



SHENYANGTIANXING

LT-02

SURFACE THERMOMETER

Shenyangtianxing

1. Application

The LT-02 surface thermometer consists of the digital gauge and the probe. It is used to measure the surface temperature of conductive metals. The type application is to measure the temperature of heated aluminum rods, sheets, pipes at the extruding machine.

2. Technical Parameters

Type of probe: Type K thermocouple

Range: 0~800°C

Accuracy: $\pm 1\% \pm 1^\circ\text{C}$

Resolution: 1°C

Temperature: 0~50°C

Power: Type 6F22 9V dry battery

Dimensions of Gauge: 70mmX110mmX20mm

Length of Probe: 250mm

Diameter of Probe: $\Phi 32\text{mm}$

Diameter of thermocouple: $\Phi 3.2\text{mm}$

Weight: 0.6kg

3. Operation Tips

- 3.1. Insert the probe plug into the hole under the digital gauge.
- 3.2. Swith to "ON" position.
- 3.3. Hold the handle and give a preload to make double-needle contact the surface of work piece at the same time. Digital Gauge shows stable surface temperature value immediatly if double-needle contacts with work piece very well.
- 3.4. Turn off power after testing.

4. Description of Probe

Normally the thermocouple is put two kinds of thermocouple materials weld together, weld point is temperature sensing point. But double-needle thermocouple is separated. Point of each side realizes electric connection by conduction of work piece, which is equivalent to weld double needles together. Thus, this kind of probe is suitable for testing the surface temperature of well conductive copper, aluminum, steel, and measured surface must be no rust, coating.

Double-needle Probe has features as follows:

4.1 Fast Speed.

Because the double-needle directly touches the metal surface, the working end of thermocouple can reach thermal balance immediately. As long as

touching well, it will get stable thermometry value between 1–2 seconds.

4.2 High accuracy.

Because of large temperature gradient of hot substances surface, while there are 0.2mm distances between work piece surface and the temperature sensing point of the old version leaf spring surface thermometer, so the conductive temperature will be lower than the real temperature on work piece surface. While the temperature sensing point is on the surface of double–needle probe, its distance is 0mm, therefore it is more accurate.

4.3 Long life.

There is no expendable parts of this kind of probe, thus it effectively solves the snap problem of leaf spring of old version probe, so its working life extends greatly. When the probe was used for long time and the double–needle has been very blunt, it just need to sharpen the double–needle by yourself and you can use it continually.

5. Indicator Description

The indicator displays the surface temperature of measured piece only when normal measurement. When no measurement, probe line is broken and double–needle contacts badly, it will displays “1”.

6. Fault Treatment.

6.1 Unstable display value

If displayed value always flutters and cannot be fixed in a value, maybe the measured piece is rusted, and the double–needle cannot be conductive very well. So we shall do rust cleaning and then test again.

6.2 No response of displayed value.

When testing, If it always displays “1”, no other display change, May be the probe line is broken or the measured piece is not conductive.

