HIKVISION

Thermographic Automation
Thermal Camera

Quick Start Guide

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About this Manual

This Manual is applicable to **Thermographic Automation Thermal Camera**.

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (http://overseas.hikvision.com/en/).

Please use this user manual under the guidance of professionals.

Trademarks Acknowledgement

 and other Hikvision's trademarks and logos are the properties of Hikvision in various jurisdictions. Other trademarks and logos mentioned below are the properties of their respective owners.

Legal Disclaimer

NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED WITH ILLEGITIMATE PURPOSES.

IN THE EVENT OF ANY CONFLICTS BETWEEN THIS MANUAL AND THE APPLICABLE LAW, THE LATER PREVAILS.

Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for Class A device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

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.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury or death may occur if any of the warnings are neglected.

Cautions: Injury or equipment damage may occur if any of the cautions are neglected.

Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

 Warnings

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.

- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket. When the product is mounted on wall or ceiling, the device shall be firmly fixed.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

⚠ **Cautions**

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- Do not touch sensor modules with fingers. If cleaning is necessary, use clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, please replace the lens cap to protect the sensor from dirt.
- Do not aim the camera at the sun or extra bright places. Blooming or smearing may occur otherwise (which is not a malfunction), and affect the endurance of sensor at the same time.
- The sensor may be burned out by a laser beam, so when any laser equipment is in using, make sure that the surface of sensor will not be exposed to the laser beam.
- Do not place the camera in extremely hot, cold (the operating temperature shall be between -20°C ~ 50°C),

dusty or damp locations, and do not expose it to high electromagnetic radiation.

- To avoid heat accumulation, good ventilation is required for operating environment.
- Keep the camera away from liquid while in use.
- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.
- Regular part replacement: a few parts (e.g. electrolytic capacitor) of the equipment shall be replaced regularly according to their average enduring time. The average time varies because of differences between operating environment and using history, so regular checking is recommended for all the users. Please contact with your dealer for more details.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

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Table of Contents

1 Appearance Description

The appearance description of the camera is shown below.

1.1 Camera Description

The Thermographic Automation Network Camera is a new type of thermal camera with function of remote Internet surveillance and video server.

With built-in high sensitivity sensor and passive infrared imaging, the camera is able to measure object's temperature from far distance at a high accuracy in bad weather. It can also detect image information under circumstances like no light, backlight.

The camera is equipped with WebServer, Internet video server, decoder, and module, which provides remote transfer, preview and configuration modification. It can be easily installed and operated without structure cabling system.

With the advantage of small size, low power consumption and easy integration, it can independently be used, or be integrated into devices like intelligent robots for equipment maintenance, failure detection, industrial process control, etc.

The Thermographic Automation Thermal Camera is able to measure object's temperature at a high accuracy in real time. With the advantage of small size, low power consumption and easy integration, it can independently be used, or be integrated into devices like intelligent

robots for equipment maintenance, failure detection, industrial process control, etc. The industries it can be applied to include electric system, industrial automation and so on.

1.2 Main Functions

- Multiple palettes modes
- Temperature measurement and temperature alarm

1.3 Apperance Description

There are two camera types, the appearance of the cameras are shown below:

1.3.1. Type I Camera Appearance

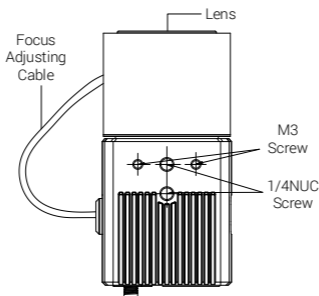The top view of the camera is shown in Figure 1-1.

Figure 1-1 Top View of the Camera

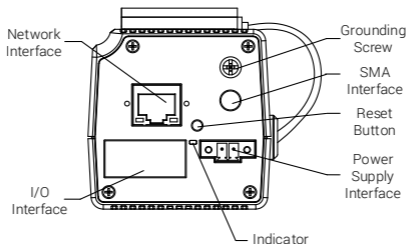The rear panel of the camera is shown in Figure 1-2:

Figure 1-2 Rear Panel

1.3.2. Type II Camera Appearance

The top view of the camera is shown in Figure 1-3.
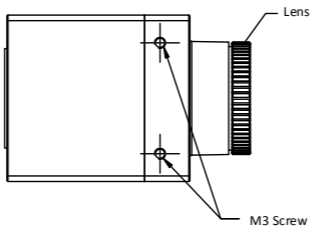
Figure 1-3 Top View of the Camera

The rear panel of the camera is shown in Figure 1-4
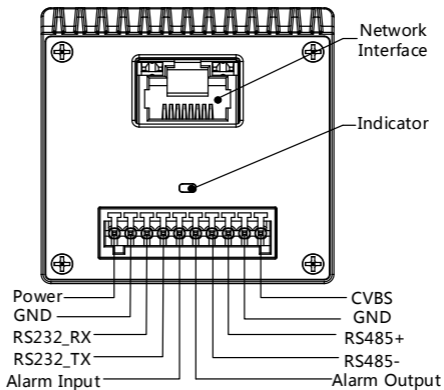
Figure 1-4 Rear Panel

2 Installation

Before you start:

- Make sure the device in the package is in good condition and all the assembly parts are included.
- The standard power supply is 12 VDC, please make sure your power supply matches your camera.
- Make sure all the related equipment is power-off during the installation.
- Check the specification for the installation environment.

2.1 Installation Specification

For fixed lens camera, the auto-focus function, and remote manual focus function are not supported. Select the proper installation site, and proper lens focal length according to the Wide Range Coverage list below:

Different targets trigger the VCA events within different range limits.

Table 2-1 Smart Function Effective Range

Lens (focal length)	2mm	3mm	4mm	7mm	15mm	25mm
VCA range (humans)	20m	30m	40	70m	150m	250m
VCA range (Vehicles)	80m	120m	200	210m	450m	750m

Temperature measurement (Object:2×2 m)	44m	66m	90m	164m	351m	585m
Temperature measurement (Object:1×1 m)	22m	33m	45m	83m	177m	295m
Fire Detection (Object:2×2 m)	108m	180m	-	412m	882m	1470m
Fire Detection (Object:1×1 m)	54m	90m	-	206m	441m	735m

There is range limit for detecting, recognizing, and identifying human/vehicle targets.

Table 2-2 Wide Range Coverage

Lens (focal length)	2mm	3mm	4mm	7mm	15mm	25mm
Detection range (Vehicles)	162m	280m	361m	631m	1353m	2255m
Detection range (Humans)	53m	91m	118m	206m	441m	735m

Recognition range (Vehicles)	41m	70m	90m	158m	338m	564m
Recognition range (Humans)	13m	23m	29m	51m	110m	184m
Identification range (Vehicles)	20m	35m	45m	79m	169m	282m
Identification range (Humans)	7m	11m	15m	26m	55m	92m

Take human as 0.5 m (width) × 1.8 m (height), and limit length is 0.75 m. The vehicle limit length is 2.3 m.

- Detect target: The target should be at least 1.5 pixels on the image.
- Recognize target: The target should be at least 6 pixels on the image.
- Identify target: The target should be at least 12 pixels on the image.

Note:

This table is for reference only, and the actual detection range may vary according to different camera settings, mounting condition, monitor and so on.

3 Setting the Network Camera over the LAN

Note:

You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.

3.1 Wiring

Please connect to the camera to the network according to the following figures
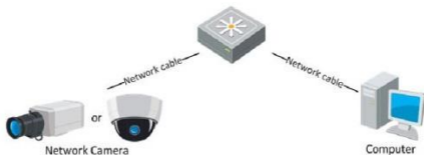

Figure 3-1 Connecting Directly

Figure 3-2 Connecting via a Switch or a Router

3.2 Activating the Camera

You are required to activate the camera first by setting a strong password for it before you can use the camera.

Activation via Web Browser, Activation via SADP, and Activation via Client Software are all supported. We will take activation via SADP software and Activation via Web Browser as examples to introduce the camera activation. Please refer to the User Manual of Network Camera for Activation via Client Software.

3.2.1. Activation via Web Browser

Steps:

1. Power on the camera, and connect the camera to the network.
2. Input the IP address into the address bar of the web browser, and click Enter to enter the activation interface.

   Notes:
   - The default IP address of the camera is 192.168.1.64.
   - For the camera enables the DHCP by default, you need to activate the camera via SADP software and search the IP address.
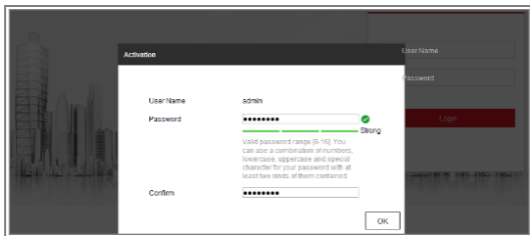
Figure 3-3 Activation Interface(Web)

1. Create a password and input the password into the password field.

> ⚠️ **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

2. Confirm the password.

3. Click **OK** to save the password and enter the live view interface.

3.2.2. Activation via SADP Software

SADP software is used for detecting the online device, activating the camera, and resetting the password.

Get the SADP software from the supplied disk or the official website, and install the SADP according to the prompts. Follow the steps to activate the camera, please refer to the User Manual of Network Camera for other two activation methods.

Steps:

1. Run the SADP software to search the online devices.

2. Check the device status from the device list, and select the inactive device.

Figure 3-4 SADP Interface

Note:

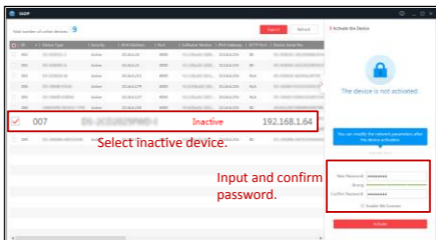The SADP software supports activating the camera in batch. Please refer to the user manual of SADP software for details.

3. Create a password and input the password in the password field, and confirm the password.

⚠ **STRONG PASSWORD RECOMMENDED**– *We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.*

4. Click **OK** to save the password.

You can check whether the activation is completed on the popup window. If activation failed, please make sure that the password meets the requirement and try again.

3.3 Modifying the IP Address

Purpose:

To view and configure the camera via LAN (Local Area Network), you need to connect the network camera in the same subnet with your PC. Then, install the SADP software or client software to search and change the IP of network camera. We will take modifying the IP Address via SADP software as an example to introduce the IP address modification.

Steps:

1. Run the SADP software.

2. Select an active device.

Please refer to Chapter 3.2 to activate the camera if the camera is inactive.

3. Change the device IP address to the same subnet with your computer by either modifying the IP address manually or checking the checkbox of Enable DHCP.

Figure 3-5 Modify the IP Address

4. Input the password to activate your IP address modification.

The batch IP address modification is supported by the SADP; please refer to the User Manual of SADP for details.

4 Accessing via Web Browser

System Requirement:

Operating System: Microsoft Windows XP SP1 and above version

CPU: 2.0 GHz or higher

RAM: 1G or higher

Display: 1024×768 resolution or higher

Web Browser: Internet Explorer 8.0 and above version, Apple Safari 5.0.2 and above version, Mozilla Firefox 5.0 and above version and Google Chrome 18 and above version

Steps:

1. Open the web browser.
2. In the browser address bar, input the IP address of the network camera, and press the **Enter** key to enter the login interface.

   Note:

   ● The default IP address is 192.168.1.64.

   ● If the camera is not activated, please activate the camera first according to Chapter 3.2.

3. Input the user name and password.

   The admin user should configure the device accounts and user/operator permissions properly. Delete the unnecessary accounts and user/operator permissions.

   Note:

The device IP address gets locked if the admin user performs 7 failed password attempts (5 attempts for the user/operator).

4. Click **Login**.

Figure 4-1 Login Interface

5. Install the plug-in before viewing the live video and managing the camera. Please follow the installation prompts to install the plug-in.

NOTE

You may have to close the web browser to finish the installation of the plug-in.

Please click here to download and install the plug-in. Close the browser when installing the plug-in.

Figure 4-2 Download Plug-in

6. Reopen the web browser after the installation of the plug-in and repeat steps 2~4 to login.

NOTE

For detailed instructions of further configuration, please refer to the user manual of network camera.

Appendix

Frequently Asked Questions (FAQ)

Device Running Error

Question:

- The device fails to start up or reboots repeatedly.

Answer:

- Examine the power supply of the positioning system and see whether it meets the requirements.
- Select the power supply as close as possible.
- Examine the power cord and see whether it meets the requirements.

Device Upgrading

Question:

Device fails to upgrade.

Answer:

- Examine if the device upgrading fails because of the poor network.
- Examine if the upgrading program matches with the device type.

Others

Question:

The device live view is vague.

Answer:

- Examine if you removed the protective film.

- Examine if the lens is dirty or not.
- Examine if any obstruction is nearby, e.g. spider web.

Question:

Live view fails with good network connection.

Answer:

- Examine if the IE plug-in is well installed. Change the Website Blocker settings if necessary.
- For cross-domain routing, enable the UPnP of device, or set manual mapping to port No. 80, 8000, or 554.
- Examine if the live view channel amount exceeds the upper limit.
- Examine the network bandwidth.

Question:

Focus fails when you test outdoor device in indoor situation.

Answer:

- Restore the device to default settings.
- Adjust the **Min. Focusing Distance** in **Configuration > Image> Display Settings > Focus**

Common Material Emissivity Reference

Material	Emissivity
Human Skin	0.98
PCB	0.91
Cement Concrete	0.95
Ceramics	0.92
Rubber	0.95
Paint	0.93
Wood	0.85
Asphalt	0.96
Brick	0.95
Sand	0.90
Soil	0.92
Cotton	0.98
Cardboard	0.90
White Paper	0.90
Water	0.96

See Far, Go Further

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