



# 2 MP Series Turret Camera

## User Manual

### User Manual

Thank you for purchasing our product. If there are any questions, or requests, do not hesitate to contact the dealer.

This manual applies to the models below:

Model
DS-2CE70D0T-ITMF

This manual may contain several technical incorrect places or printing errors, and the content is subject to change without notice. The updates will be added to the new version of this manual. We will readily improve or update the products or procedures described in the manual.

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## 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 a Class A digital 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 Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/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](http://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](http://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.

	
<b>Warnings</b> Follow these safeguards to prevent serious injury or death.	<b>Cautions</b> Follow these precautions to prevent potential injury or material damage.



### Warnings

- In the use of the device, you must be in strict compliance with the electrical safety regulations of the nation and region.
- 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. Refer to technical specifications for detailed information.
- Do not connect multiple devices to one power adapter to avoid over-heating or a fire hazard caused by overload.
- Make sure that the plug is firmly connected to the power socket.
- Make sure that the device is firmly fixed if wall mounting or ceiling mounting is adopted.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cord, and then contact the service center.
- Never attempt to disassemble the camera by unprofessional personal.



### Cautions

- 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.
- Do not aim the camera at the sun or extra bright places.
- 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 expose the device to high electromagnetic radiation or extremely hot, cold, dusty or damp environment.
- To avoid heat accumulation, good ventilation is required for the operating environment.
- Keep the camera away from liquid while in use for non-water-proof device.
- While in delivery, the camera shall be packed in its original packing, or packing of the same texture.

## Mark Description

Table 0-1 Mark Description

Mark	Description
---	DC Voltage

# 1 Introduction

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## 1.1 Main Features

- High performance CMOS sensor
- Low illumination, 0.01 Lux @ (F1.2, AGC ON), 0 Lux with IR
- IR cut filter
- OSD menu with configurable parameters
- Auto white balance
- Switchable TVI/AHD/CVI/CVBS video output
- SMART IR
- 3-axis adjustment

## 1.2 Overview

### 1.2.1 Overview of the Camera

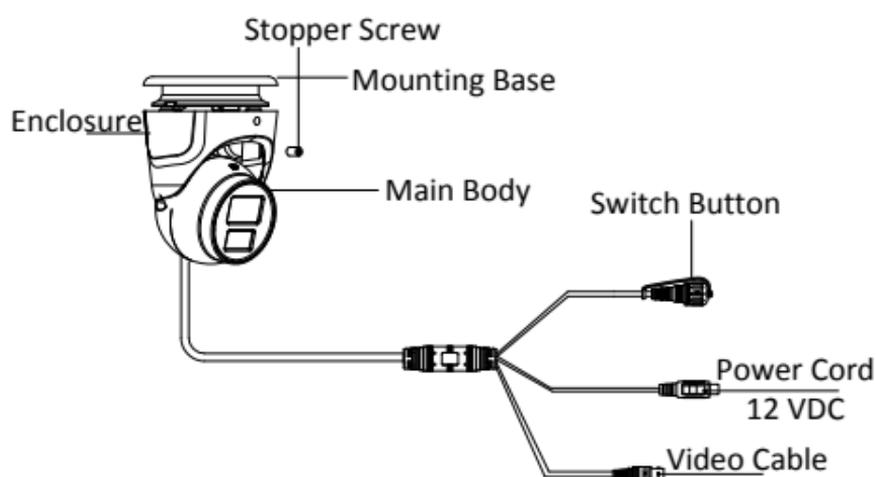


Figure 1-1 Overview of the Camera

**Note:**

Press and hold the switch button for 5 seconds to switch the video output. Four kinds of video outputs are available: TVI, AHD, CVI, and CVBS.

## 2 Installation

### Before you start:

- Make sure that the device in the package is in good condition and all the assembly parts are included.
- Make sure that all the related equipment is power-off during the installation.
- Check the specification of the products for the installation environment.
- Check whether the power supply is matched with your power output to avoid the damage.
- Make sure the wall is strong enough to withstand three times the weight of the camera and the bracket.
- If the wall is cement, insert expansion bolts before installing the camera. If the wall is wooden, use self-tapping screws to secure the camera.
- If the product does not function properly, contact your dealer or the nearest service center. DO NOT disassemble the camera for repair or maintenance by yourself.

### 2.1 Installation of the Camera

#### Steps:

1. Paste the drill template to the place where you want to install the camera.
2. Drill the screw holes and the cable hole (optional) on the ceiling according to the drill template.

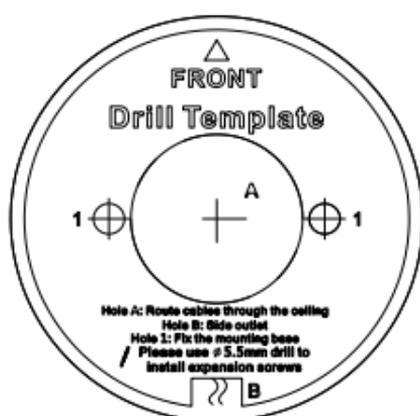


Figure 2-1 Drill Template

3. Loosen screws.
4. Disassemble the camera by rotating the camera to align the notch to the triangle mark to remove the main body.

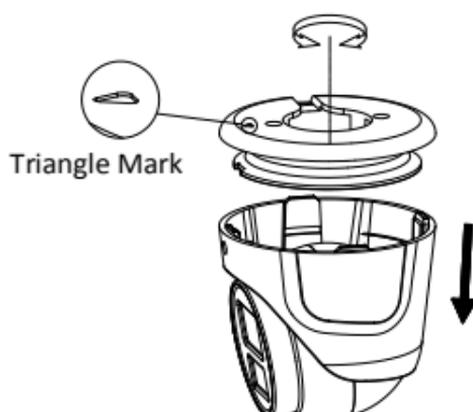


Figure 2-2 Disassemble the Camera

5. Paste the drill template to ceiling, then you have two ways to install the mounting base according to different types of ceiling.
  - 1). Install the mounting base to wooden ceiling with two PA4 × 25 screws.

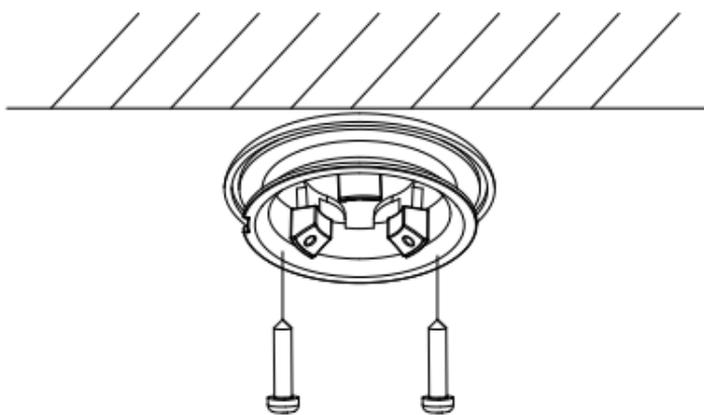


Figure 2-3 Install the Mounting Base to Wooden Ceiling  
 2). Drill holes for installing expansion bolts at first, then install the mounting base to cement ceiling with two PA4 × 25 screws.

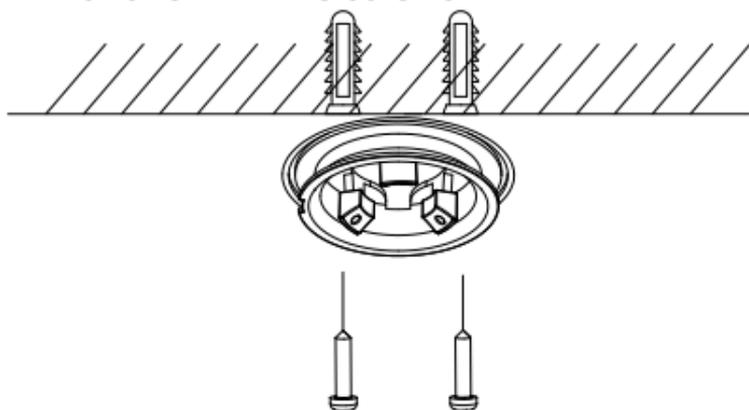


Figure 2-4 Install the Mounting Base to Cement Ceiling

**Note:**

The supplied screw package contains self-tapping screws, and expansion bolts.

- Align the screw hole on the main body to the notch, and press it.

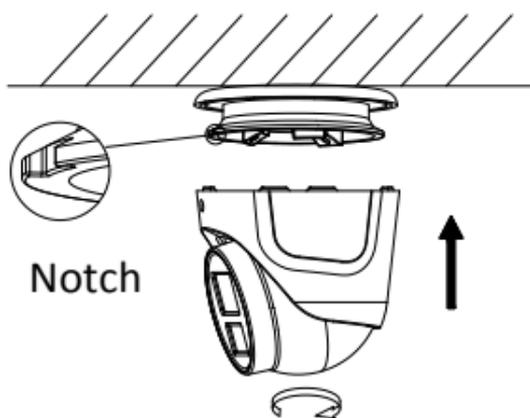


Figure 2-5 Align the screw hole to the Notch

- Connect the corresponding cables.
- Power on the camera to check whether the image on the monitor is gotten from the optimum angle. If not, adjust the camera according to the figure below to get an optimum angle.

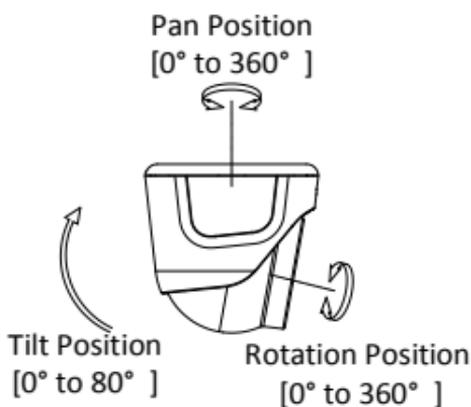


Figure 2-6 3-Axis Adjustment

- Secure the camera with a screw to finish the installation.

## 3 Menu Description

Please follow the steps below to call the menu.

**NOTE:**

The menu description part is for your reference only. It might have some differences due to the specific model that you have.

**Steps:**

1. Connect the camera with the TVI DVR, and the monitor, shown as the figure 3-1.

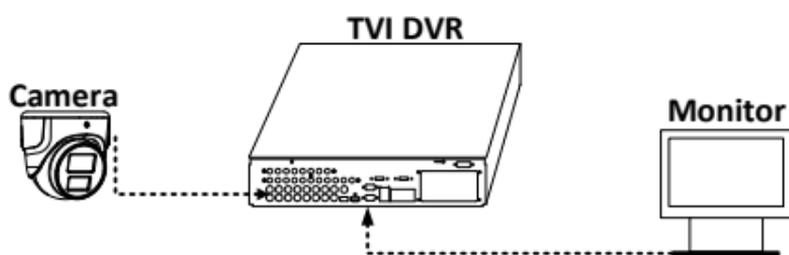


Figure 3-1 Connection

2. Power on the camera, TVI DVR, and the monitor to view the image on the monitor.
3. Click PTZ Control to enter the PTZ Control interface.
4. Call the camera menu by clicking  button, or call preset No. 95.

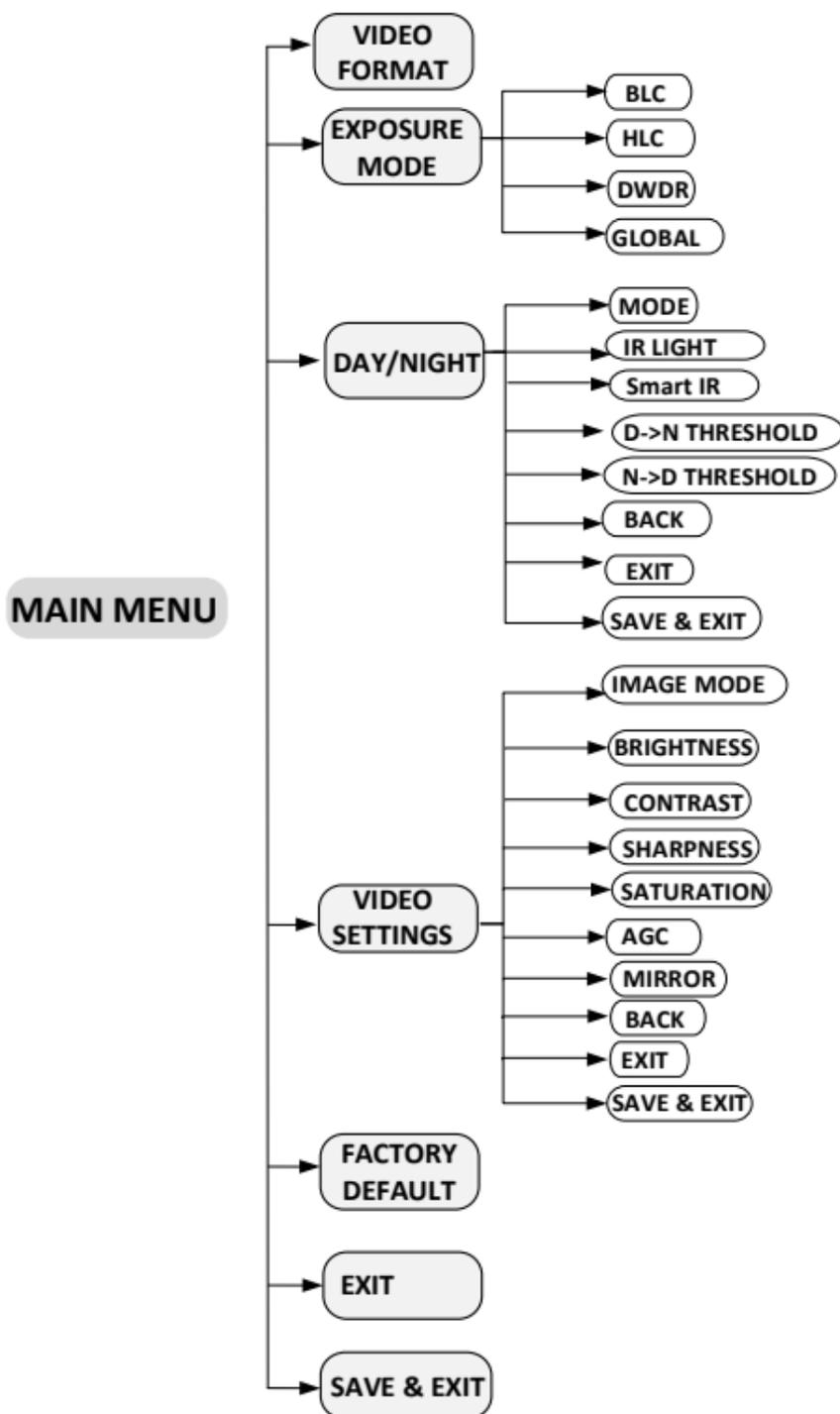


Figure 3-2 Main Menu Overview

5. Click the direction arrow to control the camera.
  - 1) Click up/down direction button to select the item.
  - 2) Click Iris + to confirm the selection.

- 3) Click left/right direction button to adjust the value of the selected item.

### 3.1 VIDEO FORMAT

You can select the video format as 2MP @ 25fps or 2MP @ 30fps.

### 3.2 EXPOSURE

#### EXPOSURE MODE

You can set the **EXPOSURE MODE** as **GLOBAL**, **BLC**, **HLC**, or **DWDR**.

- **GLOBAL**

**GLOBAL** refers to the normal exposure mode which adjusts lighting distribution, variations, and non-standard processing.

- **BLC (Backlight Compensation)**

The **BLC** (backlight compensation) function can compensate light to the object in the front to make it clear, but this causes the over-exposure of the background where the light is strong.

- **HLC (Highlight Compensation)**

**HLC** stands for highlight compensation. The camera detects the strong spots (the over-exposure portion of image), then reduce the brightness of the strong spots to improve the overall images.

- **DWDR (Digital Wide Dynamic Range)**

Digital wide dynamic range gives the camera the ability to view dark areas of the given image as well as extremely lighted portions of the image, or areas of high contrast.

### 3.3 DAY/NIGHT

**COLOR**, **B/W** (Black/White), and **AUTO** are selectable for DAY/NIGHT switches.

#### **COLOR**

The image is colored in day mode all the time.

#### **B/W**

The image is black and white all the time, and it is better to turn the **IR LIGHT** on in poor light conditions.

- **IR LIGHT**

You can turn on/off the **IR LIGHT** to meet the requirements of different circumstances.

- **SMART IR**

The **Smart IR** function is used to adjust the light to its most suitable intensity, and prevent the image from over exposure. The **SMART IR** value can be adjusted from 0 to 3. The greater the value is, the more obvious effects are.

#### **AUTO**

You can turn on/off the **IR LIGHT**, and set the value of **SMART IR** in this menu.

DAY NIGHT	
MODE	◀ AUTO ▶
IR LIGHT	◀ ON ▶
SMART IR	◀ 2 ▶
D-N THRESHOLD	◀ 2 ▶
N-D THRESHOLD	◀ 7 ▶
BACK	↵
EXIT	↵
SAVE&EXIT	↵

Figure 3-3 DAY/NIGHT

- **IR LIGHT**

You can turn on/off the infrared to meet the requirements of different circumstances.

- **SMART IR**

The **Smart IR** function is used to adjust the light to its most suitable intensity, and prevent the image from over exposure. The **SMART IR** value can be adjusted from 0 to 3. The greater the value is, the more obvious effects are.

- **D→N THRESHOLD (Day to Night Threshold)**

Day to Night Threshold is used to control the sensitivity of switching the day mode to the night mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

- **N→D THRESHOLD (Night to Day Threshold)**

Night to Day Threshold is used to control the sensitivity of switching the night mode to the day mode. You can set the value from 1 to 9. The larger the value is, the more sensitive the camera is.

### 3.4 VIDEO SETTINGS

Move the cursor to **VIDEO SETTINGS** and click Iris+ to enter the submenu. **IMAGE MODE, BRIGHTNESS, CONTRAST, SHARPNESS, SATURATION, AGC,** and **MIRROR** are adjustable.

VIDEO SETTINGS	
IMAGE MODE	◀ STD ▶
BRIGHTNESS	◀ 5 ▶
CONTRAST	◀ 5 ▶
SHARPNESS	◀ 5 ▶
SATURATION	◀ 5 ▶
AGC	◀ HIGH ▶
MIRROR	◀ OFF ▶
BACK	↵
EXIT	↵
SAVE & EXIT	↵

Figure 3-4 VIDEO SETTINGS

#### IMAGE MODE

**IMAGE MODE** is used to adjust the image saturation, and you can set it as **STD** (Standard), or **HIGH-SAT** (High Saturation).

#### BRIGHTNESS

Brightness refers to the brightness of the image. You can set the brightness value from 1 to 9 to darken or brighten the image. The greater the value is, the brighter the image is.

## **CONTRAST**

This feature enhances the difference in color and light between parts of an image. You can set the **CONTRAST** value from 1 to 9.

## **SHARPNESS**

Sharpness determines the amount of detail an imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 9.

## **SATURATION**

Adjust this feature to change the saturation of the color. The value ranges from 1 to 9.

## **AGC (Auto Gain Control)**

It optimizes the clarity of the image in poor light conditions. The **AGC** level can be set as **HIGH**, **MEDIUM**, or **LOW**.

### **Note:**

The noise will be amplified when setting the AGC level.

## **MIRROR**

**OFF**, **H**, **V**, and **HV** are selectable for mirror.

**OFF**: The mirror function is disabled.

**H**: The image flips 180° horizontally.

**V**: The image flips 180° vertically.

**HV**: The image flips 180° both horizontally and vertically.

## **3.5 FACTORY DEFAULT**

Reset all the settings to the factory default.

## **3.6 EXIT**

Move the cursor to **EXIT** and click Iris+ to exit the menu.

## **3.7 SAVE & EXIT**

Move the cursor to **SAVE & EXIT** and click Iris+ to save the settings, and exit the menu.