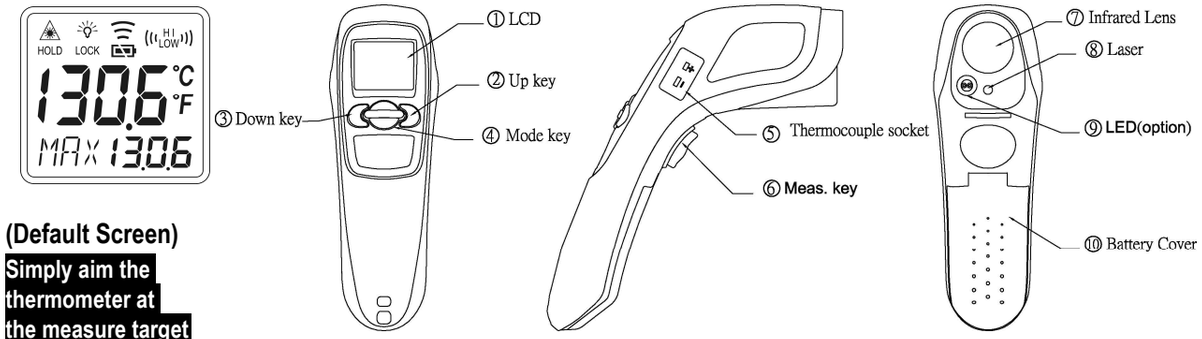
# TN410LD / TN410LDE(with white LED Flashlight) Thermometer Operating Instructions

**For Model with thermocouple socket**

The thermometer is a non-contact infrared thermometer. There are many mathematical modes for the Infrared function. Please remember to keep away from children and don't use it for safety related applications.




## (Default Screen)

**Simply aim the thermometer at the measure target with Lens (⑦) and press Meas. key (⑥) to display the surface temperature.**

**The Distance:Spot is 16:1. Please make sure the target area is within the field of view.**

## FUNCTION

**Press Mode key (④) for scrolling more display function as follows.**

| | |
|---|---|
| E | Here will show the emissivity data. (The default emissivity is 0.95.) |
| E | Press Mode key (④) , then press Up key (②) or Down key (③) to **set the emissivity**, then press Mode key (④) to confirm it. The emissivity can be changed from 0.10 (10E) to 1 (100E). |
| MAX<br>MIN<br>dIF<br>AVG | Press Mode key (④) for the **Maximum (MAX), Minimum (MIN), Different between MAX and MIN (DIF) and Average (AVG) modes. During the measurement, the special modes reading will be displayed beside the mode icon.** |
| HAL<br>LAL | Press Up key (②) or Down key (③) key to change the **High Alarm (HAL)** or **Lo Alarm (LAL)**, then press Meas. key (⑥) to confirm it. When the reading is outside the **High Alarm (HAL)** or **Lo Alarm (LAL)** limit. The High or Low icon will flash and you will hear a beep sound. |
| PRB | Connect the thermocouple with Thermocouple socket (⑤) and put the probe in/on the target, the thermometer will display the temperature automatically without pressing any button. To see the minimum or maximum data during the probe measurement, please hold down the Up key (②) or Down key (③).<br>⚠ After measure high temp, the probe may remain HOT for a while. |

** The thermometer will automatically shut off if left idle for more than 60sec, unless in PRB mode. (In PRB mode, it will shut off if left idle for more than 12 minutes.)

## ADD VALUE

| | |
|---|---|
| **In E,MAX, MIN, DIF, AVG mode:** | Press Up key (②) for **LOCK mode** ON/OFF. The lock mode is particularly useful for continuous monitoring of temperatures for up to 60 minutes. |
| | Press Down key (③) for **°C** or **°F transferred.** |
| **In all modes: First hold on the Meas. key (⑥)** | and press Up key (②) for **backlight function** ON/OFF. |
| | and press Down key (③) for **laser function** ON/OFF. |

**⚠CAUTION**

**1. WHEN DEVICE IS IN USE, DO NOT LOOK DIRECTLY INTO THE LASER BEAM–PERMANENT EYE DAMAGE MAY RESULT.**
**2. USE EXTREME CAUTION WHEN OPERATING THE LASER.**
**3. NEVER POINT THE DEVICE TOWARDS ANYONE'S EYES.**
**4. KEEP OUT OF REACH OF ALL CHILDREN.**

Ref.No. : 032011

**STORAGE & CLEANING** **The thermometer should be stored at room temperature between –20 to +65 °C (-4~149°F).**

The sensor lens is the most delicate part of the thermometer. The lens should be kept clean at all times, care should be taken when cleaning the lens using only a soft cloth or cotton swab with water or medical alcohol. Allowing the lens to fully dry before using the thermometer. Do not submerge any part of the thermometer.

**LCD ERROR MESSAGES**

The thermometer incorporates visual diagnostic messages as follows:

HI / LOW — 'Hi' or 'Lo' is displayed when the temperature being measured is outside of the settings of HAL and LAL.

Er2 Er3 — 'Er2' is displayed when the thermometer is exposed to rapid changes in the ambient temperature. 'Er3' is displayed when the ambient temperature exceeds 0°C (32°F) or +50°C (122°F). The thermometer should be allowed plenty of time (minimum 30 minutes) to stabilize to the working/room temperature.

Er — **Error 5~9**, for all other error messages it is necessary to reset the thermometer. To reset it, turn the instrument off, remove the battery and wait for a minimum of one minute, reinsert the battery and turn on. If the error message remains please contact the Service Department for further assistance.

**BATTERIES**

The thermometer incorporates visual low battery indication as follows:

'Battery OK': measurements are possible

'Battery Low': battery needs to be replaced, measurements are still possible

'Battery Exhausted': measurements are not possible

⚠ When the 'Low Battery' icon indicates the battery is low, the battery should be replaced immediately with AAA, 1.5V batteries. Please note: It is important to turn the instrument off before replacing the battery otherwise the thermometer may malfunction.

⚠ Dispose of used battery promptly and keep away from children.

**SPECIFICATION**

| Item | Non-contact Infrared Scan function | Thermocouple Probe Scan function (K type; probe not included.) |
|---|---|---|
| Measurement Range | -60 to +625°C (-76 to +1157°F) | -64 to +1400°C (-83.2 to +1999°F) |
| Operating Range | 0 to +50°C (32 to +122°F) | |
| Accuracy (Tobj=15~35°C, Tamb=25°C) | ±1.0°C (1.8°F) | +/-1% of reading or 1°C (1.8°F) whichever is greater (Test under Tamb=23±6°C) |
| Accuracy(Tamb=23±3°C) | Tobj=0~625°C:+/-2% of reading or 2°C (4°F) whichever is greater, Tobj= -60~0°C: +/-(2°C+0.05/degree) | |
| Emissivity Range | 0.95 default – adjustable 0.1 to 1 step .01 | |
| Resolution (-9.9~199.9°C) | 0.1°C/0.1°F, otherwise 1°C/1°F | |
| Response Time (90%) | 1sec | |
| Distance:Spot | 16:1(90% energy covered) | |
| Battery Life | Typ.180, min 140 hours continuous use (Alkaline, without Laser and Back Light.) | |
| Dimensions | 48.8 x 132.7 x 146.0mm(1.92×5.22×5.75 inch) | |
| Weight | 221.8 grams(7.8 oz) including batteries (AAA*2pcs) | |
| Note: Under the electromagnetic field of 3V/m from 200 to 600 MHz, the maximum error is 10°C (18°F). | | |

⚠ **Caution: The measure range is for thermometer only. User should choose proper probe types for different kinds of application. Please make sure the target to be measured will not exceed the temperature range of the probe to avoid permanent damage of the thermocouple probe.**

⚠ **Caution: To avoid electric shock and thermometer damage, do not measure live circuit where voltage exceeding 24V AC RMS or 60V DC with the thermocouple probe.**

⚠ **EMC/RFI:**Readings may be affected if the unit is operated within radio frequency electromagnetic field strength of approximately 3 volts per meter, but the performance of the instrument will not be permanently affected.

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