

Power supply method: 24V DC is used for power supply, and after DC-DC voltage reduction, it supplies power to the system and NFC chips.

Power on process: Press the power on/off button on the panel to turn on the device. After pressing the power on/off button, the 24V power is reduced through DC-DC and sent to the system and NFC circuit. The screen lights up and displays on the card swiping diagram page, waiting for the user to swipe the card. Once the user swipes the card successfully, they will enter the instrument function page. After the user successfully swipes the card, the startup is completed.

Shutdown process: Press and hold the power button on the panel for 3 seconds, and the machine will automatically shut down. When shutting down, both the system power and NFC power will be turned off.

Working principle of NFC section:

NFC is a short-range high-frequency radio technology, with a communication distance of less than 5 centimeters and a operating frequency of 13.56MHz. The working mode of NFC is divided into passive mode and active mode. In the device, the NFC operates in passive mode. In passive mode, the NFC initiating device (commuting vehicle instrument end) requires a

power supply device. The NFC circuit on the instrument uses the energy of the power supply device to provide an RF field and sends data to the NFC target device (commuting vehicle key), with a data transmission speed of 106kbps. The commuting vehicle key card does not generate an RF field, so it does not require a power supply device. Instead, it uses the RF field generated by the instrument NFC circuit to convert it into electrical energy, which supplies power to the circuit of the NFC card key. It receives data sent by the instrument NFC circuit and uses load modulation technology to transmit the commuting vehicle key data back to the instrument NFC circuit at the same speed. Because in this working mode, the commuting car key does not generate an RF field, but rather the commuting car card key receives the RF field generated by the NFC module of the display, it is called passive mode. In this mode, the instrument NFC circuit can detect the non-contact NFC card key and establish a connection with it.

FCC Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.