click "OK"
   3) In the "Connect using:" box, select a COM port - probably "COM 1". Click "OK"
B. Set up "COM 1 Properties"
   1) Set "Bits per second:" to "1200"
   2) Set "Data bits:" to "8"
   3) Set "Parity:" to "None"
   4) Set "Stop bits:" to "1"
   5) Set "Flow control:" to "None"
   6) Click "OK", the select "Save"
C. Connect cable and transfer data
   1) Connect the RS-232 cable to "COM 1" port
   2) Power up transmitter
   3) Select "Call" from "Call" menu. Data will fill window
   4) To stop, select "Disconnect" from "Call" menu
   5) To save data, select "Save As…" and give file a name
D. To transfer to Excel
   1) Select data file from C5 above and open with "Notepad"
   2) Select data to be transferred and "Copy"
   3) Open a new blank Excel worksheet, select "Paste"
   4) Select entire Column "A". Under "Data" menu, select "Text to columns…" and click "Next"
   5) Follow directions to separate data, then click "Finish"

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INSTALLATION AND SETUP FOR THT500

Note: Make all connections with Power Off. Remove cover to attach Transmitter to mounting area and to attach power and signal cables. Attach in location free of physical dangers such as excessive heat or continuous condensing moisture.[3]

Note: Terminals 13-15 are not installed on any transmitter.

TERMINAL CONNECTIONS
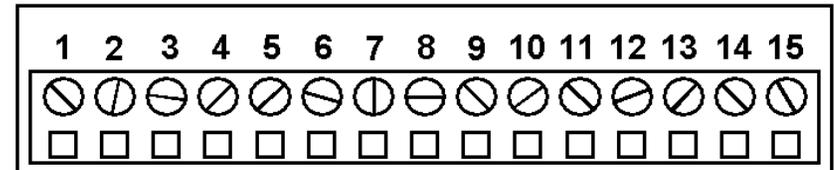
1. 4-20 mA temp ⎤   9. 220 VAC
2. 0-1 Volt temp ⎬ THT500   10. 110 VAC
3. 0-5 Volt temp ⎦   11. 220/110 VAC
4. 4-20 mA air velocity   12. No Connection
5. 0-5 Volt air velocity   13. No Connection
6. 0-1 Volt air velocity   14. No Connection
7. Ground   15. No Connection
8. V+ (10-30 VDC)

POWER HOOKUP*
   1a) If using 110VAC power, hook white (neutral) wire into slot 10. Then hook black (hot) wire into slot 11.
   1b) If using 220VAC power, hook either hot wire into slot 11. Then hook the other hot wire into slot 9.
   1c) If using 10-30VDC, first hook ground wire into slot 7. Then hook V+ wire into slot 8.

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%RH OUTPUT*

2a) If you want 0-1V FS, hook output ground reference to slot 7. Then hook %RH output wire to slot 6.

2b) If you want 0-5V FS, hook output ground reference to slot 7. Then hook %RH output wire to slot 5.

2c) If you want 4-20mA FS, hook output ground reference to slot 7. Then hook %RH wire to slot 4.

TEMPERATURE OUTPUT*

3a) If you want 0-1V FS, hook output ground reference to slot 7. Then hook temperature output wire to slot 3.

3b) If you want 0-5V FS, hook output ground reference to slot 7. Then hook temperature output wire to slot 2.

3c) If you want 4-20mA FS, hook output ground reference to slot 7. Then hook temperature output wire to slot 1.

MOUNTING THE PROBE

Mount at location where measurements are to be made. Do not change the length of the cable supplied at purchase, as doing so will change the calibration. Protect the probe with a sintered-metal filter (optional) if dust or spray is present.

METRIC OR ENGLISH UNITS

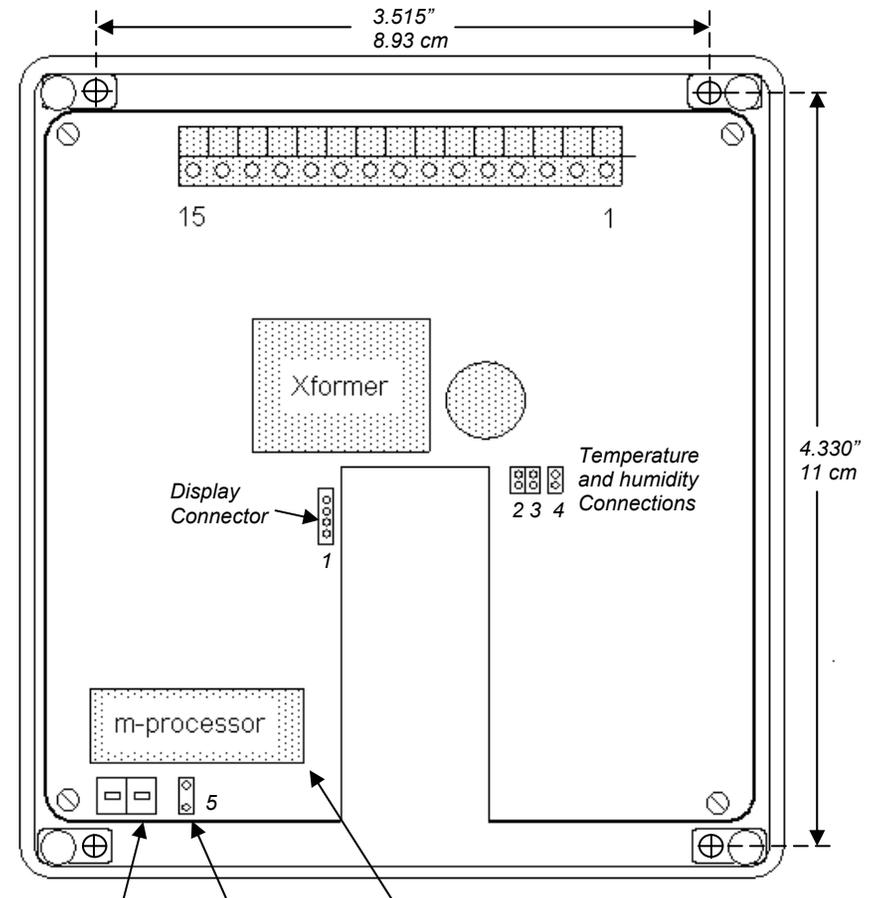Shown on the diagram but no longer available

REPLACING COVER

Use care not to damage the seal; if the cover has a display, use proper polarity when reinstalling connectors (see Diagram 1).

DISPLAY SWITCH

Shown on the diagram but no longer available

*NOTE: Be sure to tighten screws above slots when finished.

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Diagram 1: Location and Polarity of Connectors and Switches.

3.515" 8.93 cm

15 1

Xformer

Display Connector
1

Temperature and humidity Connections
2 3 4

m-processor

5

4.330" 11 cm

Metric or English Units Switch

Front cover Switch Connector

Note: Processor, switch and other items on left of board are present only when RS-232 and/or display options are present.

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