



TRANSMITTER, TEMPERATURE Wall, Duct, Immersion, Averaging, Outside, Strap-on
SERIES T221 Reliable, Economical, Non-Field Adjustable

The BEC T221 Temperature Transmitter is an economical, reliable analog sensor utilizing 100 ohm or 1000 ohm precision platinum RTD's with enclosures available for Wall/Space, Duct, Immersion, Outside Air, Averaging or Strap-on sensing applications. All mounting options allow for easy field installation.

The 4-20 mA, 2 wire loop output signal is unaffected by lead wire resistance and electrical noise which favors long runs from transmitter to controller on unshielded, twisted pair wire.

Non-regulated voltage supply ranges are stated in specifications.

- Energy Management Computer Systems -Analog Monitoring Systems
-Automation Computer Systems

FEATURES:

- *Economy - Reliable
*Field replaceable sensing element (DIN 43760/IEC 751)
*300 Series Stainless, .250" Dia. closed end probe
*Computer matched Transmitter/Sensor Element
*Averaging Transmitter elements utilize a proprietary alloy
*Conformance with Tri-Services Specifications CEGS 13947-50

DESCRIPTION:

All BEC Series T221 Transmitter mounting options (T221A thru F) are available with 100 ohm @ 0°C sensing elements with a temperature coefficient of .00385 ohm/ohm°C and an accuracy of +/- .1% @ 0°C.

Computer matched transmitter/sensor element sets are monitored with a computer automated test program which processes the test results and statistically compares these results to NBS traceable references at multiple points of the calibrated span. Standard deviation from the reference and resulting data is supplied with the transmitter. The highest level of quality and reliability is assured with this testing procedure.

Wall Mount Decorative high impact plastic enclosure integral with wiring box cover.

Duct Mount Enclosure is electrical "Handy Box" with cover. Probe is .205" dia. stainless steel with tip spun and welded. 4", 8" or 12" lengths.

Immersion Same as duct mount configuration. Thermowells available, 3/8" OD stainless steel, 3/4 NPT male thread. (Thermowell P/N TW-20-S).

Outside Gasketed enclosure with 3" long PVC, 7/8" dia. sun shield.

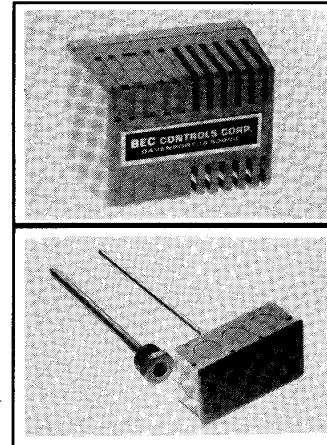
Averaging Same as Duct Mount but with .250" dia. flexible copper sheath 10 to 24 feet long.

Strap-on Typically for external pipe sensing. See dimensions below.

Self-Heating Error, caused by the signal conditioning circuitry, is eliminated by removing the sensor from the contact with the heat producing sources in wall mounted transmitters. The entire housing package is compact and self-contained suitable for wall or conduit box mounting.

SPECIFICATIONS:

Table with 4 columns: Parameter, Value 1, Value 2, Value 3. Rows include Sensor Element, Sensor Accuracy, Transmitter Accuracy, Component Accuracy, Output, Supply Voltage, Input Voltage Effect, Max Loop Resistance, Sensor Break Indicate, Sensor Short, Temperature Range, Zero/Span Adjustment, and Polarity Protected.



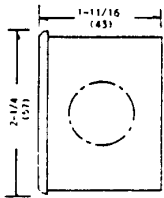
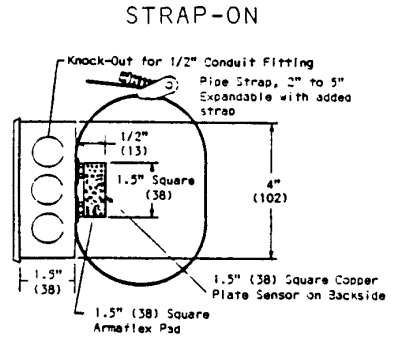
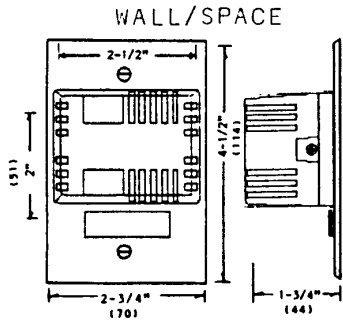


ENGINEERING PRODUCT SPECIFICATION RELEASE

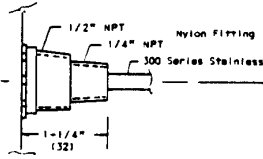
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ORDERING INFORMATION:

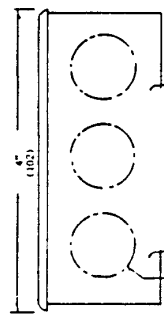
- MODEL T221 A-() - 1A - 1 8"
- MOUNTING**
 A. Wall/Space
 B. Duct
 C. Immersion
 D. Averaging
 E. Outside
 F. Strap-or.
- SENSOR**
 1A. 100 ohm platinum
 DIN 43760/IEC 751
 $\pm 1\%$ @ 0°C
 .00385 ohms/ohm/°C
 2A. 1000 ohm platinum
 (Same as above)
 1B. 100 ohm platinum
 (Same as above)
 Computer matched
 sensor/transmitter
 2B. 1000 ohm platinum
 (Same as above)
 Computer matched
 sensor/transmitter
- RANGE**
 1. +50 to +85°F (Room)
 2. -30 to +130°F (Outside)
 3. +40 to +140°F (Duct)
 4. +30 to +100°F (Chilled H₂O)
 5. +100 " +250°F (Hot water)
 6. Custom (Specify range)
- PROBE LENGTH**
 4", 8", 12" (Duct)
 4", 8" (Immersion)
 12', 24' (Averaging)
- MFG'RS CODE**
 Assigned By
 Factory



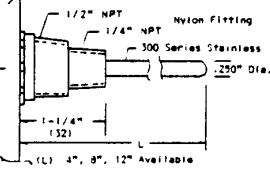
AVERAGING



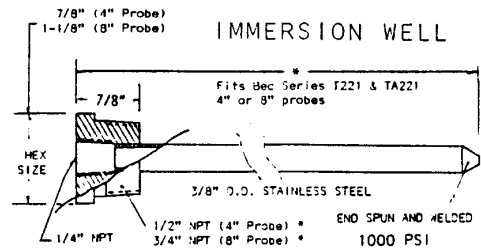
(L) Flexible Copper Sheath
 12' and 24' Standard
 .250" Dia.



DUCT/IMMERSION

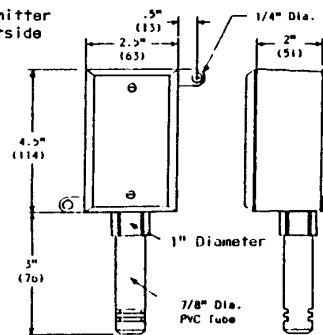
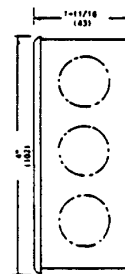


IMMERSION WELL



OUTSIDE

Optional inside remote transmitter enclosure recommended for outside temperatures below 0°C



COMPUTER MATCHED TRANSMITTER/SENSOR DATA INTERPRETATION

| BEC TEMP TRANSMITTER DATA | MEAN TEMP | MEAN SD | REF TEMP | REF SD |
|---------------------------|-----------|---------|----------|--------|
| MODEL #: T221A-2B-10/1 | 60.54 | 0.01 | 60.53 | 0.01 |
| SERIAL #: 23081-1C7 | 70.26 | 0.01 | 70.06 | 0.00 |
| DATE OF TEST: 07-14-88 | 80.79 | 0.00 | 80.58 | 0.01 |

Calibration temperature of transmitter
 Std. time span test variation at mean temp. of transmitter
 NBS traceable test equipment reading
 Std. time span test variation of NBS traceable test equipment



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