HIKVISION

TURBO HD
D0T Series Turret Camera

User Manual

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, 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.

Warning

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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**

● 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 senor modules with fingers.
● Do not place the camera in extremely hot, cold (the operating temperature shall be -40°C to 60°C), dusty or damp locations, and do not expose it to high electromagnetic radiation.
● 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

1.1 Product Features

The main features are as follows:
- High performance CMOS sensor
- IR cut filter with auto switch
- OSD menu with configurable parameters
- Auto white balance
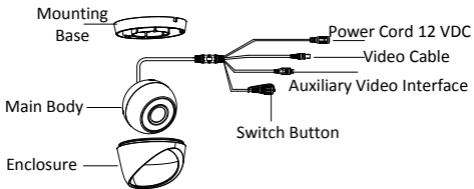- SMART IR mode
- 3-axis adjustment

1.2 Overview

Figure 1-1 Overview of the Camera

Note:
1) 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) The Auxiliary Video Interface is for the professional personnel debugging or maintenance.

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 required output to avoid damage.
- Make sure the wall is strong enough to withstand three times the weight of the camera, and the mount.
- If the wall is cement, insert expansion screws before installing the camera. If the wall is wooden, use self-tapping screw 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 Ceiling Mounting

Steps:
1. Disassemble the camera.
   1) Rotate the camera to align the notch to the round mark.
   2) Pry the mounting base to remove the enclosure by using a tool, e.g., a coin.
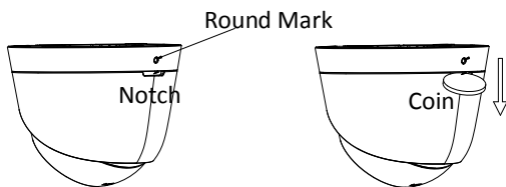

Figure 2-1 Disassemble the Camera

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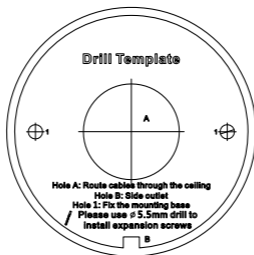3. Drill the screw holes, and the cable hole (optional) on the ceiling according to the drill template.

Figure 2-2 The Drill Template

Note:
Drill the cable hole, when adopting the ceiling outlet to route the cable.

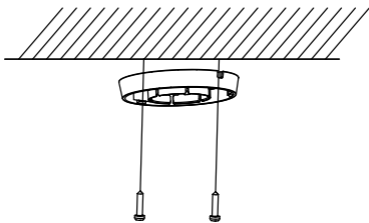4. Attach the mounting base to the ceiling, and secure it with supplied screws.

Figure 2-3 Attach the Mounting Base to Ceiling

Note:
- The supplied screw package contains self-tapping screws, and expansion bolts.
- For cement wall/ceiling, expansion bolts are required to install the camera. For wooden wall/ceiling, self-tapping screws are required.
5. Route the cables through the cable hole, or the side opening.
6. Put the main body back to the enclosure.
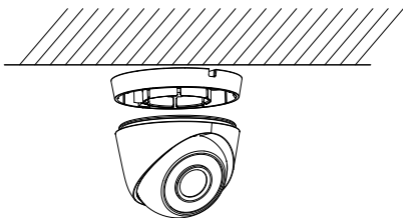7. Align the camera with the mounting base, and secure the camera on it.

Figure 2-4 Secure the Camera on the Mounting Base

8. Connect the corresponding cables.
9. 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.
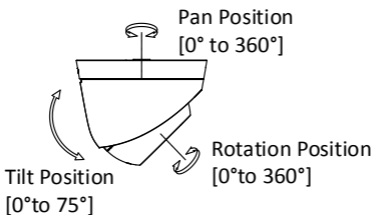

Pan Position
[0° to 360°]

Rotation Position
[0°to 360°]

Tilt Position
[0°to 75°]

Figure 2-5 3-axis Adjustment

1). Hold the camera body and rotate the enclosure to adjust the pan position [0° to 360°].
2). Move the camera body up and down to adjust the tilt position [0° to 75°].
3). Rotate the camera body to adjust the rotation position [0° to 360°].

2.2 Wall Mounting

Before you start:
You need to purchase a wall mount in advance.
Steps:
1. Drill screw holes on the wall according to the holes of the mount.
2. Install the mount to the wall by aligning the four screw holes of the mount with expansion screws on the wall.
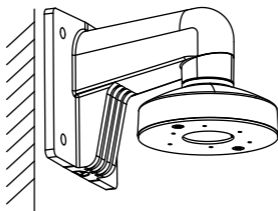
3. Secure the mount on the wall.

Figure 2-6 Secure the Mount on the Wall

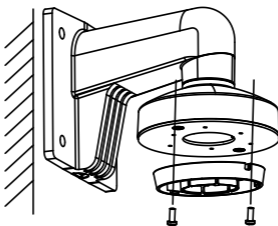4. Install the mounting base of the camera to the mount, and secure them with two M4 screws.

Figure 2-7 Install the Mounting Base to the Mount

5. Route the cables through the mount.
6. Repeat steps 6 to 9 of *2.1 Ceiling Mounting* to finish the installation.

3 Menu Description

Follow the steps below to call the menu.
Note:
The actual display may vary with your camera model.
Steps:
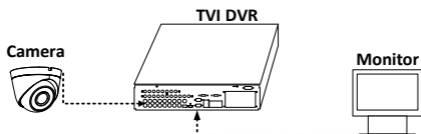1. Connect the camera with the TVI DVR, and the monitor, shown as the figure 3-1.

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 目 button, or call the preset No. 95.
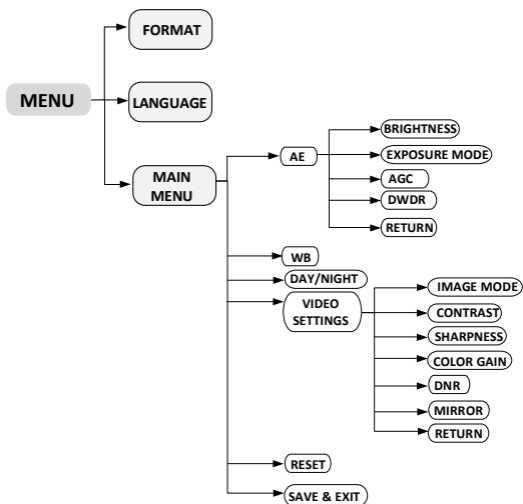
Figure 3-2 Main Menu Overview

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 FORMAT

You can select the video format to 1080P@25fps, 1080P@30fps.

3.2 LANGUAGE

English is available.

3.3 MAIN MENU

AE (Auto Exposure)

You can adjust **BRIGHTNESS**, **EXPOSURE MODE**, **AGC**, **DWDR** in this section.

● **BRIGHTNESS**

Brightness refers to the brightness of the image. The higher the value is, and more brighter the image is.

● **EXPOSURE MODE**

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

➢ **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 overexposure 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.

● **AGC (Auto Gain Control)**

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

Note:
The noise will be amplified when the **AGC** is on.

● **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.

WB (White Balance)

White balance, the white rendition function of the camera, is to adjust the color temperature according to the environment. It can remove unrealistic color casts in the image. You can set **WB** mode to **AUTO** (**ATW**), or **MANUAL** (**MWB**).

● **AUTO**

Under **AUTO** mode, white balance adjusts automatically according to the color temperature of the scene illumination.

● **MANUAL**

You can set the **R-GAIN**/**B-GAIN** value to adjust the shades of red/blue color of the image.
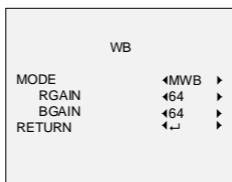
```
                WB

MODE              ◄MWB  ►
   RGAIN          ◄64    ►
   BGAIN          ◄64    ►
RETURN            ◄↵     ►
```

Figure 3-1 WB

DAY/NIGHT

You can select the **DAY/NIGHT** as **B/W, SMART**, or **COLOR**.

● **B/W**

The image is black and white all the time.

● **SMART**

SMART refers to Smart IR. The function is used to adjust the light to its most suitable intensity, and prevent the image from overexposure.
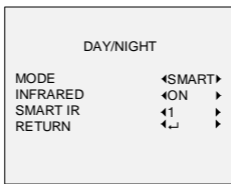
```
            DAY/NIGHT

MODE            ◀SMART▶
INFRARED        ◀ON    ▶
SMART IR        ◀1     ▶
RETURN          ◀↵     ▶
```

Figure 3-2 DAY/NIGHT

● **COLOR**

The image is colorful in day mode all the time.

VIDEO SETTINGS

Move the cursor to **VIDEO SETTINGS** and click Iris+ to enter the submenu. **IMAGE MODE**, **CONTRAST**, **SHARPNESS**, **COLOR GAIN**, **DNR,** and **MIRROR** are adjustable.
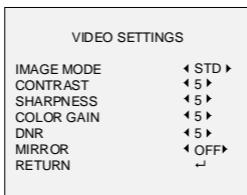
```
        VIDEO SETTINGS

IMAGE MODE      ◀ STD ▶
CONTRAST        ◀ 5 ▶
SHARPNESS       ◀ 5 ▶
COLOR GAIN      ◀ 5 ▶
DNR             ◀ 5 ▶
MIRROR          ◀ OFF▶
RETURN          ↵
```

Figure 3-3 VIDEO SETTINGS

● **IMAGE MODE**

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

● **CONTRAST**

This feature enhances the difference in color and light between parts of an image. You can set the **CONTRAST** value from 1 to 10.

● **SHARPNESS**

Sharpness determines the amount of detail an imaging system can reproduce. You can set the **SHARPNESS** value from 1 to 10.

● **COLOR GAIN**

COLOR GAIN is determined by a combination of light intensity and how much it is distributed across the spectrum of different wavelengths.

● **DNR (Digital Noise Reduction)**

The **DNR** function can decrease the noise effect, especially when capturing moving images in poor light conditions, and delivering more accurate and sharper image.

● **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.

3.4 RESET

Reset all the settings to the factory default.

3.5 SAVE & EXIT

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