sanwa

DIGITAL THERMOMETER

STH-1200

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DIGITAL THERMOMETER

STH-1200

The digital thermometer STH-1200 affords a wide measurement range of -50 to 1200°C, using a K-type termocouple as a thermometric sensor.

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

§ FEATURES

* The indicator body is designed to touch soft in hand holding and smooth operation.
* The K-type thermocouple applied as a thermometric sensor makes the measurement range as wide as -50 to 1200°C.
* Standard thermometric sensor probes of Sheath type K-600 (-50 to 600°C), Sheath type K-1000 (-50 to 1200°C) and Surface type K-500 (0 to 500°C) are prepared enabling wide measurement at surface, inner, or liquid subject.
* LCD back lighting function is provided.
* Data hold function is provided.

§ SPECIFICATIONS

Thermometric sensor: Thermocouple K (CA)

Range of measurement: -50 to 1200°C

Resolution factor: 1°C

Accuracy (indicator body): ±(0.8%rdg + 2°C) at -20 to 1200°C
(Environmental temp. 25±5°C): ±4°C at -50 to -20°C

Cold contact point compensation function: Automatic compensation (by cold contact point compensation IC)

Indication: Max. 1999 by LCD. Unit in °C. Data hold by "M". Cell exhaution alarm by "B".

LCD back lighting function provided.

Data hold function provided.

Range of working temp./humidity: 0 to 50°C, below 80% RH (in non-dew condensation)

Storage temp./Humidity: -10 to 50°C, below 80% RH

Cells: SUM-3 x 4, 50 hours of continuous use at normal temp., and non-back lighting.

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

Accessory: Instruction manual 1 copy

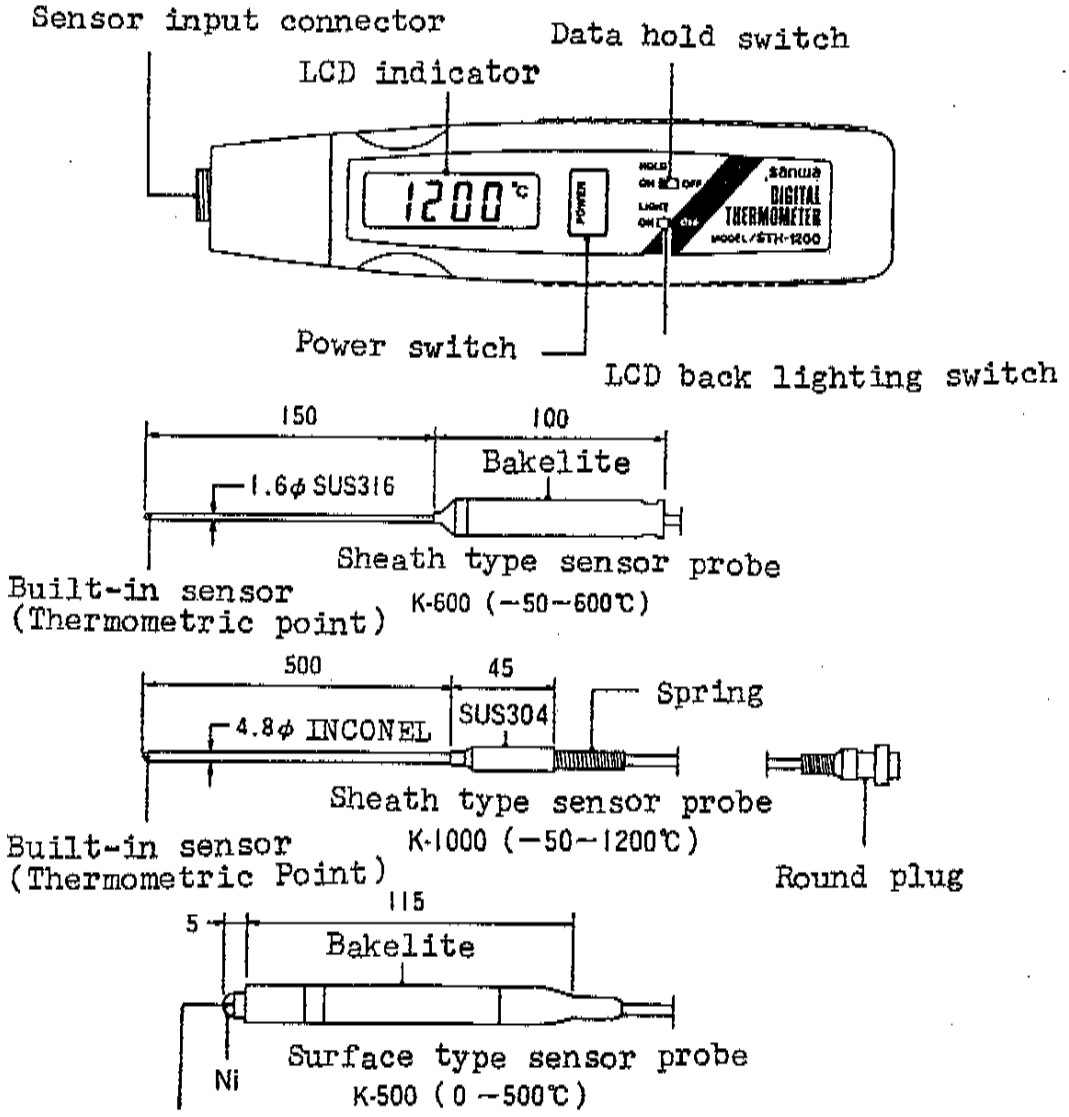
Optional acccories: Sheath type sensor probe (K-600)
Sheath type sensor probe (K-1000)
Surface type sensor probe (K-500)
Carrying case (C-STH)

§ SENSOR SPECIFICATIONS

ITEM \ SENSOR	Sheath type sensor probe K-600	Surface type sensor probe K-500	Sheath type sensor probe K-1000
Thermometric sensor	Thermocouple K (CA) Chromel Alumel		
Class	Equivallent to JIS C1602 0.75 class		
Contact kinds	Non-earthing	Earthing	Non-earthing
Range of measure't	-50 to 600°C	0-500°C *	-50 to 1200°C
Response speed (90%)	Abt. 1 sec.	Abt. 2 sec.	Abt 7 sec.
Heat resistant at the holder	150°C		
Compensation lead wire	Common use (-20 to 90°C) abt. 2 meters		
Size of sensor	1.6ø x 150mm	3.5 x 8mm	4.8ø x 500mm
Outer size	14ø x 250mm	14ø x 150mm	8ø x 570mm
Weight	100g	90g	130g

* In non-dew condensation.

§ NAMES OF PARTS



§ CAUTIONS IN OPERATION

1. Confirm of the contained cells referring to page 7.

2. The maximum operating temperature of the optional Sheath type sensor probe K-600 is stipulated at 600°C, however, it is desirable to use it at below 500°C for a long time measurement.

   Similarly, at below 800°C for K-1000, and at below 150°C for K-500.

   If a long time measurement is effected at higher temperatures than the above, it causes deterioration of the protector tube, etc. to make short the life of the sensor.

3. The operating temperature range of the compensation lead wire of the sensor probe is -20 to 90°C approx.

4. As the cold contact point compensation IC is connected to the sensor input connector inside, if you change the enviromental temperature by holding that part with hand, etc., the change causes a measuring error.

5. The response speed of the rated sensor differs depending on the conditions and subjects of measurement. With this instrument, the response speed of the sheath type sensor probe is for measurement from the room temperature upto the boiled water (about 100°C), and the surface type sensor probe is from the room temperature upto a surface measurement of a heated metal (about 150°C).

6. Without a sensor probe connected, if the power is thrown on, the instrument indicates around -1, 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 note that the instrument body is not water proofed.

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 (low temperature or high humidity.

   When not in use for some long time, cells are better to be taken off.

§ HOW TO USE

Before operation, read carefully § CAUTIONS IN OPERATION.

1. Operation

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

With the data hold switch at OFF, once push POWER switch and the indicator is POWER ON as per Fig. 2. Further push makes it POWER OFF.

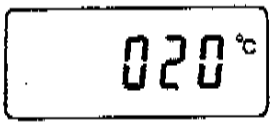


Fig. 2

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.

2-1 Internal temperature measurement

Connect to the indicator body, the optional sheath type sensor probe K-600, and stick the tip of the sheath into the subject (an apple) and the temperature of the thermometric point is indicated. Refer to Fig. 3.

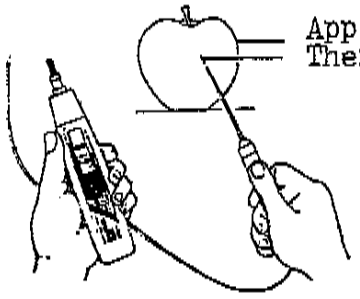


Fig. 3

2-2 Liquid temperature measurement

Connect to the indicator body, the optional sheath type sensor probe K-600, and put the tip of the sheath in the subject (water), and the temperature of the thermometric point is indicated. Refer to Fig. 4.

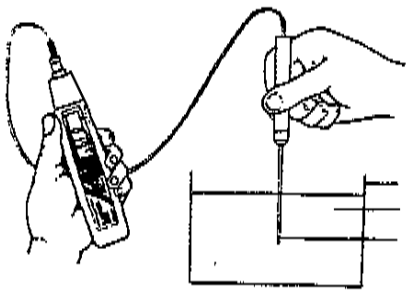
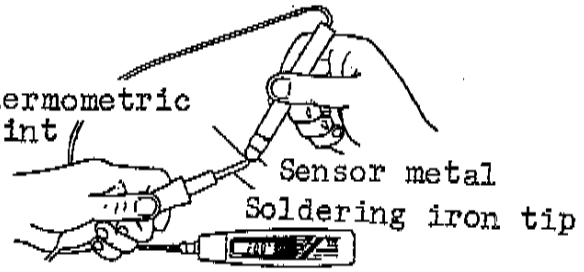


Fig. 4

2-3 Surface temperature measurement

Connect to the indicator body, the optional surface type sensor probe K-500. As per Fig. 5, the tip of the sensor metal is pushed to touch the subject (soldering iron tip) and the temperature of the thermometric point is indicated.

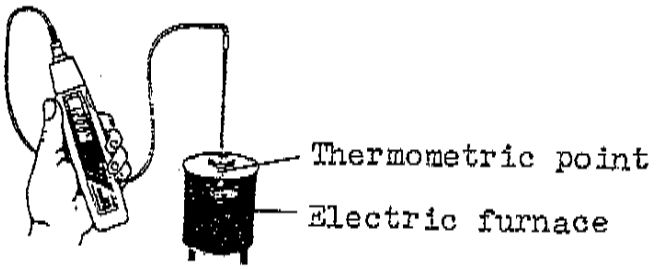
Fig. 5



2-4 Very high temperature measurement

Connect to the indicator body, the optional sheath type sensor probe K-1000. As per Fig. 6, the tip of the sheath is put in the subject (an electric furnace) and the temperature of the thermometric point is indicated.

Fig. 6



After the measurement is over, be sure to set the switch 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

Data hold indication

§ LCD BACK LIGHTING FUNCTION

With the switch as 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

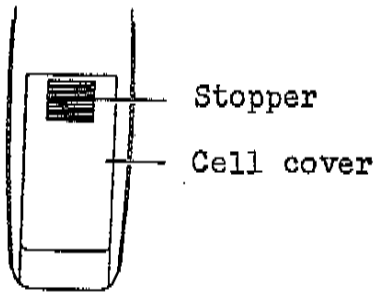
1. Cell fitting

1-1 As per Fig. 8, the stopper of the cell cover is strongly pushed, and pull it out towards you.

1-2 Cells (USM-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 slided back along with the groove as per Fig. 9.

Fig. 8



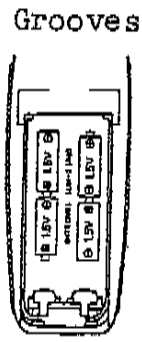


Fig. 9

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 as mentioned in 1. Cell fitting above.

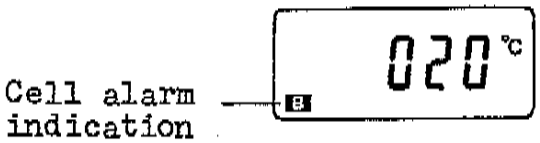


Fig. 10

Specifications are subject to change without notice.