



- Soldering iron tester useful for daily maintenance of station type soldering irons
- Tip temperature, leak voltage and tip-to-ground resistance can be easily measured with high accuracy.
- Extremely fine sensor with high temperature reactivity is incorporated

Packing List

Part No.	Packing List
FG101	HAKKO FG-101, Fuse, Conduction Wire, Sensor (10 pcs/set), Multi-adapter, European Adapter, Ground Clip, Power cord, Instruction Manual

HAKKO FG-101 should be calibrated regularly as a Meter/Tester.
For details, please [contact us](#) or the distributors in your country.

Specifications

Model No.	FG101
Power consumption	2.6W
Dimensions	200(W)×50(H)×120(D)mm
Weight	1kg
Temperature resolution	1°C
Temperature measurement range	0-700°C
Temperature precision	±3°C (300-600°C) ±5°C (other than above)
Temperature sensor	K (CA)type thermocouple
Voltage resolution	0.1mV
Voltage measurement range	0-40mV (CA)

Model No.	FG101
Voltage precision	± (5% of reading + 1 digit)
Resistance resolution	0.1Ω
Resistance measurement range	0-40Ω
Resistance precision	± (5% of reading + 1 digit)
Display	LCD : 3 1/2digits Burnout : -1 MAX HOLD : 'MAX HOLD' is displayed at the lower right of the LCD.
Operating environment	Ambient temperature/humidity range : 0-40°C, 20-90%RH (without condensation)
Environmental condition	Applicable rated pollution degree 2 (According to IEC/UL 61010-1)

* Weight (w/ power code)

* Temperature sensor (No.191-212 or No.191-212C) can only be used to measure temperatures below 500°C. To measure higher temperatures, use an applicable temperature probe.

* When a sensor is not attached or it burns out, the alarm symbol of Burnout(-1) is displayed. The same symbol is also displayed when a temperature outside the measurement range is detected.

Features

One tester for all your soldering iron maintenance needs.

- What should you check when doing a daily inspection of your soldering iron?
Grounded soldering irons are maintained by inspecting leak voltage, tip-to-ground resistance, and tip temperature.
Grounded soldering irons cannot be maintained by checking insulation resistance. This method was used in the past in order to find out the level of leak current.



What is 'Leak voltage'?

Leak current is the current that leaks from the tip to a board or device. Leak voltage is a specific measurement of the level of this current. The leakage can adversely affect delicate devices, so it is necessary to check leak voltage on a daily basis.



What is 'Tip-to-ground resistance'?

Most leak current flows from the tip via the ground wire to the outlet ground terminal, and is prevented from affecting the device. Because of this, tip-to-ground resistance is another important issue that must be checked daily.



Why is tip temperature important?

As the tip, element cover and other parts oxidize, heat conduction deteriorates and the tip temperature becomes lower. This causes the difficulty of soldering. Therefore, tip temperature should be inspected daily to have better soldering.

Maximum current value measured with HAKKO FG-101

100V-120V Spec 5A

220V-240V Spec 3A

Note: HAKKO FG-101 is broken when beyond maximum current value is measured.

In addition to traditional features, the FG-101 comes with two new functions: MAX HOLD and AUTO ZERO.

MAX HOLD Function Constantly displays the maximum temperature

AUTOZERO Function Automatically corrects zero point error of measuring instruments

Traditional Features Lead-free sensor
 Measures leak voltage by True Root Mean Square (TRMS)
 Highly reliable - Resistant to drift and changes in

temperature

* The FG-101 does not come with the Monitor Output function that was included in past models.

❖MAX HOLD Function



When the MAX HOLD function is on, the maximum temperature is constantly displayed on the LCD.

If the MAX HOLD button is pressed for a short time (less than 1 second) the maximum temperature is updated. If the button is pressed for a long time (1 second or longer) the MAX HOLD function turns off.

❖AUTO ZERO Function

The zero point error of measuring instruments can be corrected by simply pressing the AUTO ZERO button and waiting for the display to return to normal.



Usage / Applications

❖How to measure the tip temperature, leak voltage and tip to ground resistance

Do not blow hot air (for example, with the [HAKKO FR-802](#), etc.) directly onto the HAKKO FG-101 to measure the temperature.

If the hot air is blown directly onto the tester, the main unit of HAKKO FG-101 itself will be damaged.

When using the HAKKO FG-101, plug it into the outlet with a grounding terminal.

The HAKKO FG-101 cannot measure the leak voltage and tip to ground resistance of a soldering iron which has no grounding pin.

It can measure the leak voltage and tip to ground resistance of a soldering iron which has a plug with grounding pin.



➤Differenced in the measurement methods according to tip shapes

For the precise temperature measurement, place the tip on the measuring point on sensor horizontally.

➤Guaranteed temperature range with the measurement tolerance of $\pm 3^{\circ}\text{C}$

In general, the optimal temperature range for soldering is 300°C to 500°C , and that for SMD rework system is 300°C to 600°C . The tolerance of $\pm 3^{\circ}\text{C}$ within the optimal temperature range (300°C to 600°C) is assured. For the temperature range other than the above, the tolerance is not guaranteed but usually stays in the range of about $\pm 5^{\circ}\text{C}$.

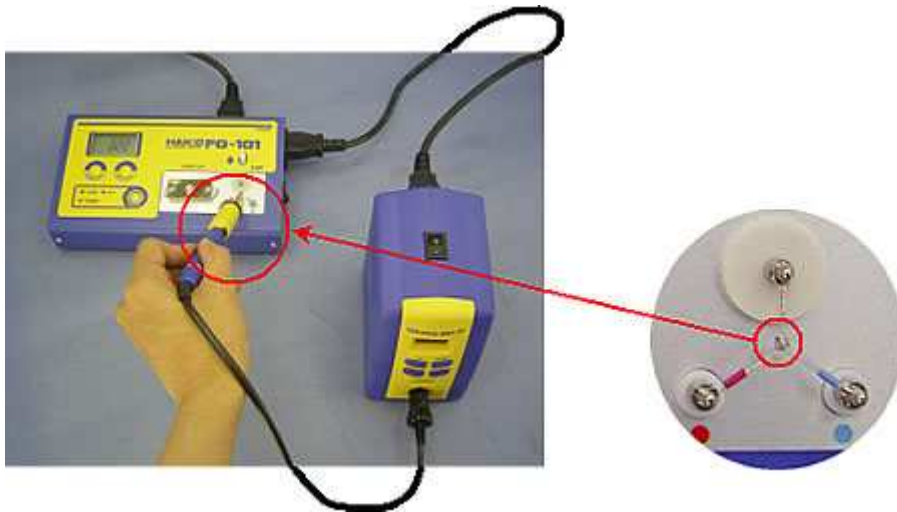
How to measure the soldering tip temperature

1. Press the SELECT button to change the mode display to "TEMP".



2. Put fresh solder on the tip.
3. Place the tip on the temperature measuring point of the sensor.

Place the tip on the temperature measuring point located in the center of sensor.
* The way to place the tip on the sensor varies depending on the shape of the tip.

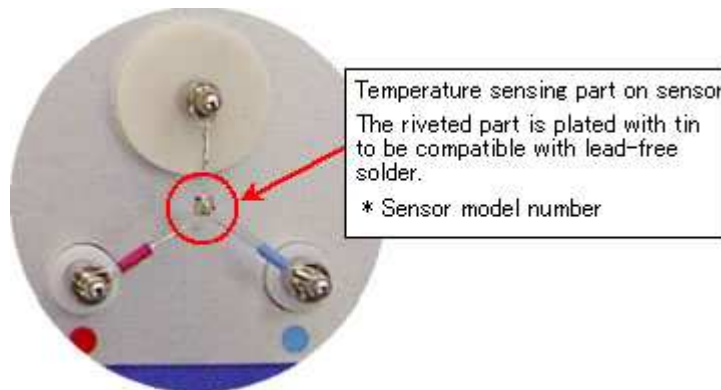


4. Wait until the displayed value is stable and read it.

! It is not necessary to deduct the room temperature that was displayed when the power was turned ON from the measured temperature. The temperature appearing on the LED display is the actual measured value.

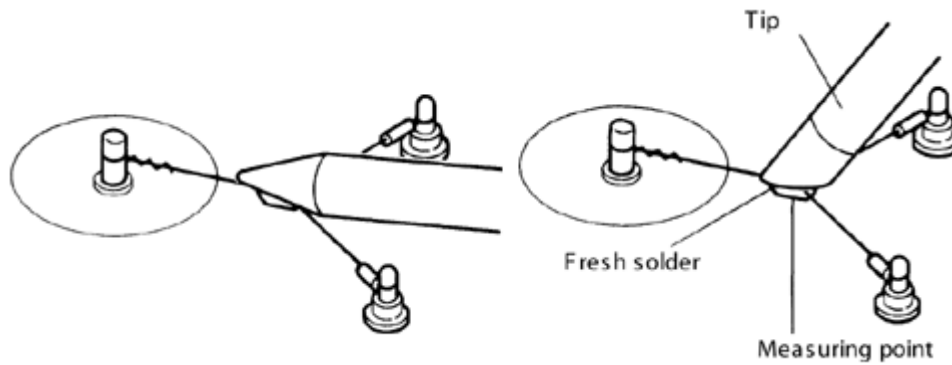
[How to place the tip on the temperature measuring point on the sensor]

For a precise temperature measurement, place the tip on the measuring point on the sensor horizontally.



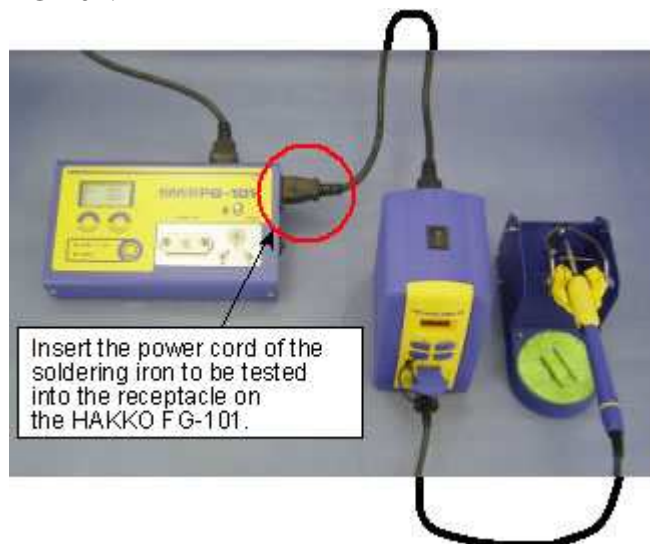
■ For the B type, I type and D type, if a tip has standard solder plating, place the center of the solder plated part to the measuring point.

■ For the BC type and C type, if only the tip face is solder plated, place the plated face to the measuring point as shown in the illustration.



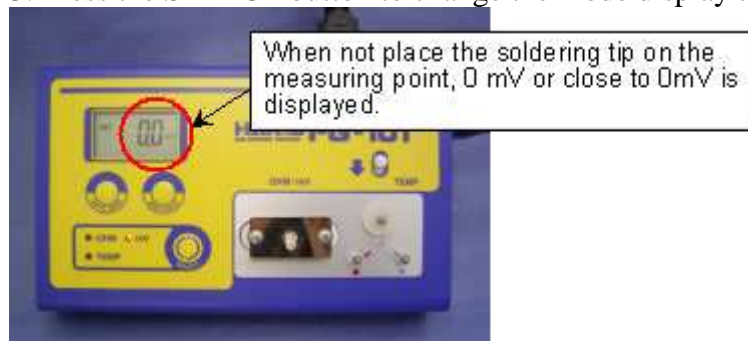
How to measure the leak voltage

1. Insert the power plug of the soldering iron to be tested into the receptacle on the HAKKO FG-101.



2. Wait until the temperature of the soldering tip reaches the setting.

3. Press the SELECT button to change the mode display to "mV".



4. Press the AUTO ZERO button and wait until the display returns to normal status. The correction value generated by the AUTO ZERO function is recorded in the main unit. It remains in the memory even when the power is turned OFF, and is valid also in the next

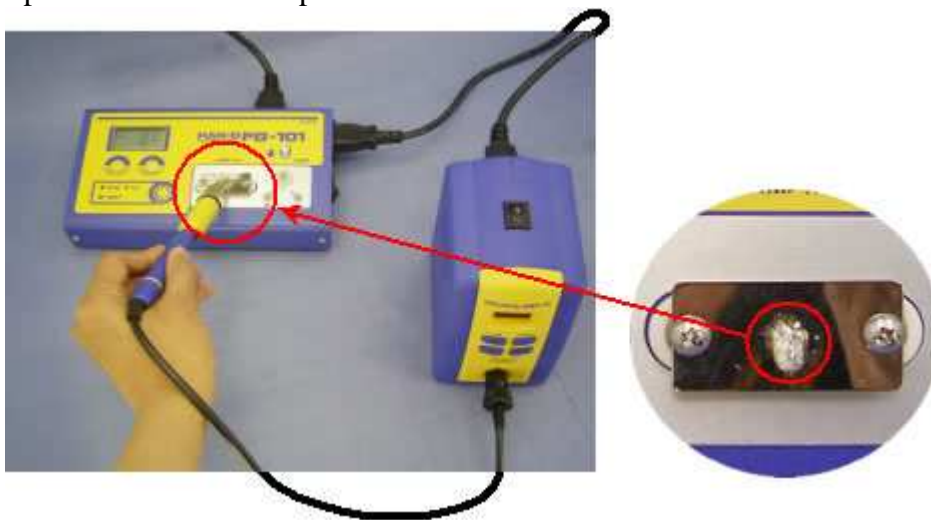
measurement.



5. Clean the soldering tip and put fresh solder on it.

6. Place a tiny bead of solder in the center of the conduction plate and heat the bead until suitable wettability is obtained.

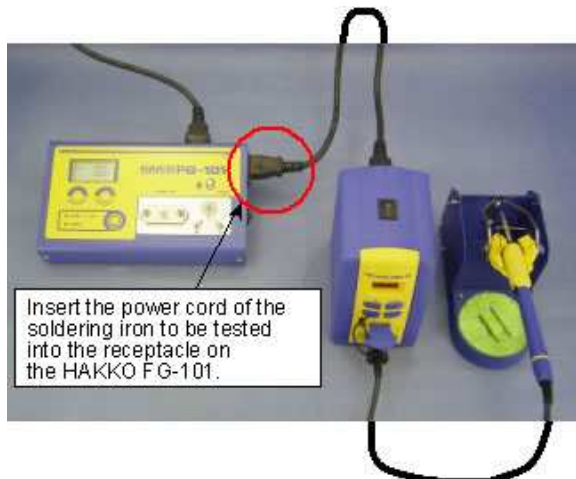
! Place solder in the center of the conduction plate to ensure contact between the soldering tip and the conduction plate.



7. Wait until the displayed value is stable and read it.

How to measure the tip to ground resistance

1. Insert the power plug of soldering iron to be tested into the receptacle on the flank of HAKKO FG-101.



2. Wait until the temperature of the soldering tip reaches the setting.

3. Press the SELECT button to change the mode display to "OHM".



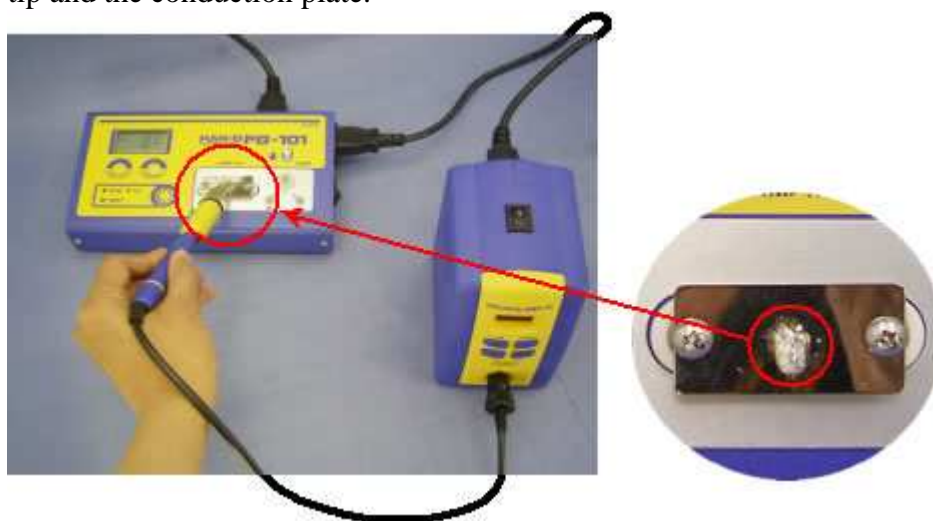
4. Press the AUTO ZERO button and wait until the display returns to normal status. The correction value generated by the AUTO ZERO function is recorded in the main unit. It remains in the memory even when the power is turned OFF, and is valid also in the next measurement.



5. Clean the soldering tip and put fresh solder on it.

6. Place a tiny bead of solder in the center of conduction plate and heat the bead until suitable wettability is obtained.

! Place solder in the center of the conduction plate to ensure contact between the soldering tip and the conduction plate.



7. Wait until the displayed value is stable and read it.