

YSI MODEL 43 TELE-THERMOMETER INSTRUCTIONS



GENERAL DESCRIPTION

The YSI Model 43 Tele-Thermometer is a precision temperature indicator produced in a number of ranges (See Range Chart), which comes to you tested and factory calibrated. With careful use and reasonable consideration of the meter movement and the temperature probes, years of trouble-free service may be expected.

The Model 43 is designed for direct reading with any of the interchangeable YSI Series 400 probes. YSI Series 500 probes can be used under special conditions (see below).

OPERATION

1. To ensure accuracy it is necessary to monitor meter and "red line" adjustments. Check these settings each time the instrument is used. With the instrument turned off, use a screwdriver to set the mechanical adjustment for the meter movement, located at the bottom center of the meter bezel, so that the pointer is aligned with the scale mark at the farthest right on the upper temperature scale. For maximum accuracy, all adjustments and readings should be made with the instrument in its normal operating position.

2. Turn switch to ON. Remove probe plug or interconnecting cable plug from the jack to the left of the meter. Turn the ADJ. TO RED LINE control so that the pointer is set at the red line. (If the pointer cannot be red-lined, replace the battery. See BATTERY REPLACEMENT below.) Replace probe plug or interconnecting cable plug. The instrument is now ready for use.

3. The output for the recorder is 0.000 volts at the highest temperature on the scale. At the lowest temperature on the scale it is 80 to 100 millivolts (50 to 70 millivolts in the TF range). The recorder must have a minimum input resistance of 50,000 ohms.

4. When temperature measurement applications require probes of fast response time and very small physical size, YSI Series 500 probes can be used with this instrument. These probes are not interchangeable and must be used with a conversion chart to correct the temperature indication which the instrument displays. A conversion chart is furnished with each Series 500 probe. The chart is unique to that probe and is identified by serial number. The conversion chart should be inspected to assure that the temperature of interest, when appropriately corrected, falls within the display range of the instrument.

5. Measurement accuracy using Series 500 probes is conditioned by errors associated with thermistor self-heating. Thermistors used in these probes have very low thermal dissipation, and therefore the measurement current itself can produce a small but significant temperature offset. Measurement currents differ with instrument range. The error due to self heating must be determined in the specific measurement circumstance.

WARNING: A patient who is not adequately grounded during electrosurgery at radio frequencies can be burned by current flow through a temperature probe. If you have any doubt about the adequacy of patient grounding, the probe should be removed from the patient before activating the electrosurgical unit.

Instrument reading errors induced by a high-intensity RF source are liable to appear only while the electrosurgical unit is operating.

PROBES

Should a probe fail completely, the meter pointer will move violently off-scale: to the right if the probe is shorted, to the left if it is open. Rarely, the base resistance of a probe may change sufficiently to cause the meter readings to be out of specification. If the accuracy of a probe is in question, it should be checked against other probes, or a standard of known accuracy. Probe failures are normally irreparable since thermistors are potted and sealed in their assemblies. Replacement probes may be purchased through your YSI dealer.

| RANGE | Temp. Range | | POT | | POT | | POT | | Resistor | | 1% K = 1000 | | NOTE 3 | NOTE 4 | RED LINE | | CHECK POINTS | | | | CALIB PTS | |
|-------|-------------|-----------|-----|-----|-----|-------|-------|-------|----------|-------|-------------|------|--------|--------|----------|------|--------------|------|--------|-------|-----------|-----|
| | °C | °F | R-1 | R-2 | R-3 | R-4 | R-5 | R-6 | R-7 | R-8 | R-9 | R-10 | CALIB. | TH RES | LOW | MED | HIGH | RES | RES | RES | RES | RES |
| TA | 20 to 42 | 68 to 108 | 100 | 100 | 1K | 806 | 1.05K | 806 | 806 | 2.37K | 0 | 1K | 74°F | 2424 | 68°F | 2814 | 88°F | 1731 | 108°F | 1098 | | |
| TC | 15 to 100 | 59 to 212 | 20 | 100 | 1K | 1.21K | 143 | 221 | 221 | 1.43K | 0 | 100 | 35°C | 1471 | 15°C | 3539 | 57°C | 625 | 2100°C | 153.2 | | |
| TD | 0 to 50 | 32 to 122 | 100 | 200 | 2K | 3.01K | 768 | 1.21K | 1.21K | 5.62K | 0 | 680 | 5°C | 5720 | 0°C | 7355 | 25°C | 2253 | 50°C | 811.7 | | |
| TF | 35 to 46 | 95 to 115 | 500 | 500 | 1K | 232 | 2.61K | 750 | 249 | 1.21K | 0 | 820 | 37°C | 1355 | 95°F | 1471 | 105°F | 1174 | 115°F | 942.5 | | |

RANGE CHART



