

sanwa

DIGITAL THERMOMETER

STH-500C

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DIGITAL THERMOMETER

STH-500C

The digital thermometer STH-500C has a wide range of measurement of temperature from -50 to 450°C at a high accuracy, using as its thermometric sensor, a platinum foil thermoresistor.

Both sheath and surface type sensor probes are provided enabling measurement in a wide application.

§ FEATURES

- * By means of the platinum foil thermoresistor and the resolution changeover method, high accuracy is secured for a wide range of -50.0 to 450°C .
- * As standard thermometric sensor probes, sheath type and surface type are prepared enabling wide measurement to surface, inner, and liquid subject.
- * LCD back lighting function is provided.
- * Data hold function is provided.

§ SPECIFICATIONS

Thermometric sensor: Platinum foil thermometric resistor.

Range of measurement: -50.0 to 199.9°C and -50 to 450°C (in 2 ranges).

Resolution factor: $0.1^{\circ}\text{C} / 1^{\circ}\text{C}$

Accuracy: $\pm(0.5\% \text{ rdg} + 0.5^{\circ}\text{C}) / \pm(0.5\% \text{ rdg} + 2^{\circ}\text{C})$ - Instrument body
 $\pm 0.5^{\circ}\text{C}$ - Thermometric sensor

Sampling rate: About 2.5 times/sec.

Indicator: Max. 1999 by LCD
"OVER" is indicated only by digit "1"
Unit indication in $^{\circ}\text{C}$. Data hold indication by "M"
Cell alarm indication by "B"

LCD back lighting function provided.

Data hold function provided.

Ranges of working temperature/humidity: 0 to 50°C , below 80%RH
in non-dew condensation.

Storage temperature/humidity: -10 to 50°C , below 80%RH

Cells: SUM-3 x 4, 250 hours of continuous use at normal temperature and non back lighting.

Size and weight: 173 x 42 x 31mm, 200gr. approx.

Accessory: Instruction manual 1 copy

Optional accessories: Sheath type sensor probe (T-450)
 Surface type sensor probe (T-200)
 Carrying case (C-STH)

§ SENSOR SPECIFICATIONS

ITEM	SENSOR PROBE	Sheath type T-450	Surface type T-200
Thermometric sensor	Platinum foil thermometric resistor (100Ω at 0°C)		
Range of measure't		-50~450°C	0~200°C *
Response speed (90%)		Abt. 7 sec.	Abt. 10 sec.
Heat resistant at the holder	150°C		
Connector lead	Dual lead wire, about 1.5m		
Sensor size		3.2φ x 135mm	2.5 x 10mm
Outer size		15φ x 235mm	17 x 15 x 115mm
Weight		Abt. 80 gr.	Abt. 70 gr.

* In non-dew condensation.

§ NAMES OF PARTS

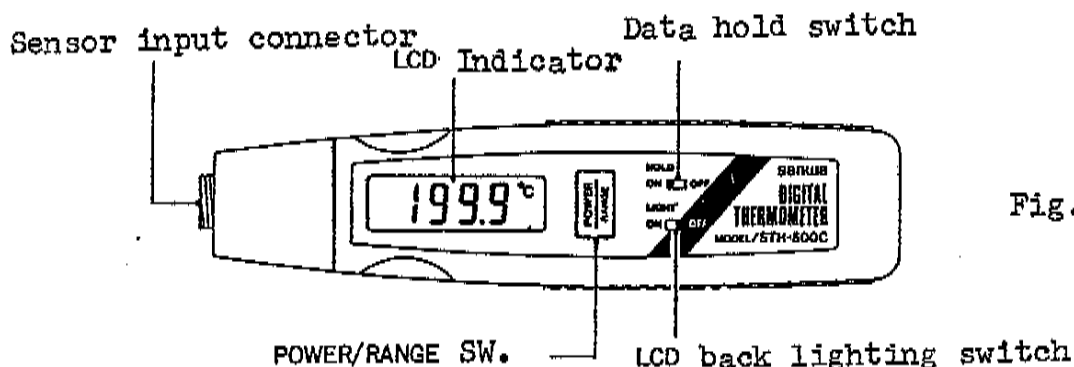
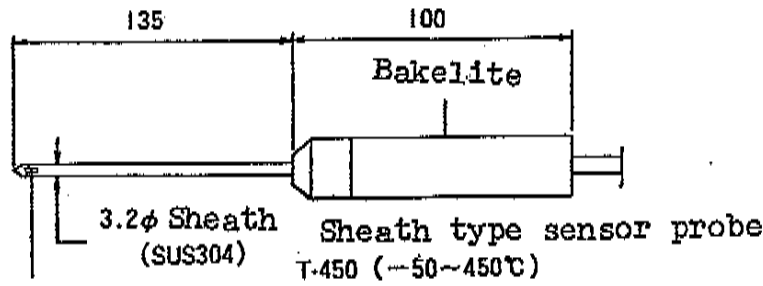
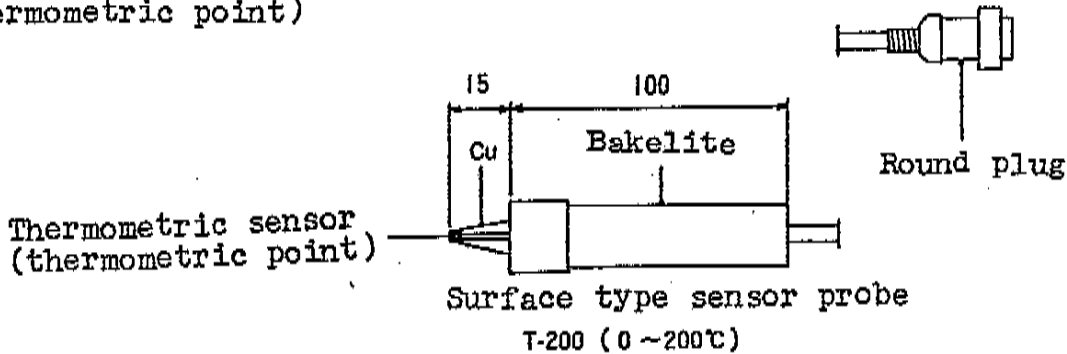


Fig. 1-1

Fig. 1-2



Built-in thermometric sensor (thermometric point)



§ CAUTIONS IN OPERATION

1. Please confirm of the contained cells, referring to page 6.
2. Pay caution to the tip of the thermometric sheath as it is made sharp in order to stick in the foods for the internal temperature measurement.
3. The platinum foil thermoresistor of the sensor to the sheath type sensor probe is set at a rated resistance value after the heat-treat at about 420°C. Therefore, if applied at more than 450°C, the rated resistance value of the sensor is deviated off the specifications.

Further if applied at more than 550°C, the platinum foil thermoresistor is peeled off to deteriorate the sensor. Please do not use it at more than 450°C.

4. The thermometric sensor of the surface type sensor probe is set at a rated resistance value after the heat-treat at about 200°C, so please do not use it at more than 200°C.

Pay caution in using the thermometric part, as it is not made stout and solid due to its structure.

5. The response speed of the rated sensor differs according to the room temperature upto the boiled water (about 100°C) and depending on the condition and the subject to be measured.

With this instrument, the response speed of the sheath type sensor probe is for measurement of the room temperature upto the boiled water (about 100°C), and the surface type sensor probe is for the room temperature upto a surface measurement of a heated metal (about 150°C).

6. Without the sensor probe connected, if power is thrown on, the instrument indicates 1 . °C (OVER indication) on the 200°C range, and around 845°C on the 450°C range, but this does not mean the instrument is out of order.
7. Do not give a strong shock to the indicator and the thermometric part. Also, be careful not to be splashed with water except the sheath, as the instrument body is not waterproofed.
8. Do not leave it for a long time in a place where it is liable to receive shock or vibration, or in the direct sunlight, high (or low) temperature or high humidity. When not in use for some long time, cells are better to be taken out.

§ HOW TO USE

Before operation, please read carefully § CAUTIONS IN OPERATION.

1. Operation

To the sensor input connector of the indicator, connected is the sheath type sensor probe or the round plug of the surface type sensor probe.

With the data hold switch set at OFF, once push POWER/RANGE switch and the instrument is POWERED ON the 200°C range. Further push makes it the 450°C range and another push POWER OFF. Refer to the following diagram, Figs. 2 and 3.

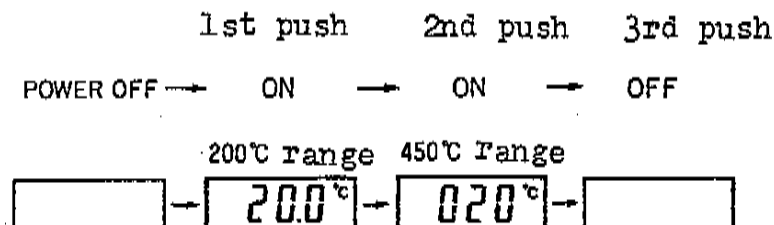


Fig. 2 Fig. 3

2. Method of measurement

The sheath type thermometric sensor is contained near the tip of the sheath, and the surface type sensor is welded at the tip of the metal.

The indicator shows the temperature of the sensor (thermometric point), and it is necessary to take measurement according to the measured subject. First set POWER ON at an optional range.

2-1 Internal temperature measurement

Connect the sheath type sensor probe to the indicator, and stick the tip of the sheath in the subject (an apple) and the temperature of the thermometric point is indicated. Refer to Fig. 4.

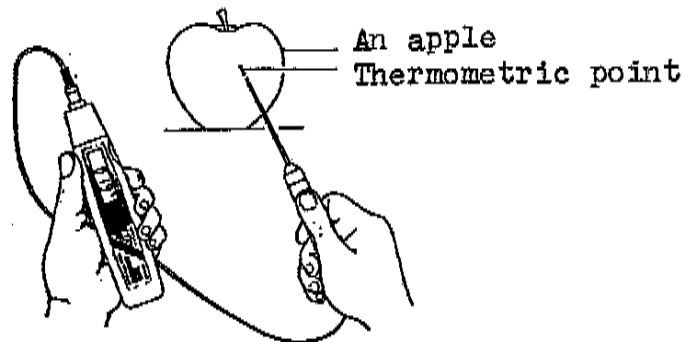


Fig. 4

2-2 Liquid temperature measurement

Connect the sheath type sensor probe to the indicator, and put the tip of the sheath in the subject (water), and the temperature of the thermometric point is indicated. Refer to Fig. 5.

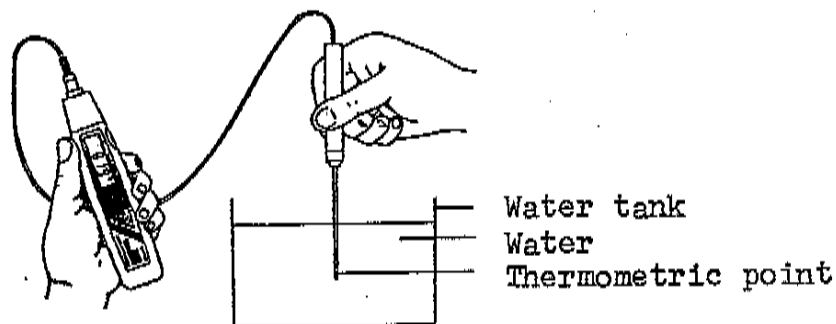
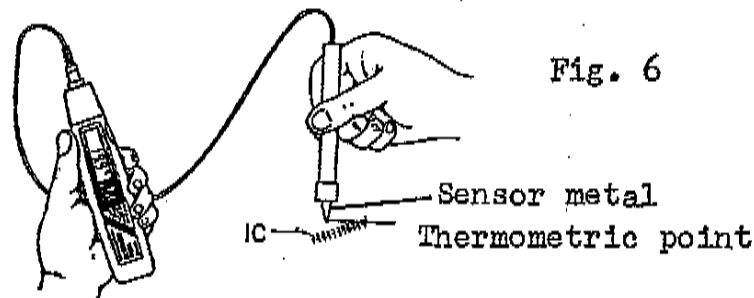


Fig. 5

2-3 Surface temperature measurement

Connect the surface type sensor probe to the indicator, touch the tip of the sensor metal to the subject (IC) and the thermometric point is indicated. Refer to Fig. 6.

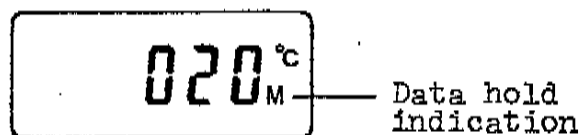


After the measurement is over, be sure to set the switch at POWER OFF.

§ DATA HOLD FUNCTION

With the switch at POWER ON, set the data hold switch at ON, and the indicated value can be held. In this case, "M" appears in the indicator as per Fig. 7, to show the value is held. Set the data hold switch at OFF, and the data hold function is released.

Fig. 7



§ LCD BACK LIGHTING FUNCTION

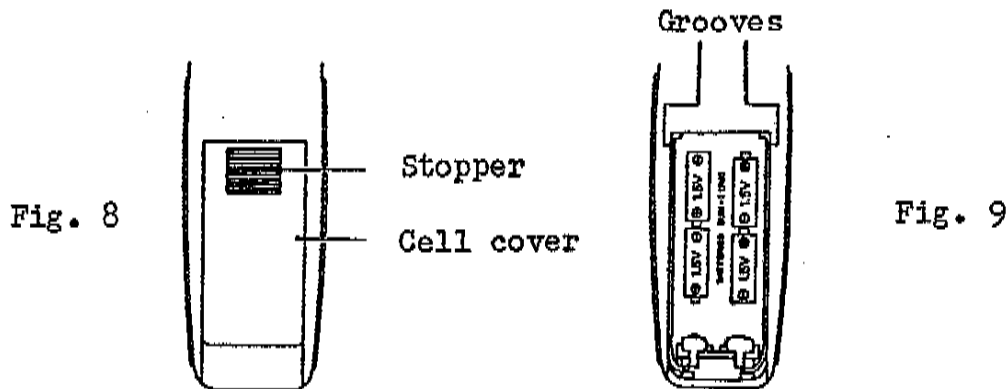
With the switch at POWER ON, set the back lighting switch at ON, and the LCD is illuminated from the back to enable reading the indicated value even at a dark place.

§ CELLS

1. Cell fitting

- 1-1 As per Fig. 8, the stopper of the cell cover is strongly pushed, and pull it out towards you.
- 1-2 Cells (SUM-3 x 4) are placed at the right polarities as per Fig. 9. Inner cells are placed first for smooth fitting.

1-3 To restore the cell cover, it is slid back along with the groove as per Fig. 9.



2. Replacement of cells

With the switch at POWER ON, if the cell alarm "B" appears in the indicator, the internal cells are exhausted needing replacement with new ones, as the instrument cannot function properly to satisfy the rated specifications. Refer to Fig. 10.

When the POWER switch is pushed, and nothing appears in the indicator, the cells also need replacement. Replacement of cells is conducted likewise in 1. Cell fitting above.

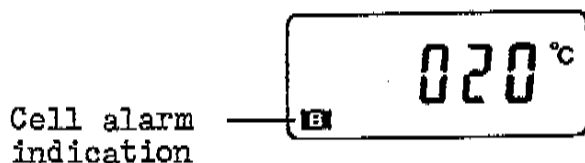


Fig. 10

Specifications are subject to change without notice.