



HS-02A / HS-02B

Intelligent Soldering Iron
User Manual



The soldering iron tip reaches temperatures of up to 450 °C. Read Chapter 9 - Safety Instructions before first use.

Published by the importer Rotorama, s.r.o. · www.rotorama.cz

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Notice to users

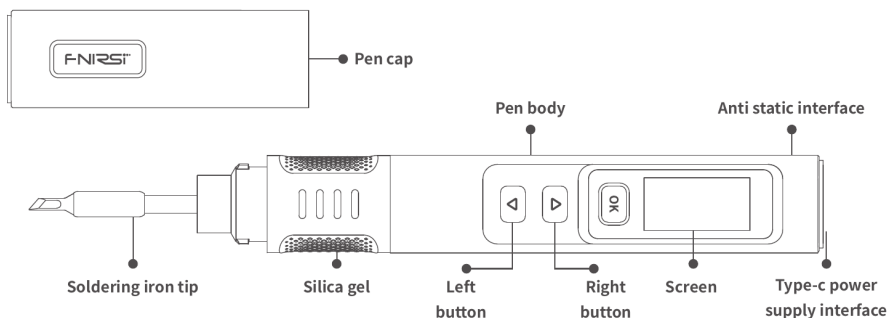
- Please read this manual carefully to ensure you obtain the best state of the product.
- Please keep this manual properly.
- Waste batteries and instruments cannot be disposed of together with household waste. Please dispose of them in accordance with relevant national or local laws and regulations.
- This device only supports the official soldering iron tips sold by the manufacturer (the soldering iron tips of HS-02A and HS-02B are not compatible). If you do not use the official soldering iron tips, incompatibility and inability to use may occur, which may seriously lead to short circuits, burns and other dangers.
- If there are any quality issues with the device or if you have any questions about using it, please contact your retailer or the importer stated in Chapter 10.1. We will solve it for you as soon as possible.
- Thank you for purchasing this product. In order for you to use this device more conveniently, please follow the manual when using it.

1. Product Introduction

HS-02 is a portable intelligent soldering iron with a screen display. This soldering iron has the following characteristics:

- light weight, easy to carry,
- rapid heating up,
- 0.96" HD colour screen,
- ergonomic design for comfortable grip,
- power adjustable,
- 9-20 V working voltage,
- temperature control,
- support for PD and QC protocols.

2. Product Structure



Structure of the HS-02 soldering iron

3. Product Parameters

Product name	HS-02A	HS-02B	Power supply	Type-C
Working voltage	9-20 V		Fast charging protocol	PD/QC
Temperature range	100-450 °C (180-842 °F)		Power	100 W (max.)
Screen	0.96" IPS HD colour screen		Soldering iron tip	HS02A-XX HS02B-XX
Weight	≈ 61 g			

❖ **HS-02A and HS-02B have the same shell, but the internal motherboard and the soldering iron tips are different. They cannot be compatible or interchangeable for use.**

4. Power Selection

Using a PD fast charging protocol power adapter, the soldering iron can be set to obtain a working voltage of 9 V, 12 V, 15 V or 20 V from the adapter (default setting 20 V). If there is a restart phenomenon, you can enter the adaptive power adjustment page, or manually enter the settings to reduce voltage or power.

Attention:

- The default working voltage obtained by the intelligent soldering iron is 20 V. If the maximum output voltage of your adapter is less than 20 V, it will obtain the highest available output voltage. If your adapter has a maximum output of 12 V, it obtains 12 V.
- When using a power adapter without PD or QC fast charging protocol, the working voltage of the intelligent soldering iron is the input voltage.
- Below 9 V, the screen will display a low voltage message.

5. Usage State

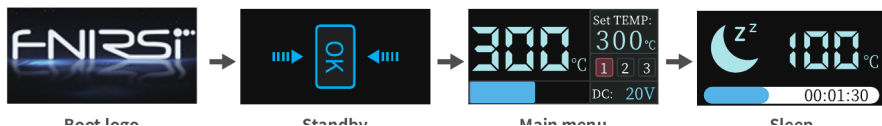
5.1 Installation instructions



- ① Insert the officially compatible soldering iron tip into the corresponding model.
- ② After connecting the Type-C power line, the device can be turned on and used.

❖ **Please note that the soldering iron tips compatible with HS-02A and HS-02B are not interchangeable. When inserting the soldering iron tip, if it is stuck, try rotating it before inserting.**

5.2 Workflow instructions



The workflow of the HS-02 intelligent soldering iron is shown in the figure above. After power on, the logo is displayed and when the logo disappears, the device enters standby mode; short press the OK button to enter the main menu for heating. In the main menu, the soldering iron is in a normal working state, divided into the following four types:

- **Working state:** in this state, the white LED light will remain on, the soldering iron is in the heating or heating completed state, and after the heating temperature reaches the set temperature, there will be a prompt sound.
- **Sleep state:** the soldering iron is already in a heated state, and if the sleep function is turned on and the idle time exceeds the set sleep time, it will enter sleep mode. Shake the handle or press any button to wake it up.
- **Standby state:** when turned on, the device enters standby mode; if the soldering iron is in sleep mode, the standby function is enabled and the idle

time exceeds the set standby time, it will enter standby mode. Short press the OK button to release standby mode and enter working mode.

- **Shutdown state:** power off means shutdown.



Working state



Sleep state

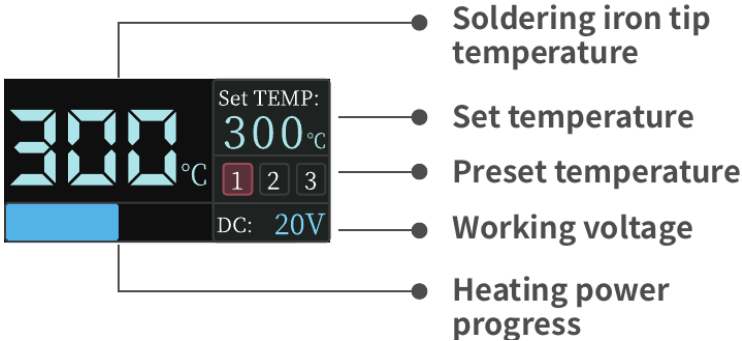


Standby state

Notice: When the soldering iron is in heating or heating completed state for use, do not touch high-temperature areas.

5.3 Main menu instructions

The main menu is shown in the figure. The top right corner displays the target temperature set by the user, below are three channel labels for preset temperatures, and the lower right corner displays the working voltage. The upper left displays the real-time temperature of the soldering iron tip, below it is the heating power progress bar.

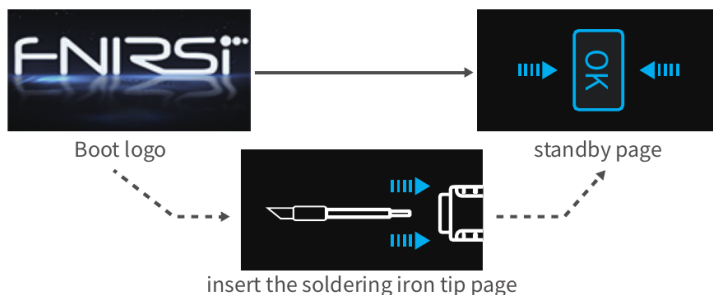


Main menu description

6. Operating Instructions

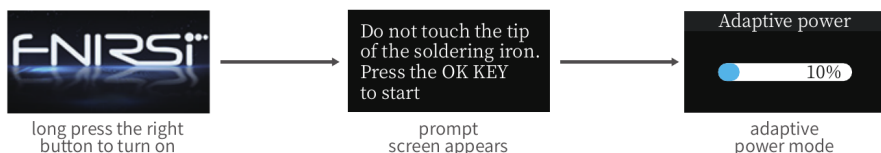
6.1 Basic Settings

Power on: after power on, the screen displays the boot logo and then automatically jumps to the standby interface. If the insert-the-soldering-iron-tip page is displayed, the interface will automatically jump to the standby page after the tip is inserted.



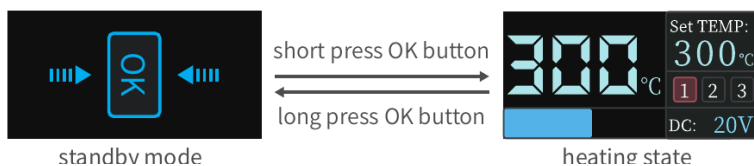
Adaptive power mode: to enter this mode, long press the right button while powering on until the boot logo appears, then press the OK button to start. In this mode no other operations can be performed and the power will increase by 1 % until the device restarts.

Notice: Accurate temperature control is not possible in this mode, please do not touch the soldering iron tip during this period!



Heating: in standby mode, the blue LED indicator lights on both ends of the OK button remain on. Short press the OK button to enter the heating page and the soldering iron will heat up.

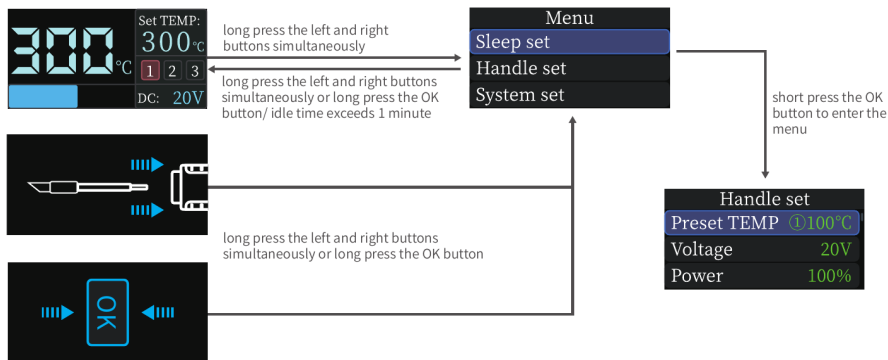
One click standby: press and hold the OK button in working mode to turn off heating and return to the standby page.



Temperature setting: in working state, when the handheld mode is right, short press the left button to subtract one step value and short press the right button to add one step value (when the hand mode is left, the operations are reversed). Long pressing the left or the right button will continuously and quickly decrease or increase the value. Short press the OK button to switch to the preset temperature channels and set the temperature value of that channel as the set temperature. The temperature setting range is 100–450 °C.

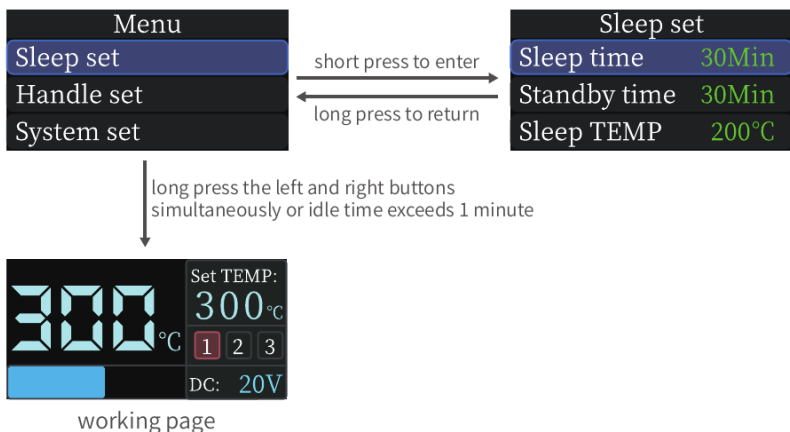


Setting mode: in working state, long press the left and right buttons simultaneously to enter the setting mode. When in standby mode or when the soldering iron tip is not inserted, long press the left and right buttons simultaneously, or long press the OK button, to enter the setting mode. Short press the left and right buttons to select the menu to be set, and short press the OK button to enter the selected menu. Long press the left and right buttons simultaneously, or long press the OK button, to exit the setting mode. If the idle time exceeds 1 minute, the setting mode is exited automatically.

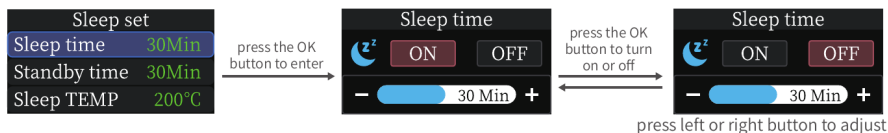


6.2 Sleep settings

On the settings menu, short press the left or right button to select *Sleep set* and press the OK button to enter the sleep setting. After entering, short press the left or right button to select the sleep parameter that needs to be modified and short press the OK button to enter the parameter modification interface. Long press the OK button to return to the settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the settings mode.



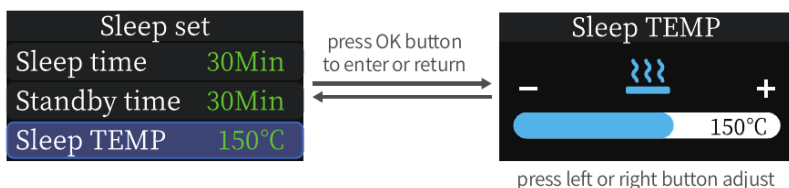
Sleep time: on the sleep setting page, short press the left or right button to select *Sleep time* and press the OK button to enter it. Short press the OK button to turn the sleep function on or off, long press or short press the left or right button to adjust the sleep time. Long press the OK button to return to the sleep setting; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default sleep time is 30 minutes, setting range 1-60 minutes. When set to the minimum and the left button is pressed again (when the handheld mode is left, the right button), the sleep function is turned off.



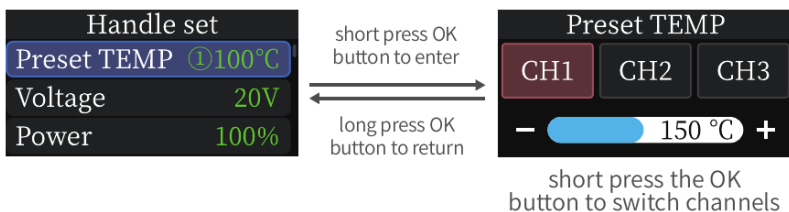
Standby time: on the sleep setting page, short press the left or right button to select *Standby time* and short press the OK button to enter it. Short press the OK button to turn the standby function on or off, long press or short press the left or right button to adjust the time. Long press the OK button to return to the sleep setting menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default time is 30 minutes, with a setting range of 1-60 minutes. When set to the minimum and the left button is pressed again (when the handle mode is left, the right button), the standby function is turned off.



Sleep temperature: on the sleep setting page, short press the left or right button to select *Sleep TEMP* and short press the OK button to enter it. Long press or short press the left or right button to adjust the sleep temperature; short press or long press the OK button to return to the sleep setting; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The setting range is 100-200 °C. When the working temperature is lower than the sleep temperature, the temperature rises to the sleep temperature in the sleep state; when the working temperature is higher than the sleep temperature, the temperature drops to the sleep temperature in the sleep state.

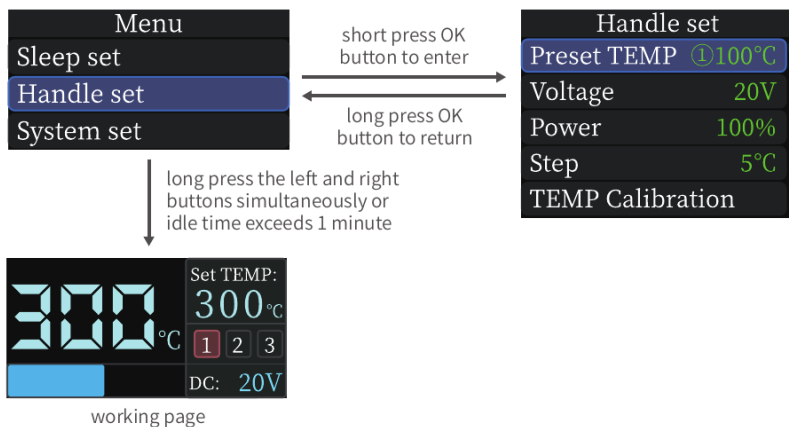


Pre-set temperature: on the handle setting page, short press the left or right button to select *Preset TEMP* and short press the OK button to enter it. Short press the OK button to switch between the three preset temperature channels, long press or short press the left or right button to adjust the temperature of the selected channel. Long press the OK button to return to the handle settings; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default temperature values of the three preset channels are 300 °C, 330 °C and 360 °C, with a setting range of 100-450 °C.

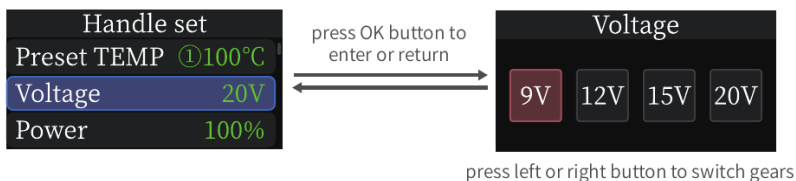


6.3 Handle setting

On the settings menu page, short press the left or right button to select *Handle set* and press the OK button to enter the handle settings menu. After entering, short press the left or right button to select the handle parameter that needs to be modified and short press the OK button to enter the parameter modification interface. Long press the OK button to return to the settings menu page; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



Voltage adjustment: on the handle setting page, short press the left or right button to select *Voltage* and press the OK button to enter it. Short press the left or right button to switch between the four voltage levels 9 V / 12 V / 15 V / 20 V; short press or long press the OK button to return to the handle settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default is 20 V. Set it according to your own charger power parameters to avoid the phenomenon of insufficient power causing the charger to start overcurrent protection and the device to be forced to shut down with a black screen. When this phenomenon occurs, wait for the charger to recover and select a suitable level again in the settings menu when there is no heating or no soldering iron tip inserted.

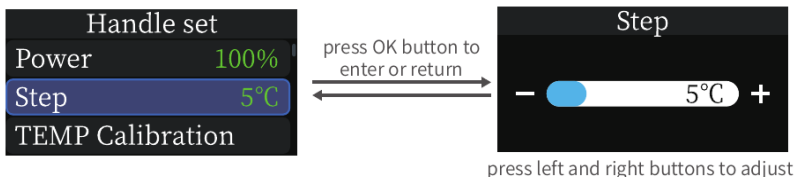


Power adjustment: on the handle setting page, short press the left or right button to select *Power* and press the OK button to enter it. Press the left or right button to adjust the power level (increasing or decreasing by a value of 1 each time); short press or long press the OK button to return to the handle settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The set power is the maximum power for heating the soldering iron; the heating power cannot exceed the set power. When setting, the power changes by 1 %, with a default value of 65 % and a setting range of 10-100 %. Set it according to your own charger power parameters to avoid the phenomenon of insufficient power causing the charger to start overcurrent protection and force the device to shut down with a black

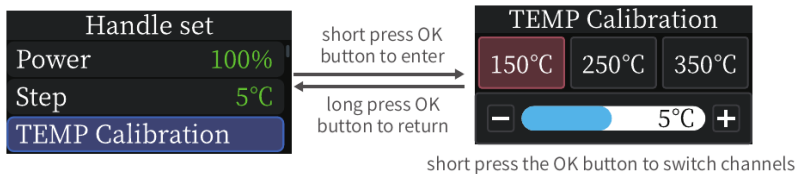
screen. When this phenomenon occurs, wait for the charger to recover and select a suitable level again in the settings when there is no heating or no soldering iron tip inserted.



Step adjustment: on the handle setting page, short press the left or right button to select *Step* and press the OK button to enter it. Short press or long press the left or right button to set the temperature step; short press or long press the OK button to return to the handle settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default step temperature is 5 °C and the setting range is 1-50 °C.

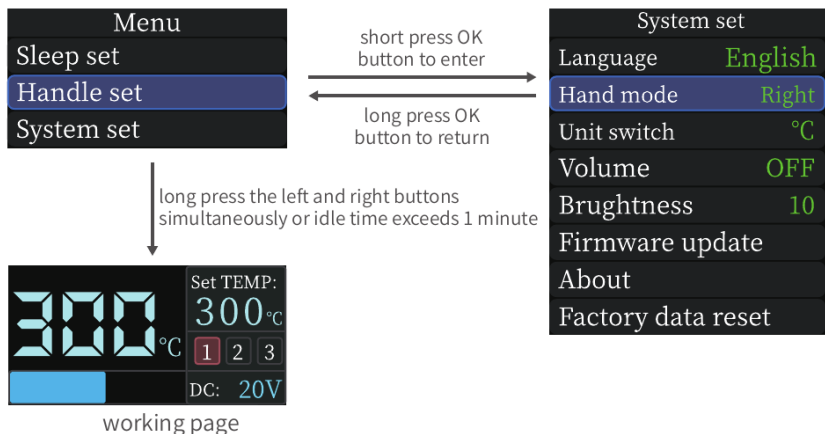


Temperature calibration: on the handle setting page, short press the left or right button to select *TEMP Calibration* and press the OK button to enter it. Short press the OK button to switch to the temperature point to be calibrated. Short press the left or right button to adjust the calibration value (positive or negative). After the temperature measured by the soldering iron thermometer stabilises: when the temperature on the thermometer is greater than the temperature to be calibrated, short press the left button (when the handheld mode is left, the operations are reversed) to reduce the calibration value; when it is lower than the calibration temperature, short press the right button (when the handheld mode is left, the operations are reversed) to increase the calibration value. When the temperature matches the calibrated temperature point, the calibration is completed and you can switch to the next temperature point. After all three temperature calibrations are completed, the system automatically saves the calibration values. Long press the OK button to return to the handle setting; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.

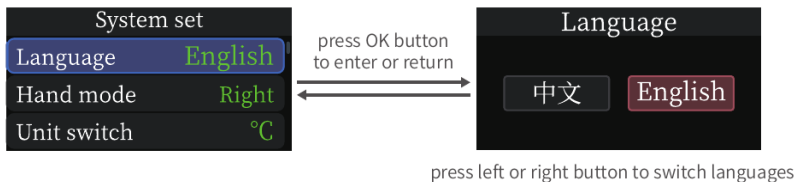


6.4 System settings

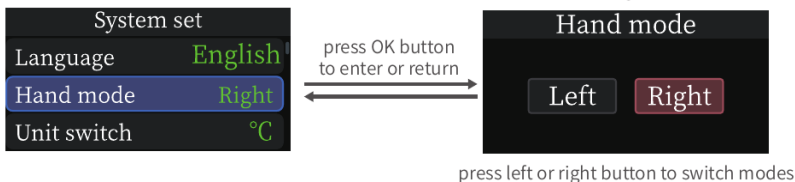
On the setting menu, short press the left or right button to select *System set* and press the OK button to enter the system settings menu. After entering, short press the left or right button to select the system parameter that needs to be modified and short press the OK button to enter the parameter modification interface. Long press the OK button to return to the settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



Language setting: on the system settings menu, short press the left or right button to select *Language* and press the OK button to enter it. Short press the left or right button to switch languages; short press or long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



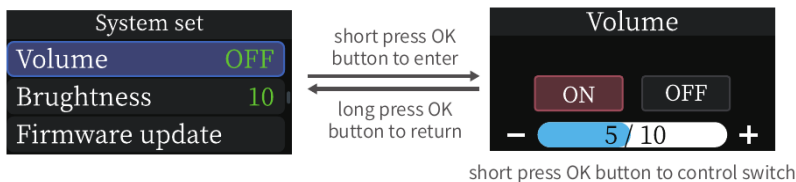
Handheld mode: on the system settings menu, short press the left or right button to select *Hand mode* and press the OK button to enter it. Short press the left or right button to switch between left and right modes; short press or long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. After switching the handheld mode, the addition and subtraction definitions of the left and right buttons will also switch.



Unit settings: on the system settings menu, short press the left or right button to select *Unit switch* and press the OK button to enter it. Short press the left or right button to switch between °C and °F; short press or long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



Sound settings: on the system settings menu, short press the left or right button to select *Volume* and press the OK button to enter it. Short press the OK button to switch the sound on and off. Short press the left or right button to adjust the volume, with a range of 1-10. When it decreases to the minimum, short press the left button again to turn off the sound. Long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



Screen brightness: on the system settings menu, short press the left or right button to select *Brightness* and press the OK button to enter it. Short press the left or right button to adjust the brightness level of the screen; short press or long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode. The default screen brightness is 10 and the adjustment range is 1-10.



Restore factory settings: on the system settings menu, short press the left or right button to select *Factory data reset* and press the OK button to enter it. Short press the left or right button to switch between confirm and return, short press the OK button to confirm the selection. When OK is selected, all modified parameters in the system are restored to their factory values and the device returns to the main interface (the language needs to be selected again). When return is selected, the device goes directly back to the system settings menu. Long press the OK button to return to the system settings menu; long press the left and right buttons simultaneously or wait for an idle time of more than 1 minute to exit the setting mode.



7. Firmware Update

Power off the device, press and hold the OK button, then connect the USB Type-C data cable to the computer to power on the device and enter the Bootloader interface for firmware upgrade. After entering the Bootloader, the computer recognises the device as a USB drive; copy the firmware file directly to that drive. After one minute of inactivity in the Bootloader interface, the existing firmware will automatically run.

8. Maintenance

- When using a new soldering iron tip for the first time, it needs to be heated to 250 °C and tin coated to prevent dry burning and oxidation.
- After using the soldering iron, please apply an appropriate amount of tin to the soldering iron tip to prevent oxidation.
- The normal working temperature of the soldering iron tip is about 300–380 °C; it is not advisable to use it for a long time at a high temperature, as this affects the lifespan of the tip.
- Avoid violent tapping of the soldering iron tip during soldering.
- When using a wet sponge, do not use open water. A semi-dry state is optimal.
- Do not use flux containing chlorine or highly acidic flux, to avoid corrosion of the surface.
- If the surface of the soldering iron tip is oxidised and does not adhere to tin, the surface layer can be carefully wiped off with gauze or another tool, then heated to 250 °C and tin applied immediately so that it sticks to the surface and prevents further oxidation.

9. Safety Instructions

9.1 Manufacturer's instructions

- When the soldering iron tip is working, the temperature can reach 100–450 °C. Do not touch the soldering iron tip.
- Please keep out of reach of children.
- Do not wet this product or use it in damp environments.
- When not in use for a long time, please disconnect the power.
- When working normally, there will be a certain temperature at the handle, which is a normal phenomenon.

9.2 Additional safety instructions

✱ **The following instructions were added by the importer beyond the manufacturer's original manual, in order to meet the requirements of Regulation (EU) 2023/988 on general product safety.**

Intended use

- The product is intended for manual soft soldering of electronics in home workshops and in professional use. Any other use is considered use contrary to the intended purpose.

Hot surface and risk of burns

- The tip reaches temperatures of up to 450 °C and stays hot for several minutes after switching off. Touching it causes severe burns.
- Always place the switched-on soldering iron in its stand, never on the workbench, on the cable or on any other object.
- Let the device cool down completely before storing it or fitting the tip cap.
- Replace the soldering iron tip only when the device is disconnected from the power supply and the tip has cooled down.

Fire hazard

- Do not use the product near flammable liquids, gases, paper, textiles or other flammable materials.
- Never leave the switched-on soldering iron unattended. Disconnect the power supply when you finish work.
- Do not use the product in a potentially explosive atmosphere.

Fumes and ventilation

- Flux fumes irritate the respiratory tract and the eyes. Work in a well-ventilated area, preferably with fume extraction.
- Do not eat or drink while soldering; wash your hands after finishing work. This applies in particular when using leaded solder.

Power supply and electrical safety

- The power adapter is not included in the delivery. Use only a USB-C power source with the PD or QC protocol in the range of 9–20 V and with sufficient power.
- Never solder equipment that is connected to the mains or to a battery. Disconnect the device being repaired from its power supply before soldering.
- The device is equipped with an anti-static interface. When soldering components sensitive to static electricity, connect it to the workplace earth.

User restrictions and prohibition of modifications

- The product is not a toy. It must not be used by children or by persons with reduced physical, sensory or mental capabilities without the supervision of a person responsible for their safety.
- Do not open or modify the device in any way. Leave repairs to a qualified person.

10. Information for the EU and Czech Market

10.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

10.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designation (HS-02A / HS-02B) is given on the product and on its packaging; the firmware version number can be found in the *System set* → *About* menu.

10.3 Disposal of electrical equipment



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste.**
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz and also in the [Register of Take-back Points of the Czech Ministry of the Environment](#).

10.4 Manufacturer

Manufacturer	Shenzhen FNIRSI Technology Co., Ltd.
Address	West of Building C, Weida Industrial Park, Dalang Street, Longhua District, Shenzhen, Guangdong, China
E-mail	fnirsiofficial@gmail.com (business) fnirsiofficialcs@gmail.com (equipment service)
Phone	+86 755 28020752 / +86 135 3688 4686
Web	www.fnirsi.cn

11. Warranty and rights arising from defective performance

11.1 Rights of the buyer under Czech law

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection. The manufacturer's warranty terms set out below (Chapter 11.2) **do not in any way limit** the buyer's rights arising from these regulations.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 10.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Central Inspectorate – ADR Department, Gorazdova 1969/24, 120 00 Prague 2, adr.coi.gov.cz.

11.2 Manufacturer's warranty terms

❖ **The following text is the manufacturer's warranty statement. It does not limit the buyer's rights under Chapter 11.1.**

Service period

Shenzhen FNIRSI Technology Co., Ltd. promises good product quality. If the product malfunctions during normal use within 7 days from the date of sale, the customer can choose to return the goods or to have them repaired under warranty (goods can only be returned if this does not affect secondary sales). Free warranty service is available if there is a malfunction within one year of normal use.

The purchase date is based on the purchase invoice or receipt issued by the seller; for online shopping, transaction screenshots can be used.

Free warranty service is not provided in the following situations

- any intentional damage, unauthorised modification or repair that causes damage to the device;
- the soldering iron tip is a consumable item and is not covered by the warranty.