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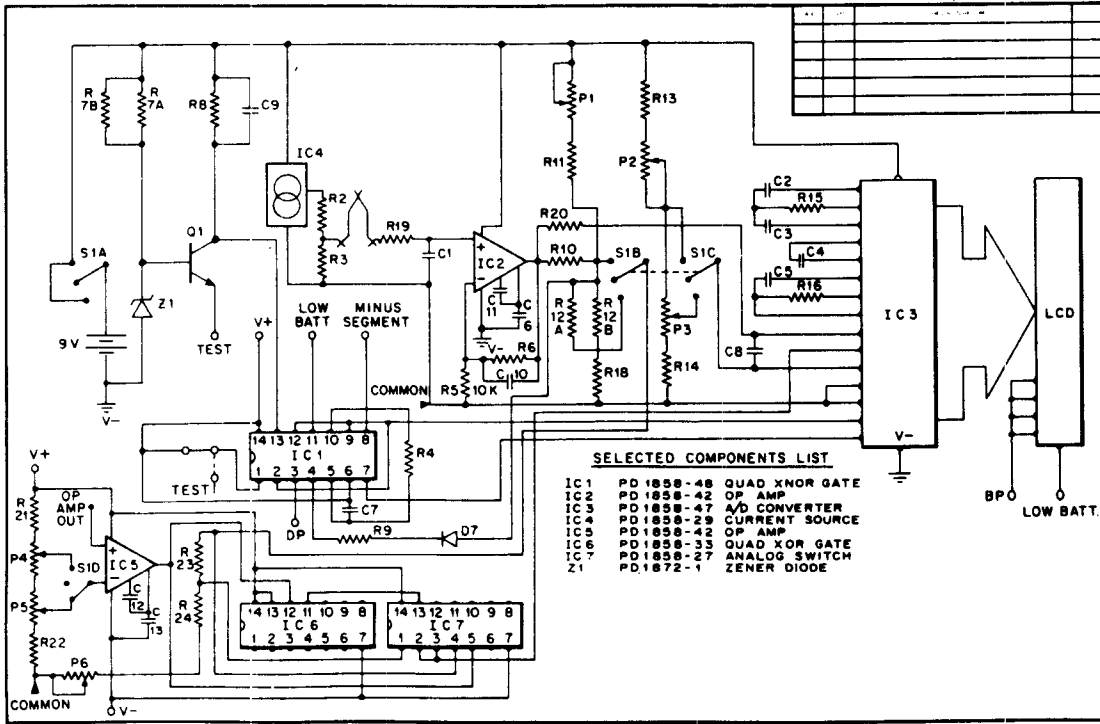
HH-99A SERIES
Hand Held
Digital Thermometers



Operator's Manual



MASTÉIL



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OPERATION

Install a 9 V battery (supplied) by removing the back of the instrument housing.

The HH-99A-J accepts a Type J (Iron-Constantan) thermocouple input; the HH-99A-K accepts a Type K (Chromel-Alumel) thermocouple input; the HH-99A-T1 and HH-99A-T2 accept a Type T (Copper-Constantan) thermocouple input; HH-99A-E accepts a Type E (Chromel-Constantan) thermocouple input; and HH-99A-N accepts a Type N (OmegaGalloy™-Nicrosil-Nisil) thermocouple. Use either the probes supplied, or any type J, K, T, E or N probe with a miniature male connector.

When LO BATT appears on the display, 10 hours minimum of usage time remains before the specified accuracy diminishes.

CALIBRATION FOR MODELS HH-99A-J, K, T1, E & N

With the probe in an ice bath setup, instrument circuit board removed and in °C mode, (use calibrator pots in the middle of the circuit board) adjust the center pot (P2) until the display reads -000 to 000. Move the probe to a high temperature bath, preferably at 248°F (120°C), and adjust the left pot (P1) until the display reads the correct temperature. Return probe to the ice bath, switch to °F mode, and adjust the right pot (P3) until the display reads 32°F. Replace cover.

If boiling water is used as a calibration point, beware of bath variations, and correct the readings for pressure variations. Barometric Pressure in inches of Mercury (referenced to sea level) can be obtained from any airport. The pressure is then corrected for the local altitude by subtracting approximately 1 inch of Mercury for every 1000 feet above sea level. For a reported pressure of 29.92 inches of Mercury and a location of 2000 feet of elevation, the corrected absolute pressure is 27.92 inches of Mercury. Refer to Table 1.

TABLE 1

STANDARD PRESSURE INCHES OF MERCURY	BOILING POINT OF WATER (°C)	BOILING POINT OF WATER (°F)
29.92	100.0	212.0
28.86	99.0	210.2
27.82	98.0	208.4
26.82	97.0	206.6
25.84	95.9	204.6
24.89	94.8	202.78

CALIBRATION FOR MODEL HH-99A-T2

With the probe in an ice bath setup, instrument circuit board removed and in °C mode, (use calibrator pots in the middle of the circuit board) adjust the center pot (P2) until the display reads -00.0 to 00.0. Move the probe to a high temperature bath, preferably at 180°C (356°F), and adjust the left pot (P1) until the display reads the correct temperature. Return probe to the ice bath, switch to °F mode, and adjust the right pot (P3) until the display reads 32°F. Replace cover.

If boiling water is used as a calibration point, beware of bath variations, and correct the readings for pressure variations. Barometric Pressure in inches of Mercury (referenced to sea level) can be obtained from any airport. The pressure is then corrected for the local altitude by subtracting approximately 1 inch of Mercury for every 1000 feet above sea level. For a reported pressure of 29.92 inches of Mercury and a location of 2000 feet of elevation, the corrected absolute pressure is 27.92 inches of Mercury. Refer to Table 1.

SPECIFICATIONS

MODEL	INPUT	RANGE
HH-99A-J	J	-112° to +1382°F -80° to +750°C
HH-99A-K	K	-112° to +1999°F -80° to +1100°C
HH-99A-T1	T	-112° to +752°F -80° to +440°C
HH-99A-T2	T	-40° to +199.9°F -40° to +199.9°C
HH-99A-E	E	-112° to +1022°F -80° to +550°C
HH-99A-N	N	0° to +1999°F 0° to +1300°C

**ACCURACY FOR
MODELS HH-99A-J, K, T1, E
& N:**

±1% of reading, ±1.8°F (1.0°C) temperature range, with ambient temperature between 68° to 86°F (20° to 30°C). With ambient between 32° to 68°F (0° to 20°C) or 86° to 122°F (30° to 50°C) add 0.03% of reading ±0.056°F (±0.1°F/°C).

**ACCURACY FOR
MODEL HH-99A-T2:**

±0.4% of readings, ±0.6°C (or °F equiv.) when instrument is 20° to 30°C; for colder or warmer ambient temp. to 0° and to 50°C (32° and to 122°F), add 0.03% of reading ±0.056°F/°F (±0.1°F/°C) departure from the 20° to 30°C normal ambient.

**AMBIENT TEMPERATURE
LIMITS:**

Operating: 32° to 122°F (0° to 50°C)
Storage: -13° to 158°F (-25° to 70°C)

TRACEABILITY:

We certify that this instrument has been calibrated to standards traceable to the U.S. National Bureau of Standards.