

# TVI-AC344-FD4

# TVI-AC344-FD4-2.8

# TVI-AC344-FD4-BLK

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## User Manual

### User Manual

This manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation purposes only. The information contained in the manual is subject to change, without notice. Please find the latest version on the company website. Please use this user manual under the guidance of professionals.



**WARNING:** THIS PRODUCT CAN EXPOSE YOU TO POLYBROMINATED BIPHENYLS, WHICH IS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. FOR MORE INFORMATION GO TO [WWW.PROP65WARNINGA.CA.GOV](http://WWW.PROP65WARNINGA.CA.GOV)

### **Legal Disclaimer**

SURVEILLANCE LAWS VARY BY JURISDICTION. PLEASE CHECK ALL RELEVANT LAWS IN YOUR JURISDICTION BEFORE USING THIS PRODUCT IN ORDER TO ENSURE THAT YOUR USE CONFORMS TO THE APPLICABLE LAWS. OUR COMPANY SHALL NOT BE LIABLE IN THE EVENT THAT THIS PRODUCT IS USED FOR 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 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

- When using this 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 should 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 a clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, please cap the lens 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 the sensor at the same time.
- The sensor may be damaged by a laser beam, so when any laser equipment is in use, make sure that the surface of the sensor will not be exposed to the laser beam.

- Do not place the camera in extremely hot, cold (the operating temperature should be -22°F to +140°C), dusty or damp locations, and do not expose it to high electromagnetic radiation.
- To avoid heat accumulation, good ventilation is required in the operating environment.
- Keep the camera away from liquid while in use.
- During transport, the camera should be packed in its original packing, or packing of the same type.
- Improper use or replacement of the battery may result in explosion hazard. 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 do not assume any responsibility for problems caused by unauthorized repair or maintenance.)

# 1 Introduction

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## 1.1 Product Features

The camera is applicable for both indoor and outdoor conditions, and the application scenarios include road, warehouse, underground parking lot, bar, etc..

The main features are as follows:

- High performance CMOS sensor
- Low illumination, 0.005 Lux @ (F2.0, AGC ON), 0 Lux with IR
- IR cut filter with auto switch
- OSD menu with configurable parameters
- Auto white balance
- internal synchronization
- SMART IR mode
- 3-axis adjustment

## 1.2 Overview

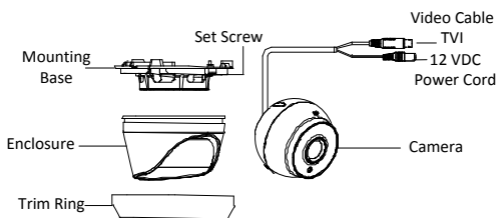


Figure 1-1 Overview

# 2 Installation

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### *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 the camera's.
- Make sure all the attached equipment is powered off during installation.
- Make sure that the wall is strong enough to withstand four times the weight of the camera and the bracket (if applicable).
- If the wall is cement, insert plastic anchors 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.

## 2.1 Ceiling Mounting

### *Steps:*

1. Remove the trim ring from the camera.
2. Stick the drill template (supplied) to the desired mounting location.
3. Drill the screw holes and the cable hole (optional) in the ceiling/wall according to the drill template.

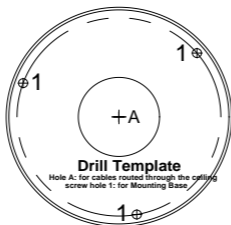


Figure 2-1 Drill Template

**Note:**

Drill the cable hole if planning to route the cable through the ceiling/wall.

4. Route the cables and fix the mounting base on the ceiling with three screws.

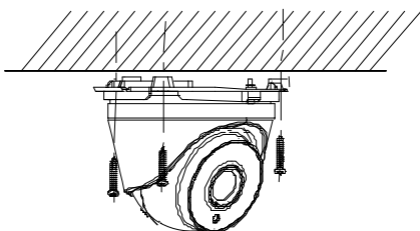


Figure 2-2 Fix the Mounting Base

**Note:**

- The supplied screw package contains self-tapping screws, and plastic anchors.
- For cement wall/ceiling, plastic anchors are required to mount the camera. For wooden wall/ceiling, self-tapping screws are required.

4. Adjust the camera viewing angle (aim).
  - 1). Loosen the set screw.
  - 2). Hold the enclosure to adjust the camera's viewing angle.
  - 3). Tighten the set screw.

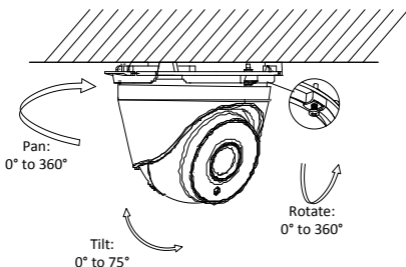


Figure 2-3 Adjust Viewing Angle

5. Reinstall the trim ring to the camera, then twist to secure.

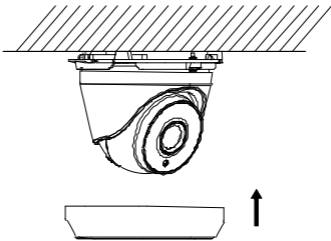


Figure 2-4 Reinstall the Trim Ring

## 2.2 Mounting with Wall Mounting Bracket

### Steps:

1. Mark the screw holes on the desired mounting location.

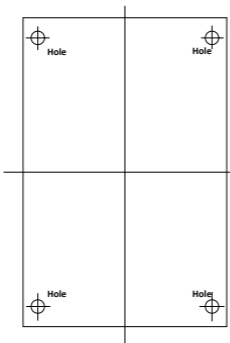


Figure 2-5 Mark Screw Holes

2. Drill 4 screw holes per the template.
3. Remove the trim ring from the camera.
4. Route the cables and fix the camera to the cap of the wall mounting bracket with the three supplied self-tapping screws.

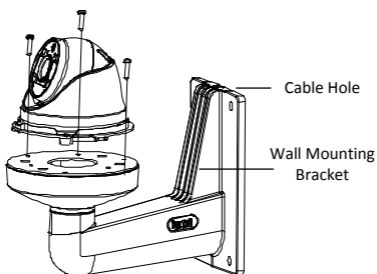


Figure 2-6 Fix the Camera to the Wall Mounting Bracket

5. Align the wall mounting bracket to the screw holes and fix it to the wall with the supplied screws.

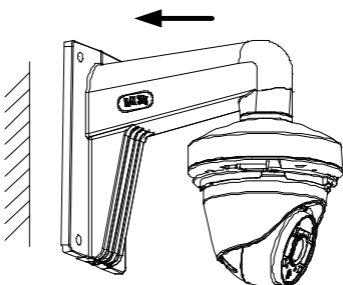


Figure 2-7 Fix the Wall Mounting Bracket to the Wall

6. Adjust camera viewing angle (aim). Refer to Step 4 in section 2.1.
7. Reinstall the trim ring to the camera.

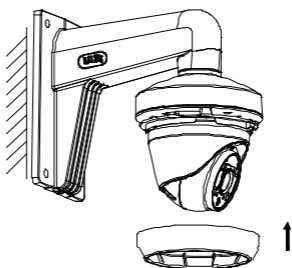



Figure 2-8 Reinstall the Trim Ring

## 3 Menu Description

### **Purpose:**

Call the menu by clicking the  button in PTZ Control, or call preset No.95.

### **Steps:**

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

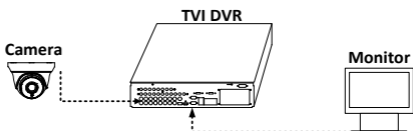



Figure 3-1 Connection

2. Power on the camera, TVI DVR, and the monitor to view the image on the monitor.
3. Right-click to access the quick menu, then click PTZ Control to enter the PTZ Control interface.
4. Call the camera menu by clicking  button, or call preset No. 95.
5. Click the directional arrows to control the camera's OSD.
  - (1) Click up/down direction arrows to navigate up and down in the menu lists.
  - (2) Click Iris + to confirm selection.
  - (3) Click left/right direction button to adjust the value of selected items.

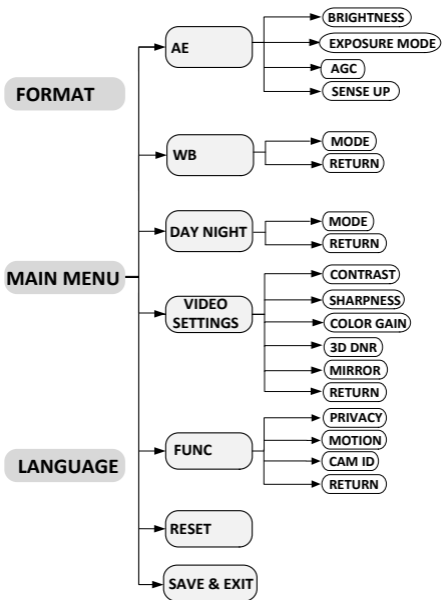


Figure 3-2 Main Menu Overview

## 3.1 FORMAT

### PAL (Phase Alternating Lines)

PAL is a color encoding system for analog television used in broadcast television systems in most countries.

### NTSC: (National Television System Committee)

NTSC is the analog television system that is used in most of North America, parts of South America, Myanmar, South Korea, etc.

## 3.2 LANGUAGE

Available options are English, and Chinese.

## 3.3 MAIN MENU

### 3.3.1 AE (AUTO EXPOSURE)

Auto Exposure describes brightness-related parameters, which can be adjusted in **BRIGHTNESS**, **EXPOSURE MODE**, **AGC**, and **SENSE UP**.

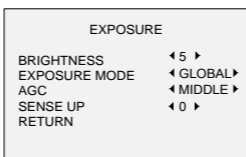


Figure 3-3 AE

### BRIGHTNESS

Brightness refers to the brightness of the image. You can set the brightness value from 1 to 10 to darken or brighten the image. The higher the value, the brighter the image is.

### EXPOSURE MODE

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

- **GLOBAL**

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

- **BLC (Backlight Compensation)**

BLC (Backlight Compensation) compensates for bright lights in backgrounds by automatically adjusting exposure for darker foreground areas and objects. This may cause over-exposure of the areas where light is strong. When BLC is selected as the exposure mode, the BLC level can be adjusted from 0 to 8.

- **WDR (Wide Dynamic Range)**

Wide dynamic range helps the camera provide clear images even under backlit circumstances. WDR balances the brightness level of the whole image and provides clear images with details.

### AGC (Auto Gain Control)

AGC optimizes the clarity of the image in poor light conditions. The **GAIN** level can be set as **HIGH**, **MIDDLE**, or **LOW**. Select **OFF** to disable the **GAIN** function.

**Note:**

Image noise will be amplified when the GAIN is on.

## SENSE UP

Sense up increases the exposure on a signal frame, which makes a camera more sensitive to light so it can produce images even in low lux conditions. You can set the SENS-UP as OFF or AUTO as desired for different lighting conditions.

The SENS-UP function will automatically adjust itself to x2, x4, x6, x8, x10, x12, x14, and x16 according to different lighting conditions when on AUTO.

### 3.3.2 WB (White Balance)

White balance is used to to adjust the color temperature (tints of blues and reds) of the image., and can remove unrealistic color casts in the image. You can set WB mode as **ATW**, or **MWB**.

#### ATW (Auto Tracking White Balance)

Under **ATW** mode, white balance is adjusted automatically according to the color temperature of the image lighting.

#### MWB (Manual White Balance)

You can set the **R GAIN/B GAIN** value from 1 to 255 to adjust the shades of red/blue color of the image.

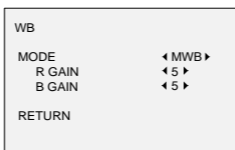


Figure 3-4 MWB MODE

### 3.3.3 DAY NIGHT

**Color**, **BW** (Black White), and **AUTO** are selectable for DAY NIGHT modes.

#### COLOR

The image is in color (day mode) at all times.

#### B/W

The image is black and white (night mode) at all times, and the IR LED turns on in low-light conditions.

#### AUTO

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

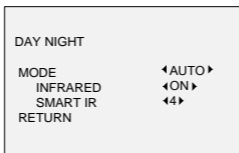


Figure 3-5 DAY NIGHT

#### ● INFRARED

You can turn on/off the IR LED(s) to meet the requirements of different illumination needs.

## ● 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 1 to 8. The higher the value, the stronger the effects will be.

### 3.3.4 VIDEO SETTING

Move the cursor to **VIDEO SETTING** and click Iris+ to enter the submenu. **CONTRAST**, **SHARPNESS**, **COLOR GAIN**, **3D DNR**, and **MIRROR** are adjustable.

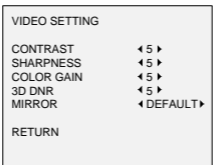


Figure 3-6 VIDEO SETTING

## 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

Adjust this feature to change the saturation of color in the image. The value ranges from 1 to 10.

## 3D DNR (Digital Noise Reduction)

The 3D DNR function can decrease image noise artifacts, especially when capturing moving images in low light conditions and delivering more accurate and sharp image quality. You can set the **DNR** value from 1 to 10.

## MIRROR

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

**DEFAULT**: 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.

### 3.3.5 FUNC (Functions)

In the FUNC sub-menu, you can set privacy mask, motion defection, and camera ID settings.

## PRIVACY

The privacy mask allows you to cover certain areas which you don't want to be viewed or recorded. Up to 4 privacy areas are configurable.

PRIVACY	
MODE	◀ON ▶
AREA 0	⬆
AREA 1	⬆
AREA 2	⬆
AREA 3	⬆
COLOR	◀RED▶
TRANSPARENCY	◀OFF▶
RETURN	

Figure 3-7 PRIVACY

Select a PRIVACY area. Set the DISPLAY status to ON. Click up/down/left/down buttons to define the position and size of the area.

## MOTION

In user-defined motion detection areas, moving objects can be detected and recording will be triggered. Up to 4 motion detection areas can be configured.

MOTION	
MODE	◀OFF ▶
AREA 0	⬆
AREA 1	⬆
AREA 2	⬆
AREA 3	⬆
SENSITIVITY	◀50 ▶
COLOR	◀RED▶
TRANSPARENCY	◀OFF▶
RETURN	

Figure 3-8 MOTION

Select a MOTION area. Set the DISPLAY status to ON. Click up/down/left/right buttons to define the position and size of the area. Set the SENSITIVITY from 0 to 100.

## CAMERA ID

This setting allows a camera ID number to be displayed on the screen.

CAM ID SETTING	
MODE	
CAM ID	
X POSITION	◀ ON ▶
Y POSITION	◀ 75 ▶
RETURN	◀ 36 ▶
	◀ 16 ▶

Figure 3-9 CAM ID SETTING

Set the MODE as on. Click up/down/left/right buttons to choose the camera ID and the position.

### 3.3.6 RESET

Resets all settings to their default values.

### 3.3.7 SAVE & EXIT

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