# ISD-SMG11XXL Walk Through Metal Detector
## Installation and Adjustment

# CONTENTS

**HIKVISION**
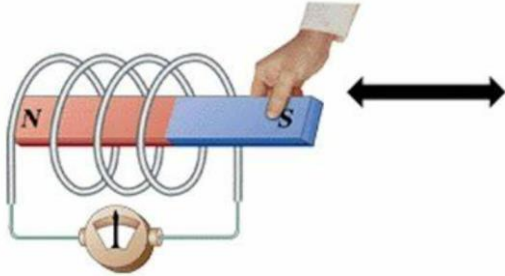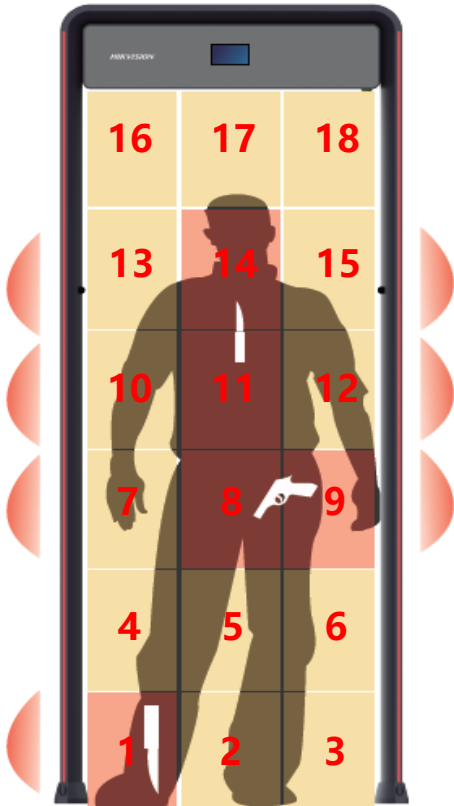
**01** **Introduction**

Appearance
Specification
Major highlight
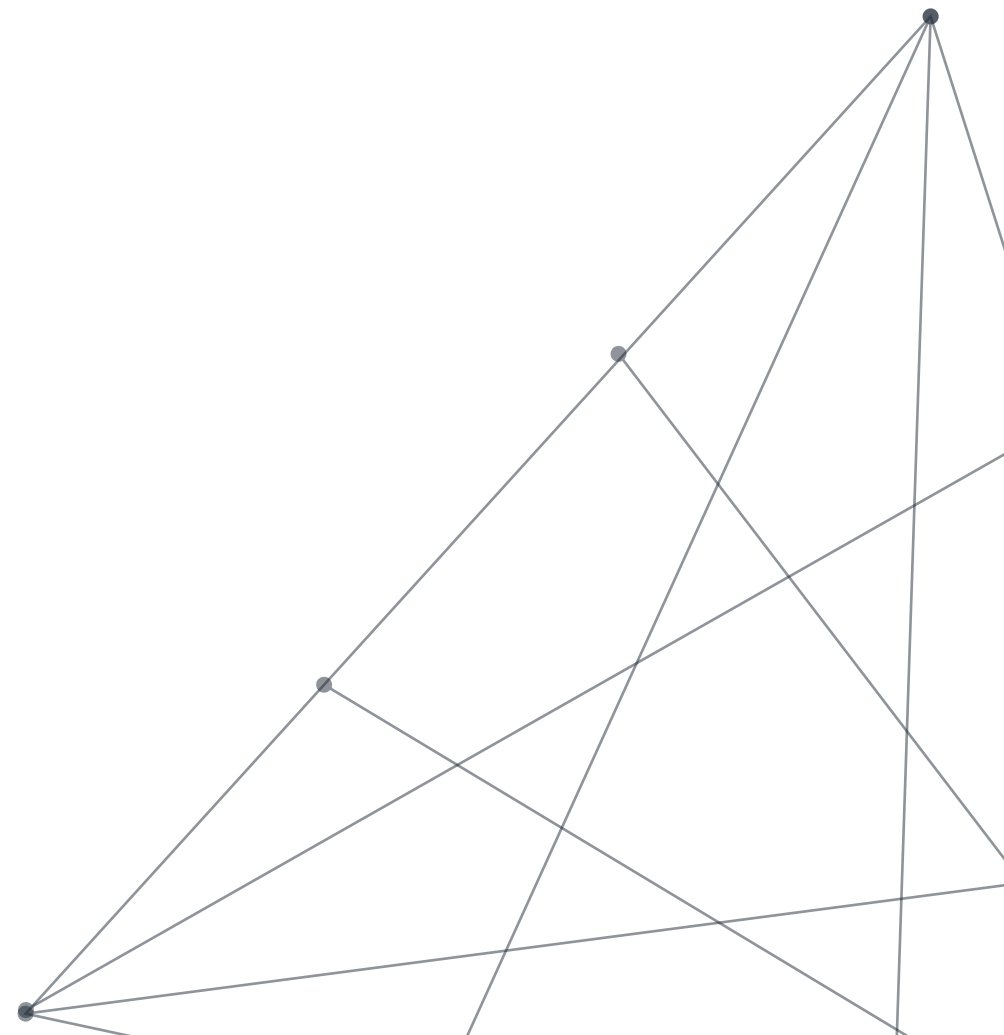
**Electromagnetic induction**
The production of electromotive force otherwise known as voltage across an electrical conductor where the magnetic field changes

| 16 | 17 | 18 |
| 13 | 14 | 15 |
| 10 | 11 | 12 |
| 7 | 8 | 9 |
| 4 | 5 | 6 |
| 1 | 2 | 3 |

1.When the **metal object** generates an **induced current** in the magnetic field, a reverse magnetic field will be generated at the same time.
2.The magnetic field will cause the magnetic field which inside the receiving coil to change, thus generating an induced current on the receiving coil.
3.The current can be detected through the hardware circuit
4.Through the change of the current, detector know whether there is a metal object through
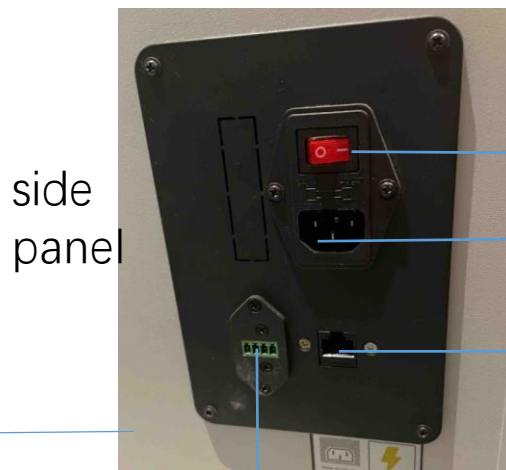
main case

Top Cover

Light Housing

Door panel

LED Light Bar

Infrared sensor

Foot Protective Cover

ISD-SMG11XXL

remote control

power cable

side panel

power switch

power in plug

network interface

2 relay alarm outputs

# Introduction-**Specification**

| Metal detection | **The smallest detected Coin-sized metals** |
|---|---|
| **Multi-Area alarm** | ISD-SMG1118L 18 zones ; ISD-SMG1112L 12 zones |
| **Modularized component** | Easy transmission and installation |
| **Alarm output** | 2 Relay alarm outputs |
| **Network interface** | RJ45 |
| **Power supply** | 100 VAC to 240 VAC, 50/60HZ |
| **Power** | < 25W |
| **Working temperature & humidity** | -20℃—55℃， 10%-95%， non-condensing |
| **Protective level** | IP41 |
| **Weight** | <75KG |
| **Overall dimension** | **(mm)2200(H)x840(W)x600(D)** |
| **Passageway dimension** | (mm)2000(H)x710(W)x500(D) |
| **Display information** | Pass through number， metal alarm number， trouble status |

ISD-SMG11XXL

# 01 Introduction- **Major highlight**

ISD-SMG1112L

L6  R6
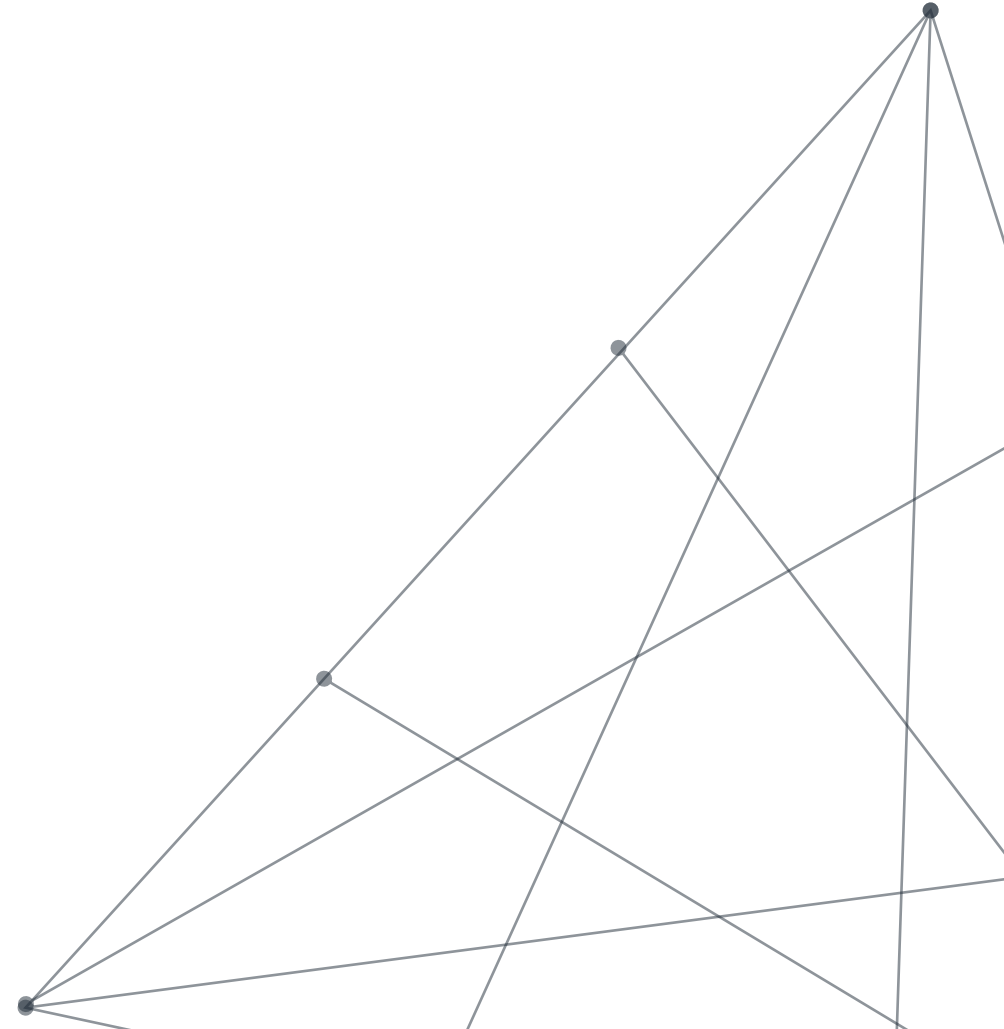L5  R5
L4  R4
L3  R3
L2  R2
L1  R1
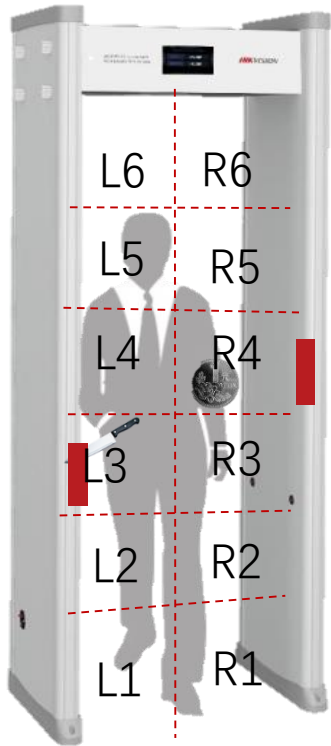
12 Zone

ISD-SMG1118L
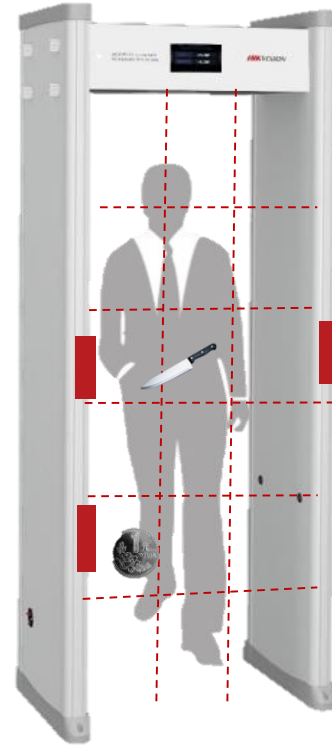
18 Zone

- **Ultra-high detection sensitivity**：Coin-sized metal can be detected

- **Multi-location detection**：To accurately determine the metal positions of the human body

- **People counting**：Pass and Warn （enter ,out ,stay , alarm）

- **Sensitivity adjustment**：0-999

- **Alarm output** : Linkage other device (turnstile…)

- **Networking**：HCP & web configuration

- **Real-time induction value：** Check surrounding disturb

- **Function：** More settings on webpage

**HIKVISION**
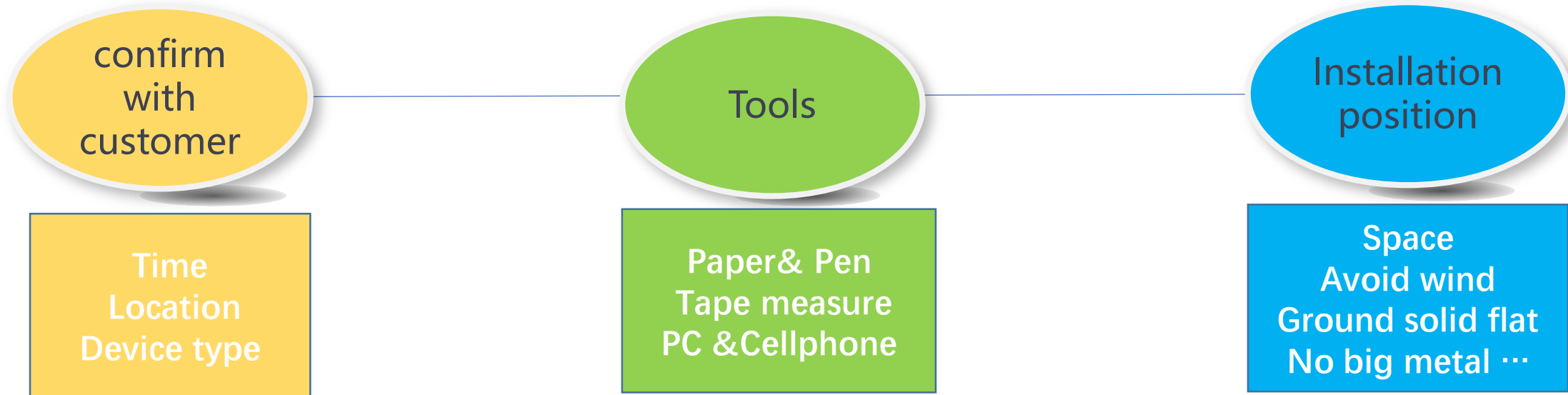
**02** **Installation**

# 02 Installation –Pre-exploration preparation

confirm with customer

Tools

Installation position

Time
Location
Device type

Paper& Pen
Tape measure
PC &Cellphone

Space
Avoid wind
Ground solid flat
No big metal …

📖 **Installation place requirements**

| Survey items | Requirement |
|---|---|
| **Ground** | The ground should be flat, with strong support, to **prevent vibration**, especially when there are vibration metal structures under the ground |
| **Environment** | Do not install in a high temperature and humid environment |
| **Power supply** | 110V-220V, 50~60HZ, single phase with 3 wire, stable ground wire, Neutral wire is forbidden instead of ground wire |
| **Stay away form windy position** | Avoid installing it around the **strong wind**. Because the door panel will **swing** slightly when the **wind blows**, it will lead to false alarms when the WTMD is working |
| **Static metal items** | Keep away from stationary or fixed large metal objects **at least 50cm** to avoid false alarm when the WTMD is working |
| **Moving metal items** | The large metal objects moving outside the detector shall be kept at least at a distance of **0.5-2m (20-79in)** from the detector to avoid false alarm. According to the size of the metal object, the **distance** between the required moving metal object and the detector may different |
| **Electromagnetic radiation and interference** | The maximum distance between the electronic interference source and the receiving coil should be maximum. The recommended minimum distance **is 0.5-4m (20-157in).** However, the actual distance should vary according to the specific situation. The Interference may be caused by **electronic control panel, radio equipment and computer, image display, high-power motor and transformer, AC wire, transistor control circuit, flash fluorescent lamp, ARC welding equipment**, etc. Connecting the power cable to a circuit that is **not connected with other large load equipment** may cause voltage shock. |
| **Side-by-side WTMD** | When installing **multiple** security gates, the **frequency should not be repeated**, and the **distance** between security gates should not be less than 0.5m |

# Installation – Bad case

① Front and rear dislocation, and horizontal distance ≥50cm



② WTMD and scanner distance≥50cm



⑤ Carpet ground not stable and easy shake



③ WTMD and metal handrail distance ≥50cm



④ WTMD and metal frame distance≥50cm
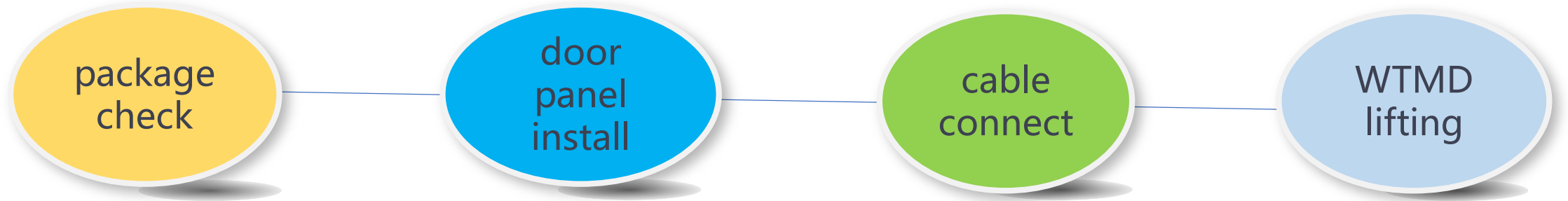


⑥ Strong wind area

# **Installation** – Steps

**02**

After the equipment arrives at the receiving place, check **the equipment list** with the acceptance personnel and other parties to **confirm the quantity and parts** of equipment.

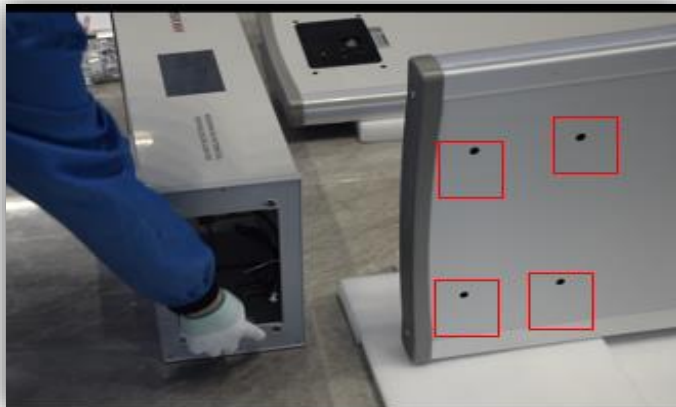package check — door panel install — cable connect — WTMD lifting

1. Check the package and open the box

2. Take all parts out

3. Left side panel→left side of main box
Right side panel→right side of main box

4. Connect the side panel and main box with screws
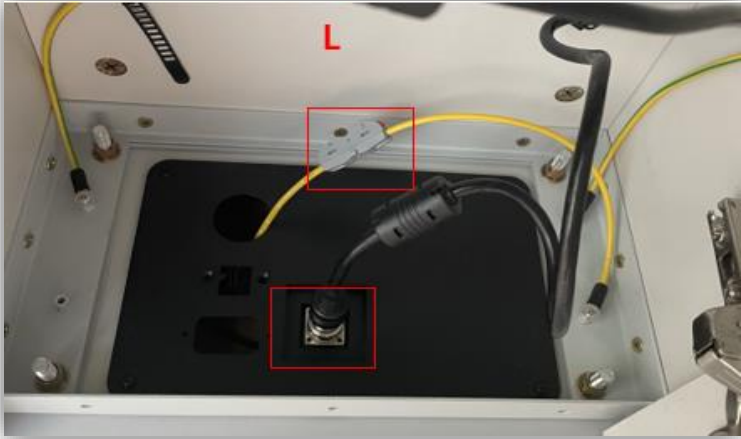
5. Tighten the screws with Allen key

6. Open the main box with key

Note：1) Tools---Knife, Allen key(metric), Diagonal pliers  2) Check the package and device panel surface before install
3) The device already adjusted in factory, so don't mix the side panel and main box when install 2 or more devices together

7. Left side cable connection
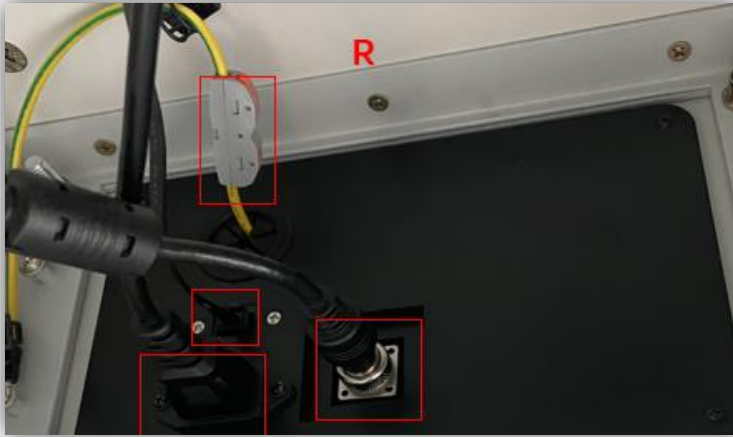


8. Right side cable connection



9. push up the device

**Left**: Ground wire, Signal wire

**Right**: Ground wire, Network wire, Power cable, Signal wire

**Power on and Device reset** →

# **Installation** – Checklist

**02**

| No | Confirmation item | Confirmation statue | Note |
|----|-------------------|---------------------|------|
| 1 | confirm the screws for combine main case and door panel tightly | | |
| 2 | Confirm the cable from main board to 2 side panel stable | | |
| 3 | Confirm whether the power cable which inside the main case is stable | | |
| 4 | Confirm whether the ground wire is stable | | |
| 5 | Confirm the IP address especially connect to internet | | |
| 6 | Confirm the frequency different if there are more than 1 WTMD | | |
| 7 | Confirm whether there is disturb iron items | | |
| 8 | Confirm whether count the number when pass through WTMD | | |
| 9 | Confirm the WTMD time | | |
| 10 | Confirm the password | | |

**HIKVISION**
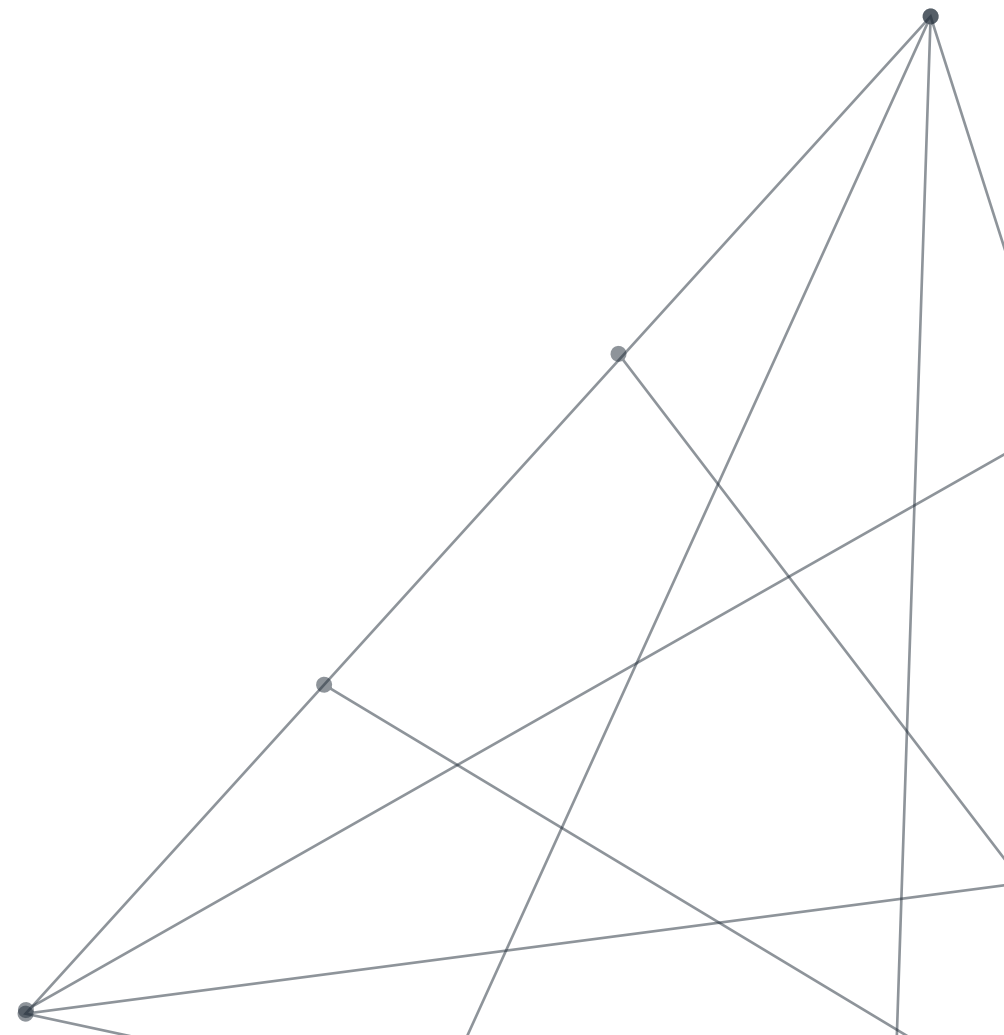
**03** **Configuration**

# Configuration –Main page

Real-time metal detection strength

Data and Time , Network

Panel connection status, Infrared sensor status, IP, Version, SN

# **Configuration–**Activate Remote control



home
button

2023.03.09 18:27

|Passed            000021

|MetalAlarm        000021

IP: 10.6.189.199      V1.1.0 221011      SN: K70687471

2023.03.09 18:27

|Passed            000021

|MetalAlarm        000021

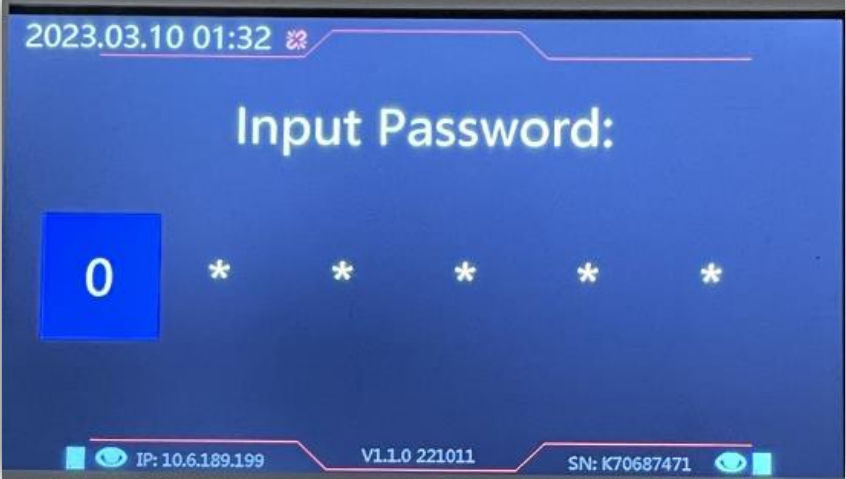IP: 10.6.189.199      V1.1.0 221011      SN: K70687471

🏳 **Match remote control with device**
**Press the home button 3 times quickly until**
**the top and bottom line turn red.** Then we
can use the remote control do the settings
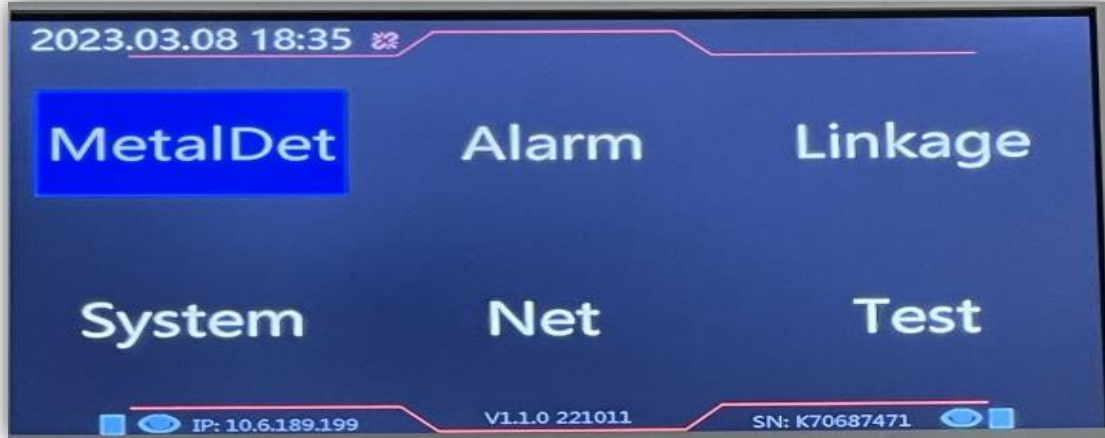
# Configuration –Input password



Default password: 000000

Menu page

Menu button

# Configuration – Metal Detect



**1. Scenes**: Different scenes have different zone sensitivity values. (quickly set)

**2. Frequency** (default 8)

1)When installing **multiple security gates**, the **frequency should not be repeated**
2)when there are some other frequency device disturb , also need try and set other frequency

**3. Zone alarm threshold value**

1.the highest sensitivity is 0 and the lowest is 999, the smaller of the number the higher the sensitivity

2.normally for **small iron items 80-120**

3.different zone can set different sensitivity（belt 、glass）

**Casting Metal**

**Turn on** : when there is metal item around the device ，the light and sound alarm will work.( **check environment disturb** )

**Turn off**: when someone pass through device, the detector will detect the metal. If nobody /nothing pass through don't detect

**Ps: Turn off . after check and adjust machine good**

**Number of zones**： 1 6 12 18

**Alarm Switch**

turn on：
turn off： even the detected metal induction value larger then alarm threshold there isn't any light or sound alarm

# **Configuration** – Linkage
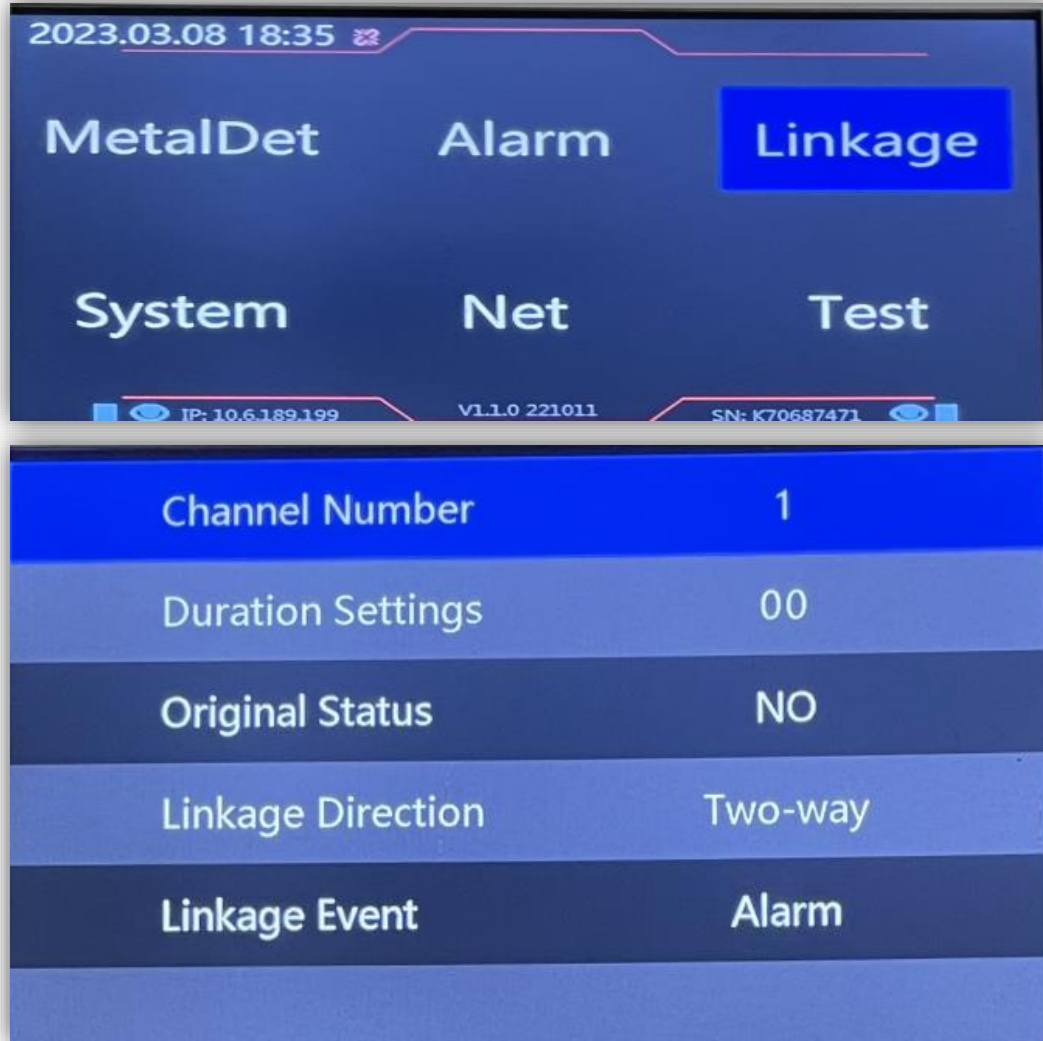


**Linkage（alarm output）**
linkage setting for link with other device , such as turnstiles , auto gate
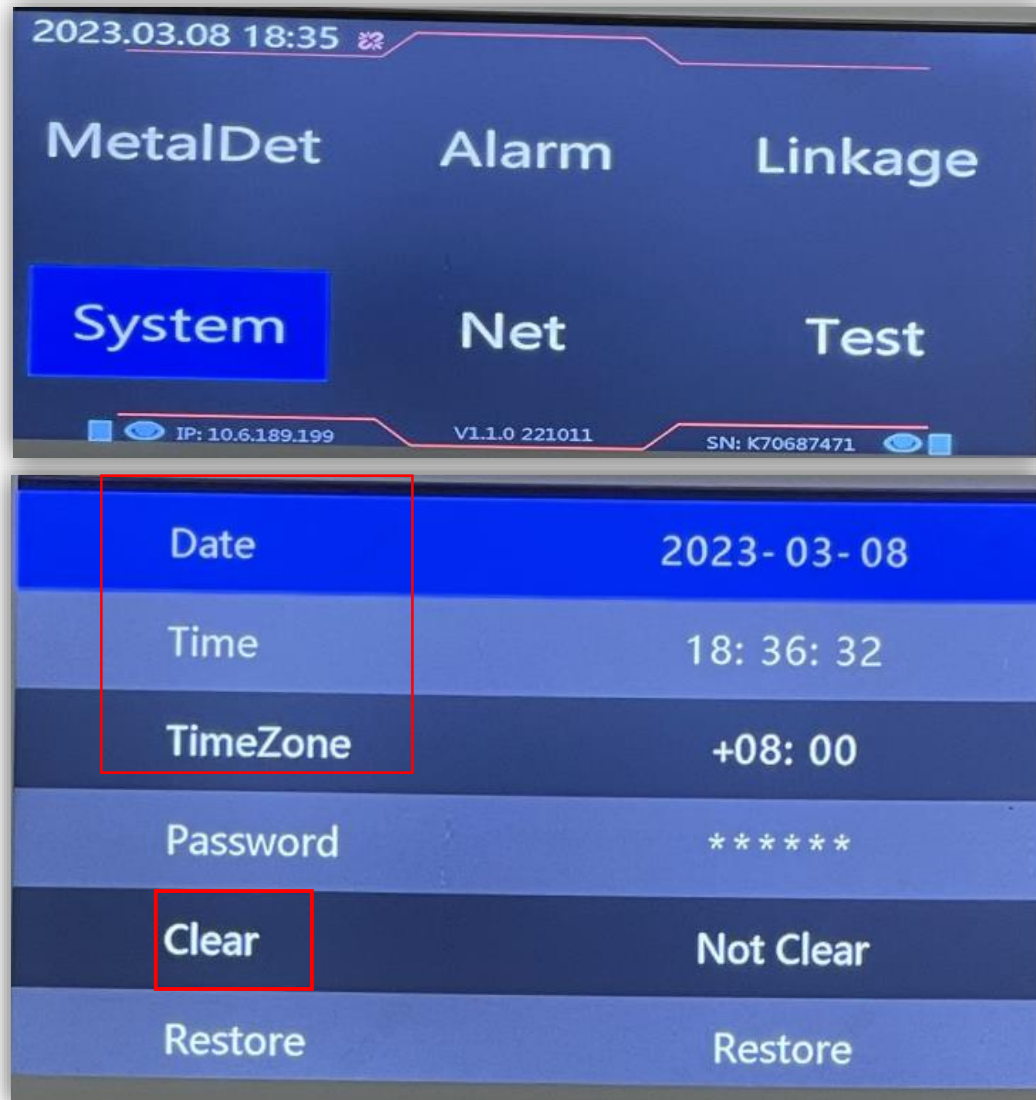
**Password**: set new password

**Clear**
1) not clear , the people and alarm counting not
2) auto clear , the people and alarm counting return to 0 when reboot machine

**Restore**: Return to factory fault settings and the counting back to 0

# 03 Configuration –Net



check IP address

change IP：SADP

Function： HCP/ Webpage setup

# Configuration –Test

**2023.03.08 18:35**

MetalDet     Alarm     Linkage

System     Net     Test

IP: 10.6.189.199     V1.1.0 221011     SN: K70687471

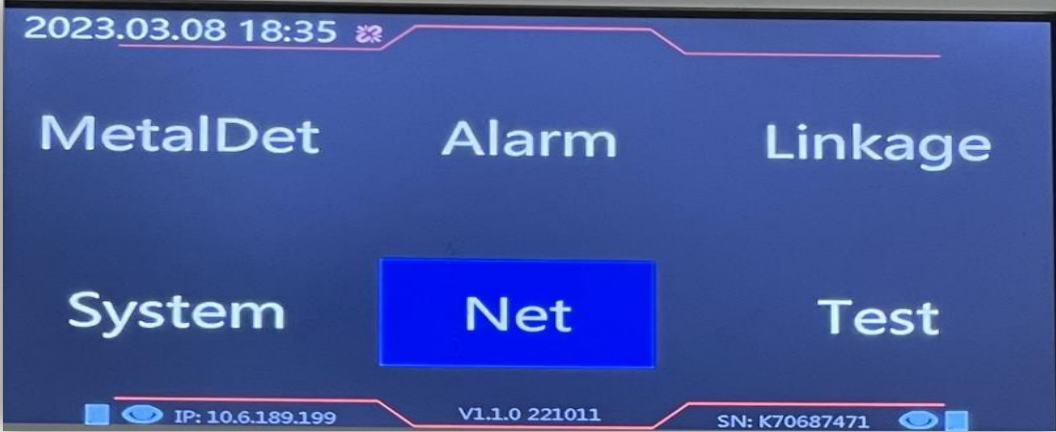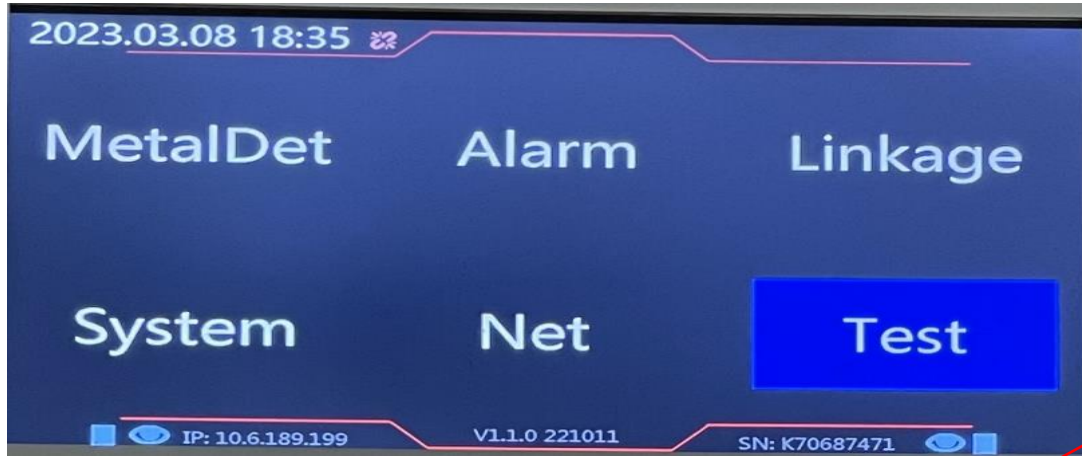| Casting Metal | Turn Off |
| Number of Zones | 12 |
| Alarm Switch | Turn On |
| Alarm Volume | Medium |
| Alarm Tone | 1 |
| Alarm Duration | 1 |

1. casting metal **turn on**
real-time metal induction value
2. casting metal **turn off**
the metal induction value of pass through gate last time

**2023.03.10 01:35**

| 019 | | 019 | 027 | | 027 |
| 325 | | 325 | 340 | | 340 |
| 246 | | 246 | 203 | | 203 |
| 211 | | 211 | 685 | | 685 |
| 047 | | 047 | 144 | | 144 |
| 164 | | 164 | 109 | | 109 |

**02520** 02520

IP: 10.6.189.199     V1.1.0 221011     SN: K70687471

the zone history largest metal induction value during this test time

**alarm threshold value** we already set in MetalDet

**02520** green number： totally (all zone)metal induction value

02520     white number： history totally (all zone )largest metal induction value during this test time

# **Configuration**–Activate Device

Device IP activation and IP configuration
Use SADP tool or webpage activate device (we can check IP in net setting or LCD main view )

**The password is what you set when you activate device and used for web login**
**And it is difference with the password we saw in LCD screen(remote control)**

← C ⚠ 不安全 | 10.6.189.199

Username: admin
Password: 
Login

Total number of online devices: | 1

Unbind   Export   Refresh   Filter 🔍

| ☑ | ID | ▲ | Device Type | | Status | | IPv4 Address | Port | | Enhanced SDK Se... | Software V... | IPv4 Gat... | HTTP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ☑ | 001 | | ISD-SMG1118L | | Active | | 10.6.189.1... | 8000 | | N/A | V1.1.0buil... | 10.6.18... | 80 |

**▌ Modify Network Parameters**

☐ Enable DHCP

☐ Enable Hik-Connect

Device Serial No.: ISD-SMG1118L202210

IP Address: 10.6.189.199

Port: 8000

Subnet Mask: 255.255.255.0

Gateway: 10.6.189.254

IPv6 Address: ::

IPv6 Gateway: ::

IPv6 Prefix Length: 0

HTTP Port: 80

Security Verification

Administrator Password: 

Modify

Forgot Password

# **Configuration –**Webpage Login



← C ⚠ 不安全 | 10.6.189.199

Username: admin
Password: ●●●●●●  ◎
[Login]

**Functional configuration** ————————————————————→

Alarm Threshold
Left 6: 160        Right 6: 160
Left 5: 160        Right 5: 160
Left 4: 160        Right 4: 160
Left 3: 160        Right 3: 160
Left 2: 160        Right 2: 160
Left 1: 160        Right 1: 160
☑Alarm Switch
☐Alarm Total Threshold: 0        (Only Support 12 Zones)
Quick Scene: 1                   (Custom:1~20, Default:21~50)
Working Frequency: 8             (0~20,0-Random)
Detection Mode: Custom Mode ▾
Casting Metal Mode: Turn Off ▾
Hydrodynamic Zone: 12 ▾
Alarm Tone: 1                    (1~10)
Alarm Volume: 6                  (0~10)
Alarm Length: 1.0s ▾
Pass Dirction: Default ▾
Break Alarm: Turn Off ▾
Random Alarm: Turn Off ▾
Random Alarm Value: 0            (10~100,0-Closed)
Alarm Output1:
0                                (0~30,0-Continue Alarm)
Normally Open ▾
Two-way ▾
Alarm Events ▾
Alarm Output2:
0                                (0~30,0-Continue Alarm)
Normally Open ▾
Two-way ▾
Alarm Events ▾
NTP Server: 255.255.255.255      <0.0.0.0>
☐Set Time: 2023-03-08 19:04:15   ☐Synchronous with Computer Time
Time Zone: UTC +08:00            (-12:00~+13:00)
☐Daylight Time
Offset Time: 60 ▾ min
Start Time: 00    First ▾ | Mon ▾ | Jan ▾
End Time: 00      First ▾ | Mon ▾ | Jan ▾
☐Timed Clear: 00:00:00
☐Reboot Clear
[Save]      [Refresh]
[Debug]
[Devreboot]   [Devclear]
[Simple Reset]  [All Reset]
[Auto Freq]   [Quick Config]

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| Alarm Threshold | |
|---|---|
| Left 6: 160 | Right 6: 160 |
| Left 5: 160 | Right 5: 160 |
| Left 4: 160 | Right 4: 160 |
| Left 3: 160 | Right 3: 160 |
| Left 2: 160 | Right 2: 160 |
| Left 1: 160 | Right 1: 160 |

☑ Alarm Switch
☐ Alarm Total Threshold: 0 (Only Support 12 Zones)
Quick Scene: 1 (Custom:1~20, Default:21~50)
Working Frequency: 8 (0~20,0-Random)
Detection Mode: Custom Mode ▼

**1. Alarm Threshold**: metal alarm threshold,  there is light and sound alarm when detected metal induction value larger then Alarm threshold

**2. Alarm Switch:** enabled**,** turn on alarm function disabled,  even the detected metal induction value larger then alarm threshold there isn't any light or sound alarm

**3. Alarm Total Threshold:** enabled, only judge whether the sum of 12 zones metal induction value larger then the alarm total threshold. (Normally used for only detect big iron items or mobile phone don't alarm scene.)

**4. Quick Scene:** Different scenes have different metal alarm threshold. (used for quickly set different scene)

**5. Working Frequency:** same frequency will have a large effect, test the frequency value one by one when there is other device disturb.

**6. Detection Mode**
 **Custom Mode**: default and same sensitivity with magnetic mode
 Magnetic Mode : a little more sensitivity to magnetic metal , such as iron
Non-magnetic Mode: a little more sensitivity to non-magnetic metal , such as copper

# **Configuration –**Parameter

Casting Metal Mode: Turn Off
Hydrodynamic Zone: 12
Alarm Tone: 1 (1~10)
Alarm Volume: 6 (0~10)
Alarm Length: 1.0s
Pass Dirction: Default
Break Alarm: Turn Off
Random Alarm: Turn Off
Random Alarm Value: 0 (10~100,0-Closed)

**7.Casting Metal Mode**
**Turn off:** when someone pass through device, the detector will detect the metal.  If nobody /nothing pass through don't detect/alarm
**Turn on:** when there is metal item around the device , the light and sound alarm will work.( **check environment disturb**)

8. **Hydrodynamic Zone**: different type different , 1,6,12,18

9. **Alarm Tone:** 1-10

10.**Alarm Volume:** silence, low, medium, high

11.**Alarm Length**: alarm duration(0.5-4)

12. **Pass Direction**：**Default：OUT---**Pass through from screen side to the other side
**Reverse**

13. **Break Alarm**：**Turn on:** If there is alarm after the last person pass through and the alarm hasn't been reset(reset in 1s) , it will still alarm when the next person follow pass through whether he/she carry metal or not.
**Turn off:**

14.**Random Alarm: Turn on:** if there are no alarms by x continue people pass through, the device generates a random alarm to remind the security people**.**
**turn off:**

15.**Random Alarm Value**: the value of 'x continue people'

# **03** **Configuration –**Parameter

Alarm Output1:
[ 0 ] (0~30,0-Continue Alarm)
[Normally Open ▾]
[Two-way ▾]
[Alarm Events ▾]
Alarm Output2:
[ 0 ] (0~30,0-Continue Alarm)
[Normally Open ▾]
[Two-way ▾]
[Alarm Events ▾]
NTP Server: [255.255.255.255] <0.0.0.0>
☐ Set Time: [2023-03-08 19:04:15] ☐ Synchronous with Computer Time
Time Zone: UTC: [+08:00] (-12:00~+13:00)
☐ Daylight Time
Offset Time: [60 ▾] min
Start Time: [00] [First ▾] [Mon ▾] [Jan ▾]
End Time: [00] [First ▾] [Mon ▾] [Jan ▾]
☐ Timed Clear: [00:00:00]
☐ Reboot Clear
[Save] [Refresh]
[Debug]
[Devreboot] [Devclear]
[Simple Reset] [All Reset]
[Auto Freq] [Quick Config]

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**16.Alarm Output** : the relay continue time, action direction and linkage direction

**17.NTP server**: network time protocol,
**18.Set Time:** set time manually
**19.Time Zone**
**20.Daylight time**
**21.Timed Clear:** you can set a time for auto clear the people and alarm counting everyday
**22.Reboot Clear:** the people and alarm counting return to 0 when reboot machine

Debug：when click，device go to test interface
device reboot
device clear：clear the people and alarm counting value
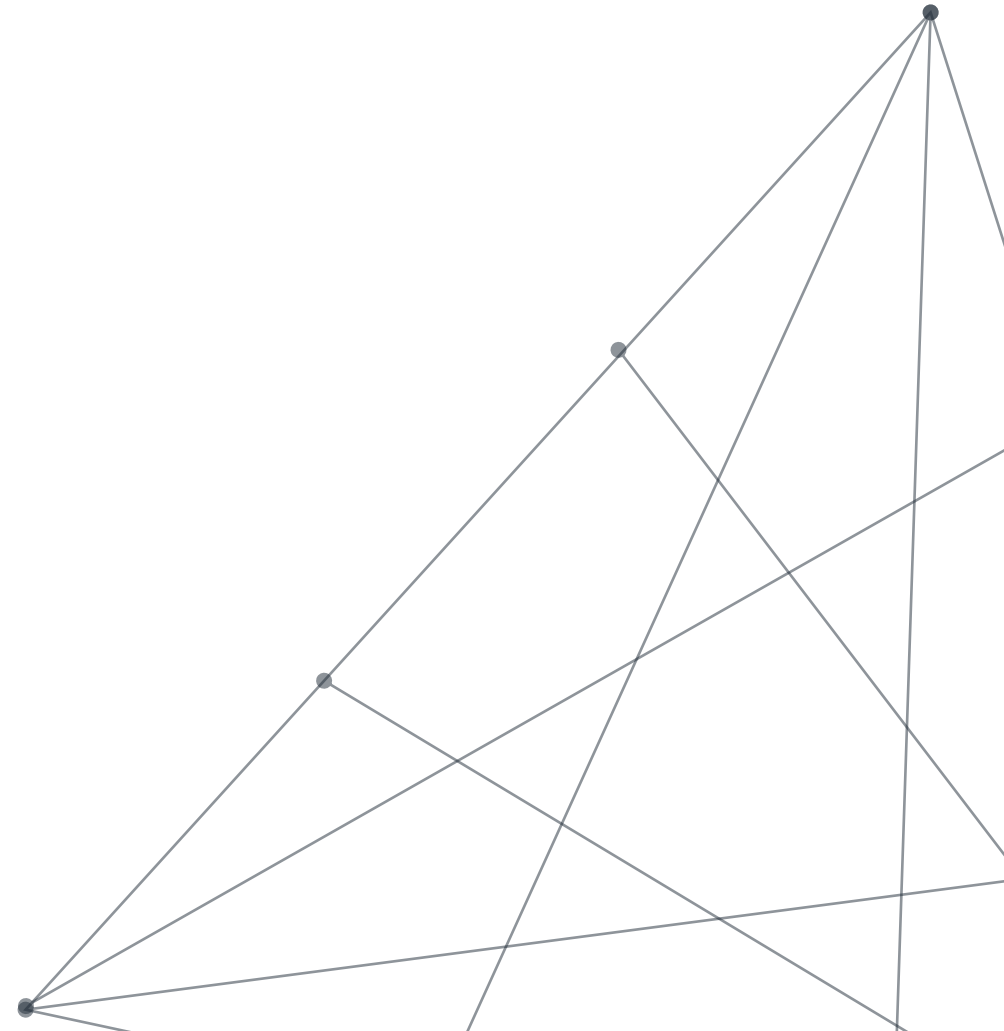simple reset：except Net settings，reset all other settings
all reset：all settings reset
auto frequency：auto set device frequency
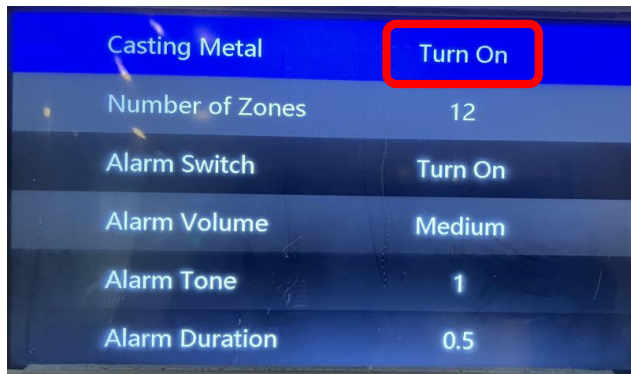Quick Config：auto set alarm threshold value a little larger then test metal induction value
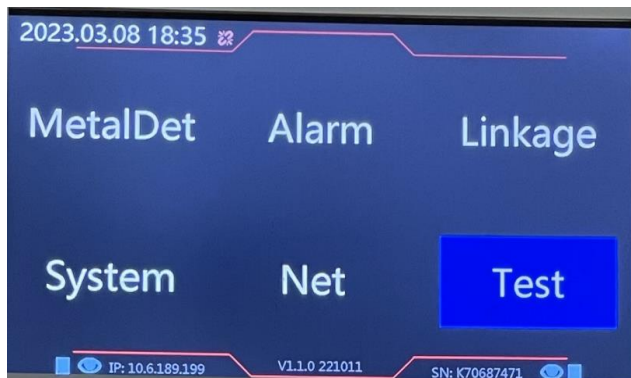
**HIKVISION**

**04**

# Adjustment

# **Adjustment** – Set Alarm threshold

1. '**Turn on**' Casting Metal



2. Go to the **Test** page , **keep 1m away from device** , waiting 5-10 minutes , and see the real time **metal induction value** of the surrounding environment





**Normally the metal induction real time value will be smaller than 20 if the surrounding environment no disturb**

# **Adjustment** – Set Alarm threshold

3. Remove the obvious disturb items or device position



If the metal induction value very large and always in the **same zone**, check that zone disturb items and **remove the disturb metal item or the device position**



4. If there is still obvious disturb induction value, you can try to change the **frequency,** find a best frequency value  (normally **default value 8**, and metal most sensitivity value 11 )

| Scenes: | 001 | Freq: | 08 |
|---------|-----|-------|-----|
| ZoneL6: | 160 | ZoneR6: | 160 |
| ZoneL5: | 160 | ZoneR5: | 160 |
| ZoneL4: | 160 | ZoneR4: | 160 |
| ZoneL3: | 160 | ZoneR3: | 160 |
| ZoneL2: | 160 | ZoneR2: | 160 |
| ZoneL1: | 160 | ZoneR1: | 160 |

# **Adjustment** —Set Alarm threshold

5. After select the most suitable frequency value and interference cannot be completely removed , pass through the device with items need to be tested. if the **tested metal items**' induction value **larger** than the **surrounding environment induction value**, which means we can adjust the **alarm threshold value** to meet that item detection requirement .

6. After confirm surrounding disturb and frequency, **turn off** casting mode and go to **test page.** people take the tested metal item pass through the device and test all zone one by one and record the value **(If need test small metal items, before you test, confirm that you take nothing metal items with you, such as watch ,glass ,belt ,shoes ,mobile phone ,ring ,earrings···)**



7. In the situation of ensuring induction value has obvious changes, we can set the alarm threshold  to slightly less than the induction value of that metal by this method we can realize the alarm of that metal item

**Flow Chart**

Turn On 'Casting Metal' after installation, then enter the 'test' interface

whether the environment value smaller then 20

**N**

whether installation environment meet requirements

**N** → adjust it according to environment requirement

**Y**

change frequency value

**Y**

turn off 'casting metal' test metal value → set suitable alarm threshold value according to 'test metal value' result
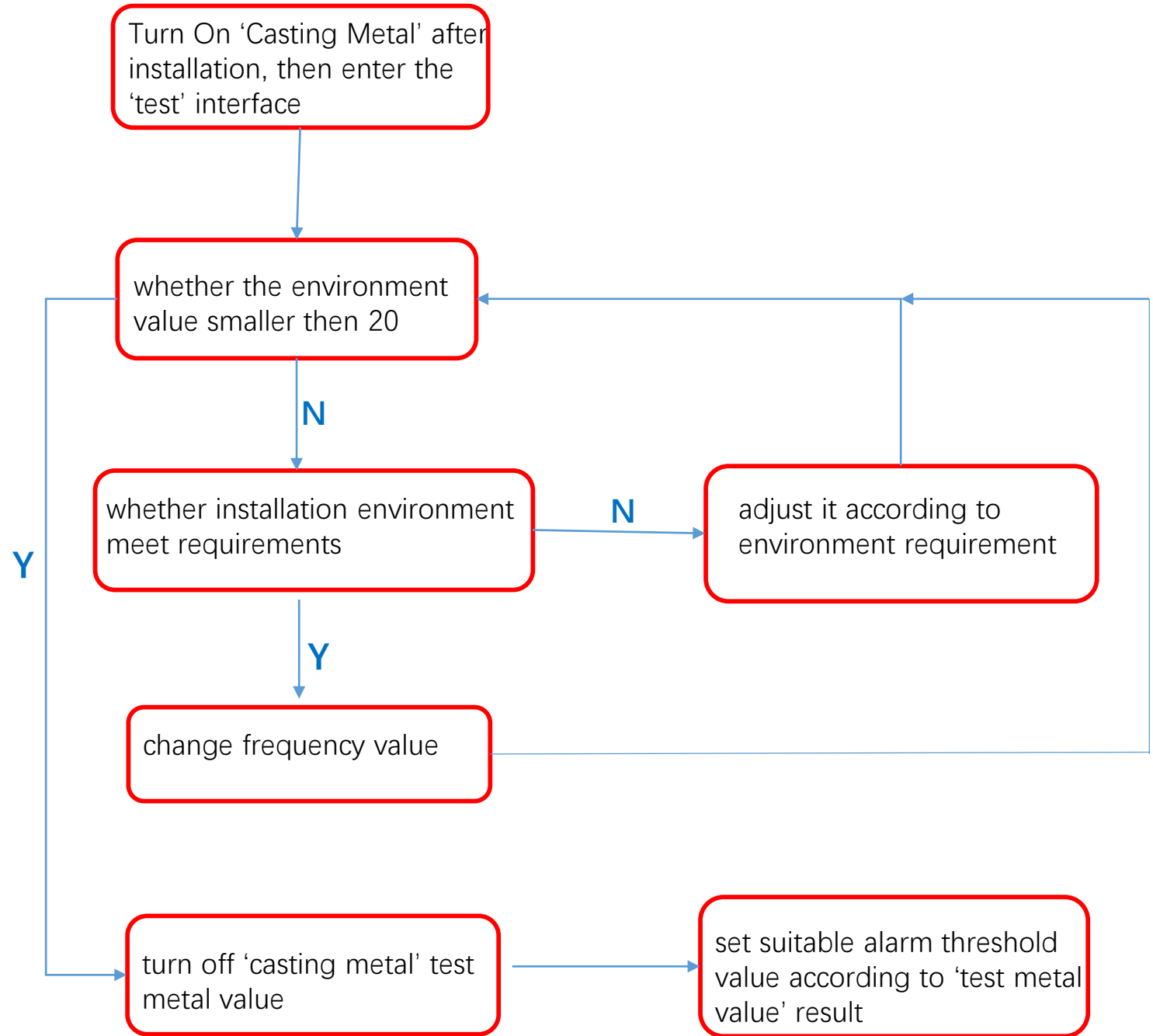
# **Scene –**Zone alarm Test

## 1. Always same zone induction value very large

1）Focus on the interference sources near that zone.

2）If there is no interference sources, add that zone alarm threshold , then test until you find the alarm threshold value without alarms

## 2. Jump to different zone or multiple zones induction value very large

1）Big interference sources----remove
2）**Frequency interference** （especially multiple metal detector together）----change Frequency value one by one

normally the metal induction real time value will be smaller than **30** if the surrounding environment no disturb

# **Scene** – Side-by-Side Metal Detector



distance better large than 50cm

1. Power on single metal detector，check the iron disturb and adjust metal detector good one by one
2. Power on all WTMD
3. In Alarm setting, **change frequency to different numbers** and test without any metal. For example, two WTMD we can set 2, 7or 8, 10, or 11, 15 or any other different numbers and test it without metal. Sometimes even we already set different numbers of frequency but still it gives alarm, please just continually change the number and test them until making sure there is no wrong alarm.
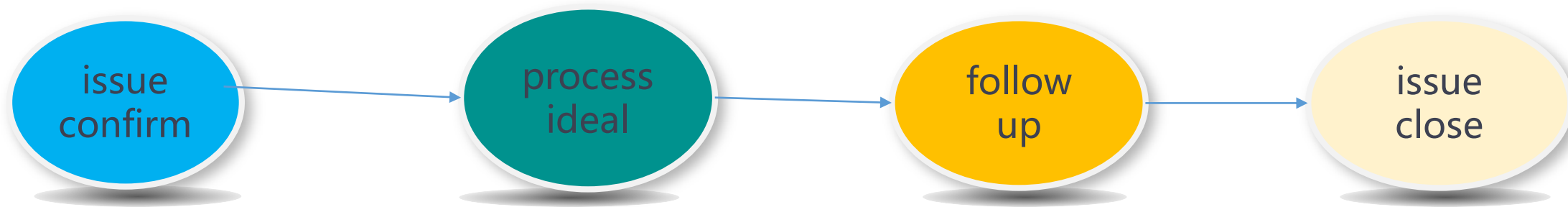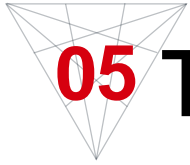
**HIKVISION**

**05** **Troubleshooting**
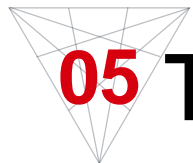
# 05 Troubleshooting-Issue Handling Process

## issue confirm → process ideal → follow up → issue close

Issue confirm： 1.**Describe** the problem objectively and specifically. It will be better take a **video** about the issue.
(error code、issue description)
2. **name plate** （device type、version、settings）
3. what do you already do and the result

Process ideal: user manual、how to、troubleshooting、FAQ (why)

Follow up： Solution confirm and feedback in time，following up the issue until the issue close（parts &how to）

Issue close： record solution case （output how to、FAQ、、、case share 、issue prevention）

## 1. How to disable the Metal Detection Function?

Go to '**alarm**' page---Alarm Switch----Turn off ', so the device will not alarm even someone take metal pass through

## 2. How to clear Person-Count to Zero?

Method 1: Go to '**system**' page---Clear---Auto clear

Method 2: Log in web. Set periodic clear or reboot clear

☐ Timed Clear: 00:00:00
☐ Reboot Clear

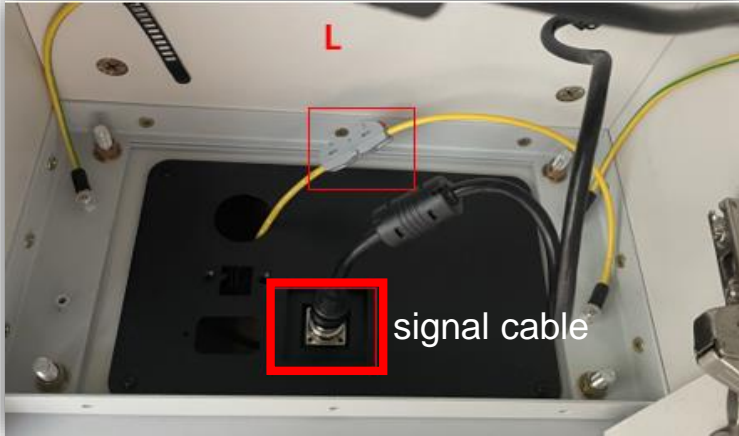## 3. How to correct the time?

Method 1: Go to '**system**' page, set data , time and time zone

Method 2: Log in web. Set

NTP Server: 255.255.255.255   <0.0.0.0>
☐ Set Time: 2023-03-08 19:04:15   ☐ Synchronous with Computer Time
Time Zone: UTC: +08:00   (-12:00~+13:00)
☐ Daylight Time
Offset Time: 60 ∨ min
Start Time: 00   First ∨ Mon ∨ Jan ∨
End Time: 00   First ∨ Mon ∨ Jan ∨

1. If **one side panel error**, **swap** left and right side **signal cable** , see if the error jump to another side . **still same panel error** , the error from **panel**. **jump to another panel error**, the error from **signal cable or the main board.**

2. **Missing alarm-**--test disturb---reduce alarm threshold---test disturb
   **Mistake alarm**---test disturb---add alarm threshold---test disturb

# THANKS