ATTEN

Temperature tester user manual
ST-1090

Specification:

Model	ST-1090
Resolution	1℃/1°F
Temperature range	0-800℃/32-1472°F
Accuracy Temperature	±5℃/±9°F
Sensing wire	K-type thermocouple
Display	LCD
Power	9V DC High-performance Alkaline battery
Operating environment	0℃~40℃/32°F~104°F
Size	75x143.5x41.5mm
Weight	185g

Infrared transmitter tube

USB interface (convert serial communication, the computer needs to install the CH340 chip driver)

LCD Screen

Power

External sensor interface

Push button

Temperature point

Putter

Ring gasket

Sensor

Terminal

When installing the sensor, insert the sensor into the putter and terminal(The red edge is inserted into the red terminal, and the blue is inserted into the blue terminal)

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Operation guide

1.Switch function
Short press the "POWER" button to turn on, the display shows the room temperature when turning on; you need to long press the "POWER" button to turn off.

2.The highest temperature to maintain the interface
Short press the "MAX HOLD" key to open the maximum temperature hold interface, as shown in Figure 3-1, short press again to close and return to the working interface.
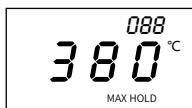
Figure3-1

3.The display interface of the number of times the sensor wire is used
Each time the temperature is tested, the upper right display area of the main window will increase the number of times, up to 999 times, long press "RESET"The combination key can be reset to zero times. (When used 50 times, it flashes to prompt to replace the sensing wire)
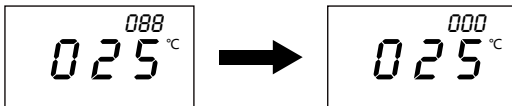
4.IR and serial port use display interface
After testing the temperature, short press the SEND key to send the data, the IR character will be displayed as shown in Figure 4-1 (support ST-3150 soldering station)
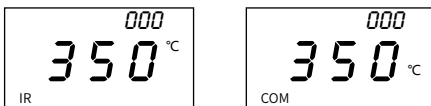
Figure4-1   Figure4-2   (Serial communication baud rate 9600)

The serial port data line is connected to the thermometer and the computer, the thermometer displays COM as shown in Figure 4-2; the thermometer sends to the computer every 100ms temperature data.

ATTEN serial port assistant

Download ATTEN serial port assistant from the official website(You can also use other serial port assistants)

Note:convert serial communication, the computer needs to install the CH340 chip driver

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Instructions

1. Open the battery cover on the back of the instrument, insert the battery and close the back cover. Please pay attention to the correct connection of the battery when inserting the battery.
2. Put the sensor into the putter and terminal (red edge into the red terminal, blue into the blue terminal).
3. Press the power and check the display screen. When the display shows room temperature, you can perform operation or measurement.
4. The soldering iron tip sticks the flux to the test point, and the temperature will be displayed within 2 seconds.
5. After use, press and hold the power button to shut down.
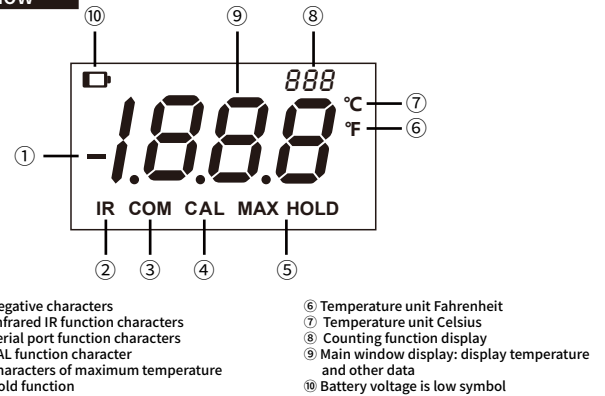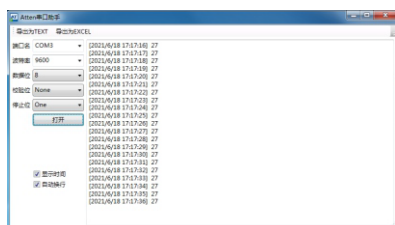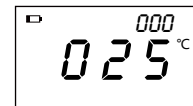
Precautions

1. The sensor is made of very thin (φ0.2mm) metal wire. It should be used with care and not bend or break.
2. The housing of the thermometer is made of plastic. Do not touch the tip of the soldering iron.
3. The sensor is a consumable item (life of about 50-60 times), long time use, the alloy layer is worn out, the measurement will be inaccurate, and need to be replaced New sensor.
4. Alcohol can be used to clean the flux attached to the terminal. Do not use thinner or volatile oil.
5. If the display shows -1, it means that the temperature sensor has been scrapped (or no sensor is installed) and a new one needs to be replaced.
6. If it displays ▭▭, it means the battery is low, and the temperature cannot be measured normally, and the battery needs to be replaced. It is recommended remove the battery if not to use it for a long time .
7. The 191-212 temperature sensor is only suitable for measuring the temperature below 500℃, such as measuring higher temperature, please use the appropriate Temperature probe.
8. Do not blow the hot air gun directly to the ST-1090 for measurement. Blowing directly will damage the ST-1090 host.

Note: Thermocouple and external temperature sensing wire cannot be used at the same time.

Package list

Host ST-1090:1
Battery: 1
K-type thermocouple test wire:1
Sensor : 10
MINI USB data line 1

LCD Show

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① Negative characters
② Infrared IR function characters
③ Serial port function characters
④ CAL function character
⑤ Characters of maximum temperature hold function
⑥ Temperature unit Fahrenheit
⑦ Temperature unit Celsius
⑧ Counting function display
⑨ Main window display: display temperature and other data
⑩ Battery voltage is low symbol

5.Low battery display interface
When the battery power is low, the low battery symbol is displayed in the upper left corner, prompting that the battery needs to be replaced as soon as possible to avoid affecting the use (Low battery temperature measurement is not accurate).

6.The sensor wire is damaged or there is no sensor wire display interface
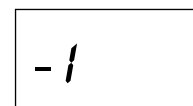
7.Automatic shutdown function
When the thermometer is not in use, it enters the shutdown countdown until the set shutdown time (default 15 minutes, can be set), the thermometer automatic shut-down.
Long press the "MAX HOLD" key to enter Figure 7-1, the "POWER" key shortens the time, and the "SEND" key extends the time (time setting range 1~240 minutes). After the setting is completed, long press the "MAX HOLD" button to exit and return to the working interface.
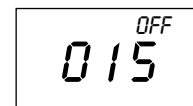

Figure7-1

8.Temperature unit switch setting interface
Long press the "MAX HOLD" key to enter Figure 7-1, press the "MAX HLOD" key again to enter Figure 8-1, and press the "SEND" key.Switch ℃/°F; after switching, press and hold the "MAX HOLD" key to exit and return to the working interface.
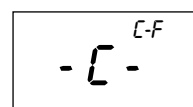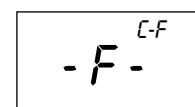

Figure8-1   Figure8-2

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温度测试仪说明书
ST-1090

技术规格

产品型号	ST-1090
分辨率	1℃/1℉
温度范围	0-800℃/32-1472℉
精确度	±5℃/±9℉
传感器	K型热电偶
显示	LCD显示
电源	9V DC 高性能碱性电池
操作环境	0℃~40℃/32℉~104℉
外形尺寸	75x143.5x41.5mm
重量	约185g

红外发送管　USB接口(转串口通信,电脑需要安装CH340芯片驱动)

显示屏

电源开关

RESET
POWER　MAX HOLD　SEND

外接传感器接口

推钮
推杆
环形垫片
终端

感温点
感应器

安装感应器时,将感应器套入推杆和终端
(红边套入红色终端,蓝色套入蓝色终端)

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操作指引

一.开关功能

短按"POWER"键开机,开机时显示屏显示室温;关机需要长按"POWER"键。

二.最高温保持界面

短按"MAX HOLD"键开启最高温度保持界面,如图3-1,再次短按关闭并返回工作界面。

```
    088
   380 ℃
   MAX HOLD
```
图3-1

三.传感丝使用次数显示界面

每测试一次温度,主窗口右上方显示区域,增加一次次数,最高支持999次,长按"RESET"组合键可以清零次数。(使用50次时,闪烁提示更换传感丝)

```
    088              000
   025 ℃     ➡     025 ℃
```
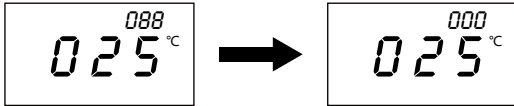
四.IR和串口使用显示界面

测试温度后,短按SEND键发送数据,IR字符会显示如图4-1(支持ST-3150焊台);

```
    000              000
   350 ℃           350 ℃
   IR               COM
```
图4-1　　　　图4-2 (串口通信波特率9600)

串口数据线连接好测温仪和电脑,测温仪显示COM如图4-2;测温仪每100ms向电脑发送一次温度数据。

ATTEN 串口助手

从官网上下载ATTEN串口助手
(也可使用其他串口助手)

注:转串口通信,电脑需要先
安装CH340芯片驱动

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使用说明

1.打开仪器背面的电池盖,装入电池后盖好后盖,注意,装入电池时请注意电池的正确连接。
2.将感应器套入推杆和终端(红边套入红色终端,蓝色套入蓝色终端)。
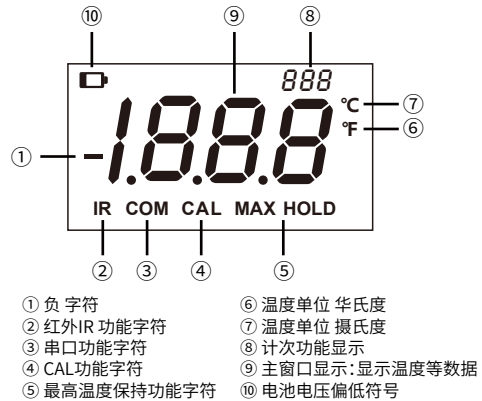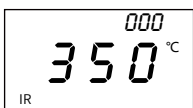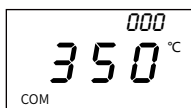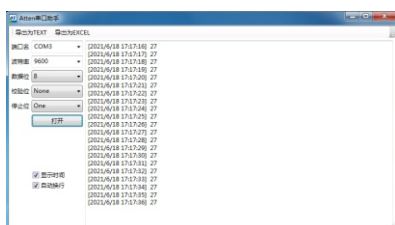3.按一下电源,检查显示屏,当显示屏显示室温时,可以进行操作或测量工作。
4.烙铁头沾上焊剂接触在测试点,在2秒内,将显示温度。
5.使用完后,长按电源键关机。

注意事项

1.感应器是用非常细(φ0.2mm)金属丝线制成,应小心使用,切勿弯曲,否则折断。
2.测温仪外壳是塑胶制成,切勿触及烙铁头。
3.传感器属于消耗品(寿命约50-60次),长时间使用,合金层损耗,测量便不准确,需要更换新的传感器。
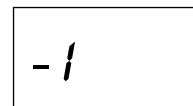4.可用酒精清洗附在终端上的助焊剂,切勿使用稀淡剂或挥发油。
5.显示屏如果显示 -1 ,表示感温器已报废(或没有安装传感器),需要更换新的感温器。
6.如果显示 ▭ ,表示电池电量低,不能正常测温,需要更换电池,长时间不使用建议取出电池。
7.191-212温度传感器只适用于测量500℃以下的温度,如测量更高的温度,请使用合适的温度探针。
8.请勿将热风枪直接吹向ST-1090来进行测量,直接吹会使ST-1090主机受损。
注:热电偶与外接感温线不能同时使用。

包装清单

主机 ST-1090 1台　　　电池 1个　　　传感器 10个
K型热电偶测试线 1条　　　MINI USB 数据线 1条

LCD 屏显界面

```
⑩                    ⑨    ⑧
 ▭              888      ℃ ⑦
① -1.8.8.8              ℉ ⑥

   IR  COM  CAL  MAX HOLD
    ②   ③   ④    ⑤
```

① 负 字符
② 红外IR 功能字符
③ 串口功能字符
④ CAL功能字符
⑤ 最高温度保持功能字符

⑥ 温度单位 华氏度
⑦ 温度单位 摄氏度
⑧ 计次功能显示
⑨ 主窗口显示:显示温度等数据
⑩ 电池电压偏低符号

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五.电池电量低显示界面

当电池电量低的时候,左上角显示低电量符号,提示需要尽快更换电池,避免影响使用(低电量测温不准)。

```
 ▭       000
   025 ℃
```
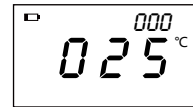
六.传感丝损坏或者无传感丝显示界面

```
   -1
```

七.自动关机功能

测温仪未被使用时,进入已设定的关机时间倒计时(默认15分钟,可设置),测温仪自动关机。长按"MAX HOLD"键进入图7-1 ,"POWER"键缩短时间,"SEND"键延长时间(时间设置范围1~240分钟)。设置完成后长按"MAX HOLD"键退出并返回工作界面。
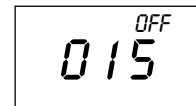
```
       OFF
   015
```
图7-1

八.温度单位切换设置界面

长按 "MAX HOLD"键进入图7-1,再按一次"MAX HLOD"键进入图8-1,按"SEND"键即可进行℃/℉ 切换;切换完成后长按"MAX HOLD"键退出并返回工作界面。

```
       C-F              C-F
  -C-              -F-
```
图8-1　　　　　　图8-2

本产品经检验符合技术标准,产品合格。

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