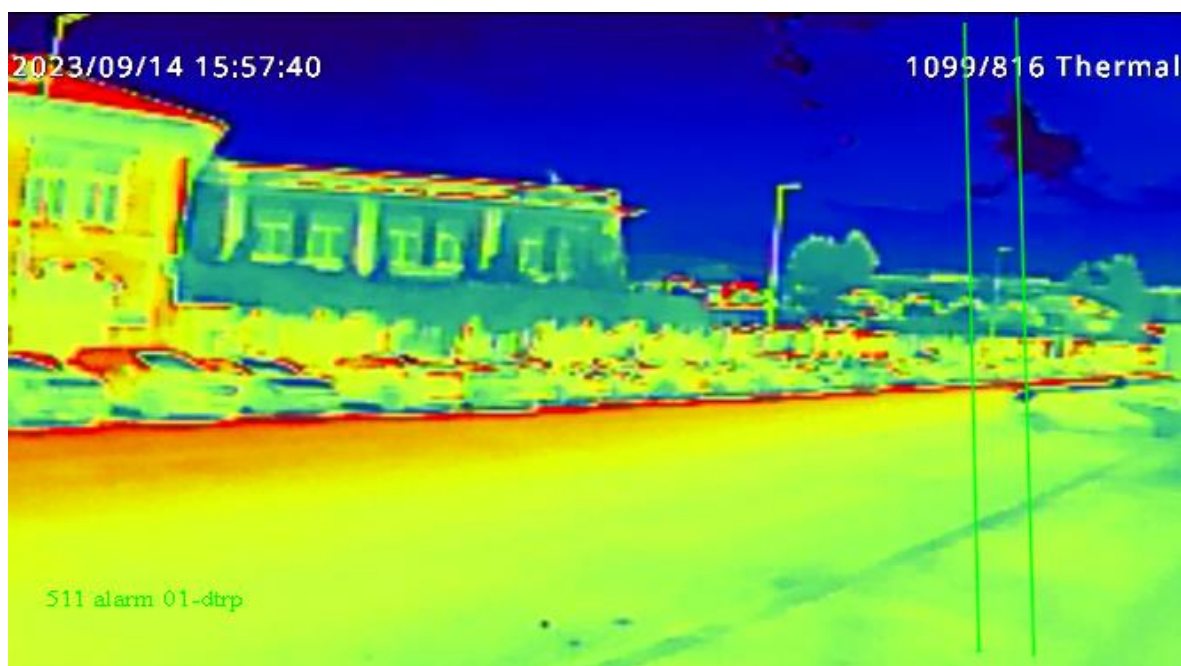


## Quick guide for thermal camera configuration





Thank you for choosing our products. Please read the configuration guide carefully before using this product. This guide will provide the correct instructions for configuring the camera in its thermal part.

- Urmet reserves the right to update the contents of this guide according to changes in product functions and to periodically improve the products described herein. Updated information may be added at any time without prior notice.
- Products may be changed according to new technology without prior notice.
- This guide is used to provide product information to customers. It is not guaranteed to be fully consistent with the final product.
- The information in the texts, tables and images in this guide is protected and may not be used without permission.
- All copyrights in this guide belong to Urmet.

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# 1 Precautions

The purpose of this Manual is to ensure that users can operate the products properly, thus avoiding danger or property damage. Please read this Manual carefully and keep it properly for future reference before using the products.

The personnel responsible for the installation and routine maintenance of the equipment must have basic skills for safe operation. Please follow the safety specifications specified in the product manual during the operation of the equipment.

Before installing the camera, check its technical specifications to ensure that the IP rating is suitable for the environment in which it will be mounted. The IP rating is only guaranteed if the product is installed correctly.

As shown below, the precautionary measures are divided into two parts: “Warning” and “Note”:

	
<b>Warning</b> Alert users to prevent the potential danger of death or serious injury	<b>Note</b> Alert users to prevent the potential danger of injury or property damage



## Warning:

- (1) Please use a power adapter that meets the requirements of SELV (Safety Extra Low Voltage) and meets the Limited Power Source specified in IEC60950-1. Refer to the list of product parameters for the specific parameters of power adapter.
- (2) Do not disassemble or modify the equipment in any way. The problems caused due to unauthorized disassembly or modification are not covered by the warranty, and the Company is not responsible for all problems arising from this, please contact the dealer or the latest service center in case the equipment is unable to work properly.
- (3) To reduce the risk of fire or electric shock, do not expose indoor products to rain or moisture.
- (4) Installation shall be performed by professional service personnel in accordance with local regulations.

- (5) User-friendly power-off equipment shall be connected in series during the installation and wiring of building.
- (6) Ensure that the connection can bear the weight at least 4 times the weight of the product before installing the equipment on a wall or ceiling.
- (7) Do not directly touch the heat-dissipating parts of the integrated machine, to prevent burns.



**Note:**

- (1) Prevent operations that may cause damage to products during the transportation and storage, such as heavy pressure, severe vibration and immersion.
- (2) Please check whether the power supply is correct before powering on the camera.
- (3) Do not directly touch the image sensor with any object, and wipe off the dirt with a lens tissue or eyeglass cloth slightly wet with alcohol if necessary, and do not give it a vigorous wipe to prevent scratching.
- (4) Please prevent pointing the lens directly at strong light (such as lighting, sunlight, etc.), otherwise, over-brightness or glare (this is not a failure of camera) may be caused, and the service life of image sensor may be affected.
- (5) Laser beam may burn the image sensor. When laser device is used, please be careful not to expose the surface of image sensor to the laser beam.
- (6) Do not place it in humid, dusty, extremely hot or cold, or strong electromagnetic radiation places.
- (7) Please ensure a sufficient distance between the installation location and surrounding electromagnetic sensitive equipment, to prevent possible electromagnetic interference.
- (8) Avoid heat accumulation and keep the surroundings of camera well ventilated.
- (9) Do not allow water or any liquid to flow into the equipment during use.
- (10) Products shall be provided with original packaging of the factory when being delivered or returned to the factory, otherwise, the damage to the network camera during transportation is not covered by the warranty.
- (11) Accessories or products may be used abnormally due to the improper replacement of battery, so users are not recommended to replace them directly; please the battery recommended by the manufacturer (suitable for the equipment with a battery) if necessary.
- (12) After logging in for the first time, be sure to change the default login password, thus avoiding loss due to weak passwords.

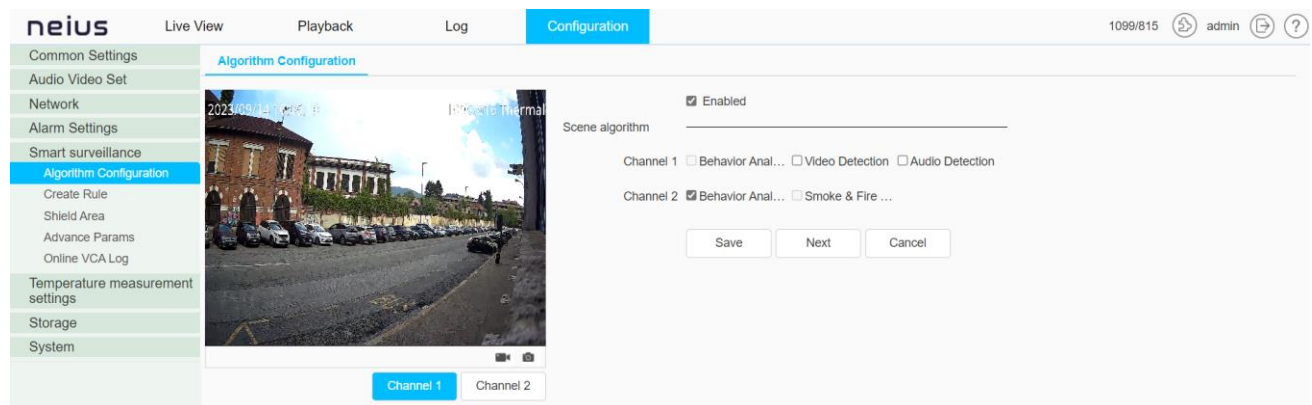
- (13) The interfaces of the equipment supporting USB, SD card or micro SD card interfaces do not support hot plugging, please power off the equipment before plugging or unplugging; otherwise, the equipment may be damaged.
- (14) The camera setting interface and menu contents of different models are not identical. Please refer to the actual interface. If you have any questions, please consult the dealer or our after-sales service.



# 2 Configuration

## 2.1 Smart surveillance

### 2.1.1 Algorithm Configuration



**Enable:** Enables or disables the intelligent analysis function of the current channel.

Scene Algorithm:

**Channel 1:** supports behaviour analysis (perimeter, tripwire, double tripwire), video diagnosis and audio anomaly detection.

**Channel 2:** supports behaviour analysis (perimeter, tripwire, double tripwire) and fire detection.

***Note:** enabling behaviour analysis on Channel 1, all Channel 2 algorithms will not be enabled; enabling behaviour analysis on Channel 2, the Channel 1 behaviour analysis algorithm cannot be enabled.*

Press on **Save** to save the current scene algorithm configuration.

Press on **Next** to save the current scene algorithm configuration and move to the next step (event parameter).

Press on **Cancel** to restore parameters from the previous configuration.

## 2.1.2 Create Rule

### Event settings

**Event Type:** smoke and fire detection.

**Detection Mode:** Designated Fire Point, Designated Smoke, Fire Point or Smoke, Fire Point and Smoke, Smoking Detection.

**Fire point detection sensitivity:** sets the sensitivity of fire point detection.

**Smoke detection sensitivity:** sets the smoke detection sensitivity.

**Display target:** check whether to display the target to be detected.

Press on **Save** to save the current configuration.

Press on **Next** to save the current configuration and move on to the next step (installation time).

Press on **Cancel** to restore parameters from the previous configuration.

### Schedule time

Users can set the time schedule according to their needs and detect alarms only by the set date and time.

**Monday/Sunday:** the event can be spread over the whole day or in different time slots for each day, with a maximum of 4 time slots set per day.

Press on **Save** to save the current configuration.

Press on **Next** to save the current configuration and move on to the next step (Linkage Mode).

Press on **Cancel** to restore parameters from the previous configuration.

## Linkage mode

Users can set the mode of receiving a notification according to their needs after an alarm situation has been triggered, such as Sound, Event Output, Record, Snapshot, etc.

The screenshot shows the 'neius' web interface in 'Configuration' mode. A sidebar on the left lists various settings categories, with 'Create Rule' highlighted. The main area displays the 'Create Rule' configuration window. At the top, it shows 'Channel No.' as '[2] 1099/816 Thermal'. Below this are tabs for 'Event Set', 'Schedule', and 'Linkage ...'. The 'Linkage ...' tab is selected, revealing four columns for configuring notifications: 'Common Link', 'Alarm output', 'Record', and 'Snapshot'. In the 'Common Link' column, 'White Light' and 'Sound' are checked, with 'Flashing' and 'Warning Vo' selected respectively. The 'Alarm output' column has '1' selected. The 'Record' column has two channels selected: '[1] 1099/816 The...' and '[2] 1099/816 The...'. The 'Snapshot' column also has the same two channels selected, with 'FTP' and 'Email' options visible below. At the bottom of the window are 'Save' and 'Cancel' buttons.

**Common Link:** can be selected White Light, flashing or steady, and Sound, 7 preset warning tones and 2 customised warning tones.

**Alarm Output:** select the output for alarm notification.

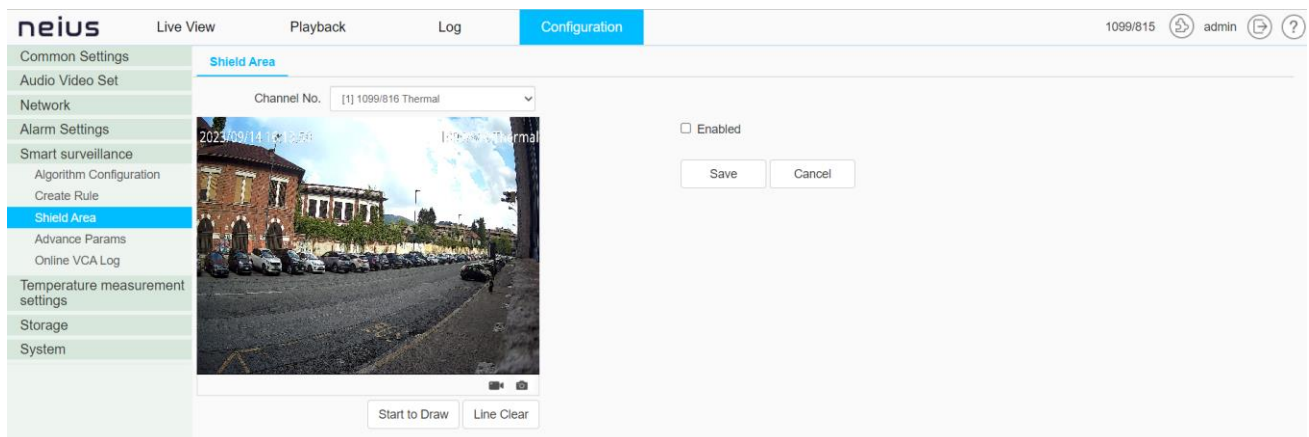
**Record:** select the channel you wish to record at the time of the alarm.

**Snapshot:** select the channel on which you wish to capture the snapshot at the time of the alarm. In addition, if you select the FTP box, you can store the captured images via an FTP server, or if you select the E-mail box, you can send them to the e-mail address you set.

Press on **Save** to save the current configuration.

Press on **Cancel** to restore parameters from the previous configuration.

## 2.1.3 Shield area



**Enabled:** Enables or disables this function.

**Start to draw:** press on the Start to draw button to draw the portion of the image to be screened and press twice to automatically connect the borders.

Press on **Line Clear** to delete the drawn area.

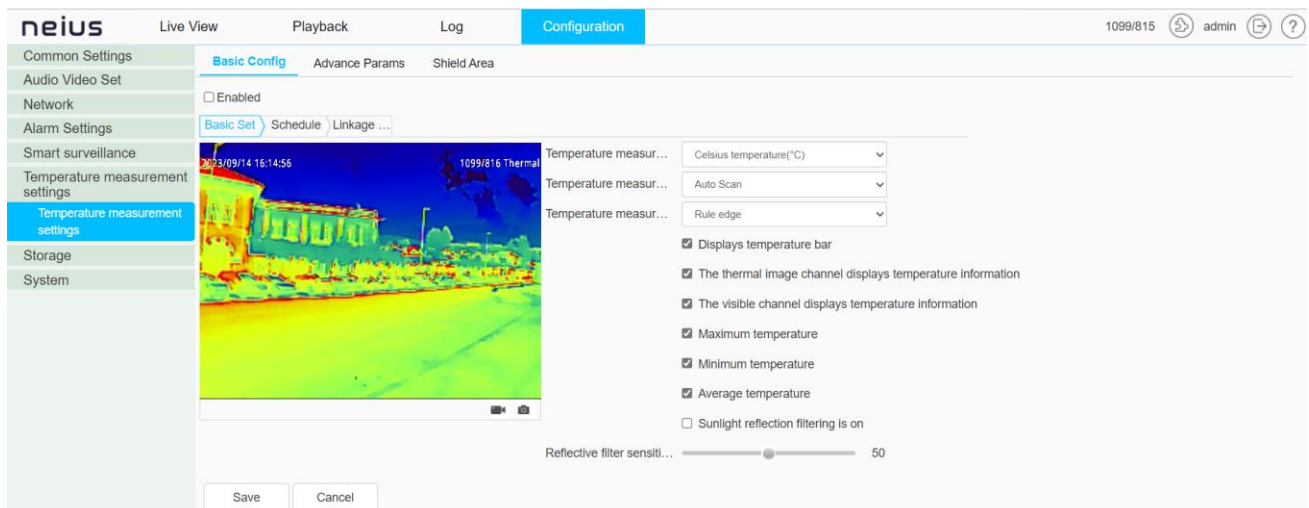
Press on **Save** to save the current configuration.

Press on **Cancel** to restore parameters from the previous configuration.

## 2.2 Temperature measurement function

### 2.2.1 Basic configuration

#### *Basic settings*



**Enable:** enables or disables the temperature measurement function and general control.

**Temperature measurement unit:** sets the unit of measurement of the displayed temperature, Celsius/Fahrenheit/Kelvin.

**Temperature measurement range:** sets the temperature range measured by the temperature measurement function.

In automatic mode, the device automatically switches the temperature measurement range based on the temperature measured at the target. This mode must be based on the current device.

**Temperature measurement information location display:** based on the selection of maximum temperature, minimum temperature and average temperature, temperature measurement information is displayed around the rule or in the upper left corner of the image and is arranged in sequence.

**Display Temperature Bar:** if this option is selected, the thermal image channel preview screen will display the temperature bar information, which corresponds to the pseudo colour mode. The arrangement of colours from top to bottom represents the temperature from high to low.

**Display temperature information in thermal imaging channel:** if selected, indicates that temperature information is displayed in the thermal image channel preview interface.

**Display temperature information in visible light channel:** select to display temperature information in the preview interface in the visible light channel.

**Maximum temperature, minimum temperature, average temperature:** check to display temperature information in the thermal image channel on the preview interface.

If there is a solar reflection phenomenon in the temperature measurement environment, it is recommended to select **Enable solar reflection filtering** and to set the level **Reflective filter sensitivity** to reduce the impact of solar reflection on temperature measurement results.

Press on **Save** to save the current configuration.

Press on **Cancel** to restore parameters from the previous configuration.

## Schedule time

The screenshot shows the 'neius' Configuration interface. The 'Configuration' tab is active, and the 'Schedule' sub-tab is selected under 'Basic Set'. The interface displays a grid for scheduling temperature measurement events for each day of the week (Mon-Sun). The grid has columns for hours from 0 to 24. A 'Delete' button and 'Delete All' button are located above the grid. At the bottom, there are 'Save' and 'Cancel' buttons.

**Monday/Sunday:** the event can be spread over the whole day or in different time slots for each day, with a maximum of 4 time slots set per day.

Press on **Save** to save the current configuration.

Press on **Cancel** to restore parameters from the previous configuration.

## Linkage mode

The screenshot shows the 'neius' web interface in 'Configuration' mode. The left sidebar lists various settings categories, with 'Temperature measurement settings' highlighted. The main content area is titled 'Linkage ...' and contains a table of settings. The table has four columns: 'Common Link', 'Alarm output', 'Record', and 'Snapshot'. The 'Common Link' column has a 'White Light' checkbox (checked) and a 'Sound' checkbox (unchecked). The 'Alarm output' column has an 'Alarm output' checkbox (unchecked) and a '1' checkbox (checked). The 'Record' column has a 'Record' checkbox (checked) and two checkboxes for recording channels: '[1] 1099/816 The...' (checked) and '[2] 1099/816 The...' (checked). The 'Snapshot' column has a 'Snapshot' checkbox (checked) and two checkboxes for snapshot channels: '[1] 1099/816 The...' (checked) and '[2] 1099/816 The...' (checked). Below the table, there are 'Save' and 'Cancel' buttons.

Common Link	Alarm output	Record	Snapshot
<input checked="" type="checkbox"/> White Light Flashing	<input type="checkbox"/> Alarm output 1	<input checked="" type="checkbox"/> Record [1] 1099/816 The... [2] 1099/816 The...	<input checked="" type="checkbox"/> Snapshot [1] 1099/816 The... [2] 1099/816 The...
<input type="checkbox"/> Sound Warning Vo			<input checked="" type="checkbox"/> FTP <input checked="" type="checkbox"/> Email

**Common Link:** can be selected White Light, flashing or steady, and Sound, 7 preset warning tones and 2 customised warning tones.

**Event Output:** select the output for alarm notification.

**Record:** select the channel you wish to record at the time of the alarm.

**Snapshot:** select the channel on which you wish to capture the snapshot at the time of the alarm. In addition, if you select the FTP box, you can store the captured images via an FTP server, or if you select the E-mail box, you can send them to the e-mail address you set.

*Description: the temperature measurement function is used for real-time temperature monitoring of controlled scenarios. When the temperature exceeds the alarm threshold, an acoustic and luminous notification signal is emitted and connection recording and acquisition is carried out.*

Press on **Save** to save the current configuration.

Press on **Cancel** to restore parameters from the previous configuration.

## 2.2.2 Advanced parameters

**Configuration Mode:** divided into normal mode and expert mode, defaulting to normal mode.

**Normal Mode:** full screen temperature measurement, the temperature measurement area cannot be set independently.

neius Live View Playback Log Configuration 1099/815 admin ?

Common Settings Audio Video Set Network Alarm Settings Smart surveillance Temperature measurement settings **Temperature measurement settings** Storage System

Basic Config **Advance Params** Shield Area

Configuration mode Ordinary Mode

2025/03/15 09:53:23 1099/815 Thermal

Full Screen

Alarm rules High temperature greater than

Emissivity 0.96

Distance(m) 2.0

Reflected temperatur... 20.0

Alarm temperature 0.0

Filter time (seconds) 0

Warning temperature ... 0.0

Filter time (seconds) 0

Tolerance Temperatur... 3.0

Temperature sudden ... Disabled

Save Cancel

**Expert Mode:** 12 rules (points, lines and areas) can be set in expert mode, and specific alarm parameters can be set for each rule.

neius Live View Playback Log Configuration 1099/815 admin ?

Common Settings Audio Video Set Network Alarm Settings Smart surveillance Temperature measurement settings **Temperature measurement settings** Storage System

Basic Config **Advance Params** Shield Area

Configuration mode Expert Mode

2025/03/15 09:53:23 1099/815 Thermal

Full Screen Start to D... Delete Area

Regional temp...

Rule ID	Type	Emissivity	Distance(m)	Reflected temper...	Set
1	dot	0.96	2.0	20.0	Set
2	dot	0.96	2.0	20.0	
3	line	0.96	2.0	20.0	
4	dot	0.96	2.0	20.0	
5	dot	0.96	2.0	20.0	
6	dot	0.96	2.0	20.0	
7	dot	0.96	2.0	20.0	
8	dot	0.96	2.0	20.0	
9	dot	0.96	2.0	20.0	
10	dot	0.96	2.0	20.0	
11	dot	0.96	2.0	20.0	
12	dot	0.96	2.0	20.0	

Save Cancel

Alert rules

☐ Event

Alert rules The average temperature is greater than

Alarm temperature 0.0

Filter time (seconds) 0

Warning temperature ... 0.0

Filter time (seconds) 0

Tolerance Temperatur... 3.0

Temperature sudden ... Disabled

Confirm Cancel

Emissivity	Distance(m)	Reflected temper...	Set
0.96	2.0	20.0	Set
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	

**Alarm rules [Regole dell'allarme]:** in normal mode, the default alarm rule is that the high temperature is greater than and does not support any other setting. Expert mode has different rules depending on the type chosen. The rules for areas are the most comprehensive and include high temperature greater than, high temperature less than, low temperature greater than, low temperature less than, medium temperature greater than, medium temperature less than, temperature difference greater than and temperature difference less than. Rules for lines include major high temperature of, minor high temperature of, major low temperature of, minor low temperature of, major mean temperature of and minor mean temperature of. Rules for points include major mean temperature and minor mean temperature.

**Emissivity:** each object corresponds to an emissivity, which has a fixed value from rough to smooth. It is also possible to query the corresponding emissivity and customise the emissivity value according to the target being monitored. The default value is 0.96, which is the emissivity of most conventional objects.

**Distance:** refers to the linear distance between the object to be measured and the camera; fill in the actual distance.

**Reflection temperature:** when a high-temperature object is present in the monitoring scene and the emissivity of the object to be measured is low but at the same time the measured object reflects (suffers) this high temperature, the reflection temperature must be set. The value of the reflection temperature must be set taking into consideration the temperature value of the object emitting this high temperature.

**Alarm temperature:** when the temperature exceeds the set alarm temperature and reaches the set filter time, the camera generates the alarm.

**Filter Time:** refers to the time when the measured temperature of the object you wish to control reaches or exceeds the alarm threshold and continues on this temperature.

**Warning Temperature:** when the temperature exceeds the set warning temperature and reaches the set filter time, the camera generates the alarm.

**Filter Time:** refers to the time during which the measured temperature of the object to be controlled reaches or exceeds the alarm threshold temperature and continues to maintain it.

**Tolerance Temperature:** to prevent temperature fluctuations from affecting alarm results, a tolerance temperature must be set. For example, if the tolerance temperature is set to "3°C" and the alarm temperature is set to "50°C", the camera will generate an alarm when the detected temperature is "50° C". The alarm will only be cancelled when the detected temperature is  $\leq 47^{\circ} \text{ C}$ .

**Temperature sudden change alarm:** select Temperature sudden rise and set Record period and Sudden change alarm value. When the maximum temperature rise within the record period reaches the sudden change alarm value, a sudden temperature change alarm is triggered.

**Regional temperature difference comparison:** Expert mode supports the area temperature difference comparison function. Four area temperature difference comparison alarms can be set. The check box on the screen represents the enable button for each rule, which takes effect when this rule is selected. Users can select two area rules and compare them according to the alarm rules in the list. For example, if a high temperature greater than is selected as an alarm rule, the threshold is 10°C. If the highest temperature detected in area 1 is 50°C and the highest temperature detected in area 2 is 30°C, then the highest temperature in area 1 is 20°C higher than the highest temperature in area 2. If the threshold of 10°C is therefore exceeded, then the camera will activate the temperature difference comparison alarm in the areas.



Regional temperature difference comparison ✕

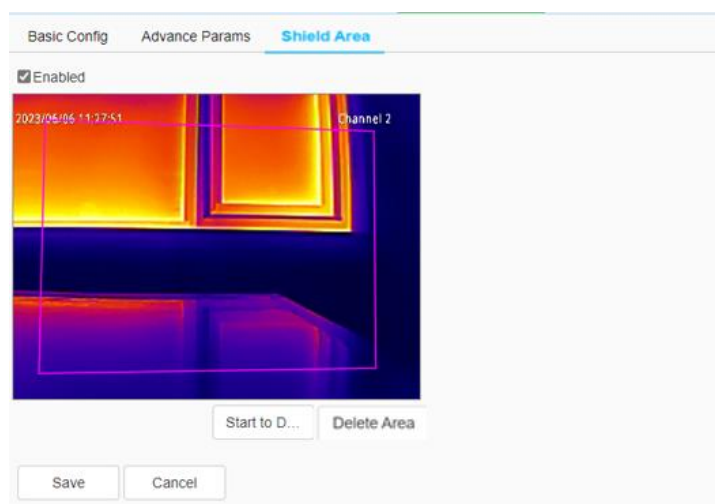
<input type="checkbox"/>	<input type="text"/>	and	<input type="text"/>	High temperature gr	<input type="text"/>	0.0
<input type="checkbox"/>	<input type="text"/>	and	<input type="text"/>	High temperature gr	<input type="text"/>	0.0
<input type="checkbox"/>	<input type="text"/>	and	<input type="text"/>	High temperature gr	<input type="text"/>	0.0
<input type="checkbox"/>	<input type="text"/>	and	<input type="text"/>	High temperature gr	<input type="text"/>	0.0

Confirm

Cancel

## 2.2.3 Shield area

The shield area function allows errors during testing to be reduced as much as possible. Activating this function allows you to screen out abnormal points within the temperature measurement rules, which if left in the detection area could affect the calculation of the overall temperature within the temperature measurement rules.



**Enabled:** enables or disables the area shielding function. It is disabled by default.

**Start Drawing:** up to 8 shielding areas can be drawn.

**Delete Area:** deletes the drawn screen area.

**Save:** saves the settings.

***Note:** if the shielding area completely covers the temperature measurement rules of points, lines and areas, the following message will be displayed 'There are complete temperature measurement rules in the shielding area, adjust shielding area or temperature measurement rules'.*

## 2.3 Example

### Verifica della temperatura di una regola di linea per alte temperature:

*Step 1:* select a rule and draw a rule line for the temperature measurement, as shown in the figure below.

The screenshot shows the 'Advance Params' configuration window. On the left, there is a thermal image labeled 'Channel 2' with a red line drawn across it. Below the image are buttons 'Start to D...' and 'Delete Area'. On the right, there is a table with columns: Rule ID, Type, Emissivity, Distance(m), Reflected temper..., and Set. The table contains 10 rows. Row 4 is selected, and the 'Set' button is highlighted in blue.

Rule ID	Type	Emissivity	Distance(m)	Reflected temper...	Set
1	Area	0.96	2.0	20.0	
2	Area	0.96	2.0	20.0	
3	Area	0.96	2.0	20.0	
4	line	0.96	2.0	20.0	Set
5	dot	0.96	2.0	20.0	
6	dot	0.96	2.0	20.0	
7	dot	0.96	2.0	20.0	
8	dot	0.96	2.0	20.0	
9	dot	0.96	2.0	20.0	
10	dot	0.96	2.0	20.0	

*Step 2:* configure alarm rules.

The screenshot shows the 'Alert rules' configuration window. On the left, there are various settings: 'Event' is checked, 'Alert rules' is set to 'High temperature generation', 'Alarm temperature' is 28, 'Filter time (seconds)' is 3, 'Warning temperature' is 26, 'Filter time (seconds)' is 2, 'Tolerance Temperature' is 3.0, 'Temperature sudden' is set to 'Temperature spikes', 'Detection cycle (seconds)' is 60, and 'Mutation value (°C)' is 5.0. On the right, there is a table with columns: Emissivity, Distance(m), Reflected temper..., and Set. The table contains 10 rows. Row 4 is selected, and the 'Set' button is highlighted in blue. A red arrow points from the 'Set' button in the table to the 'Set' button in the 'Alert rules' configuration window.

Emissivity	Distance(m)	Reflected temper...	Set
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	Set
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	
0.96	2.0	20.0	

Enable alarm (Event box) / warning temperature set to 26 degrees Celsius / generation of warning alarm after continuous exceeding 26 degrees Celsius for 2 seconds / warning temperature set to 28 degrees Celsius / generation of high temperature alarm after continuous exceeding 28 degrees Celsius for 3 seconds / when temperature falls below 25 degrees Celsius (28- 3 degrees Celsius) the high-temperature alarm is suppressed / detection cycle set to 60 seconds / generation of the sudden temperature rise of 5 degrees Celsius and generation of the corresponding alarm in the event of a sudden change in temperature according to the set value.

**DS1099-200**

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