



VA Series User Manual

Analogue 2-Mega Pixel Varifocal Cameras

VA-B2MP28V12IR

VA-D2MP28V12IRVR

VA-T2MP28V12IR 2MP

VA-X2MP 2MP

Please read this manual thoroughly before use and keep it handy for future reference.

Before You Begin

Read these instructions before installing or operating this product.

Note: This installation should be carried out by a qualified service person and conform to local codes.

This manual provides installation and operation information. To use this document, you must have the following minimum qualifications:

- A basic knowledge of CCTV systems and components
- A basic knowledge of electrical wiring and low-voltage electrical connections

Intended use

Only use this product for its designated purpose; refer to the product specification and user documentation.

Customer Support

For assistance in installing, operating, maintaining and troubleshooting this product refer to this document and any other documentation provided. If you still have questions, please contact Norbain Technical Support and Sales:

**Norbain SD, Inspired, Easthampstead Road, Bracknell , Berkshire RG12 1YQ.
UK +44 (0) 118 912 5000**

Note: You should be at the equipment and ready with details before calling Technical Support.

Conventions Used in this Manual

Boldface or button icons highlight command entries. The following **WARNING**, **CAUTION** and **Note** statements identify potential hazards that can occur if the equipment is not handled properly:



*** WARNING:**

Improper use of this equipment can cause severe bodily injury or equipment damage.



**** Caution:**

Improper use of this equipment can cause equipment damage.

Note: Contains important information about a product or procedure.



Where applicable a Declaration of Conformity in accordance with the following EU directive has been made. The manufacturer declares that the product supplied with this document is compliant with the provisions of the EMC Directive 2014/30/EU, the CE Marking Directive 93/68 EEC and all associated amendments.

Our CE EU-Authorised Representative: Comply Express Unipessoal LDA, StartUp Madeira - EV141, Campus da Penteadá, 9020-105 Funchal, Madeira, Portugal”



All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive: 2011/65/EU, which means our manufacture processes and products are strictly “lead-free” and without the hazardous substances cited in the directive.

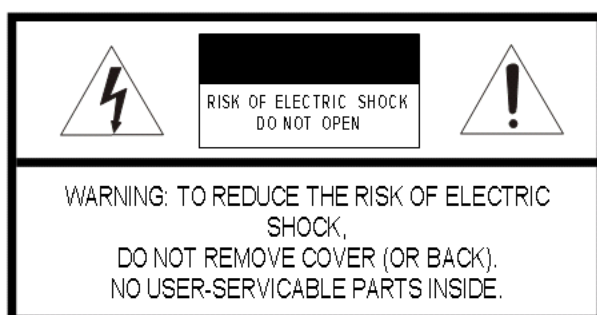


The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste.

NORBAIN SD reserves the right to make changes to the product and specification of the product from time to time without prior notice.

WARNINGS AND CAUTIONS:

To reduce the risk of fire or electric shock, do not insert any metallic objects through the ventilation grills or other openings on the equipment.



IMPORTANT SAFEGUARDS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that product heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. CAUTION - THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.
15. IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

Introduction

The Vista VA 2MP analogue camera range provides compatibility with other DVRs and Hybrid recorders. They include 4-in-1 switchable video output (TVI/ AHD/CVI/CVBS) with a high-resolution 2MP sensor and IP 67 compliance for indoor and outdoor surveillance.

Cameras in the range include:



VA-B2MP28V12IR



VA-D2MP28V12IRVR



VA-T2MP28V12IR

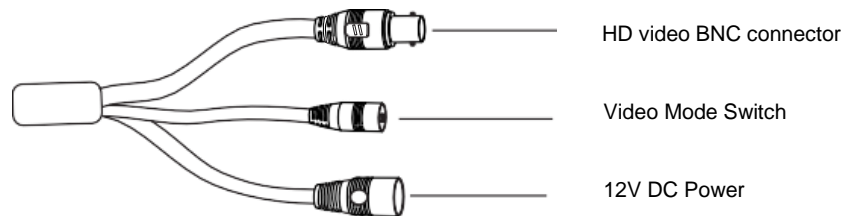


VA-X2MP

Features include:

- Supports video output formats: AHD/TVI/CVI: 2MP@30fps/25fps.
- 1/2.8" CMOS sensor.
- 2.8~12mm lens, motorized.
- Wide Dynamic Range(WDR 120dB)
- 3DNR (Digital Noise Reduction).
- IP 67 Weather rated housing (except VA-X2MP box camera).
- IK10 Vandal resistant - VA-D2MP28V12IRVR only.
- Meets NDAA (National Defence Authorization Act) Compliance.

Change Camera Video Format



Camera drop cable

To change the camera video format;

- Power up camera, allow to boot then unscrew weatherproof cover.
- Press & hold the Video Mode Switch (above) for 5-seconds to change video format to the next in the sequence; AHD, CVI, CBVS, TVI.
- Replace the cap once set.

The default video format is TVI.

Packing List

- Camera.
- Drill template.
- Mounting screws.

What you need

To install the camera, you will need:

- 12VDC power source (adapter). See section title **Power Supply Specifications**.
- Tools and additional fasteners (may be required) for mounting the camera.
- BNC Video and power extension cable.
- Screwdriver.

Installation

Before installation:

- Make sure that the device is in good condition and all the assembly parts are included.
- Check the specification of the products for the installation environment requirements.
- Make sure that the wall or the ceiling is strong enough to withstand 3 times the weight of the camera.
- To avoid fire or shock hazard, use a correct power supply. Verify the power supply will provide the rated voltage and wattage for the camera. See the section titled **Power Supply Specifications** at the end of the manual.

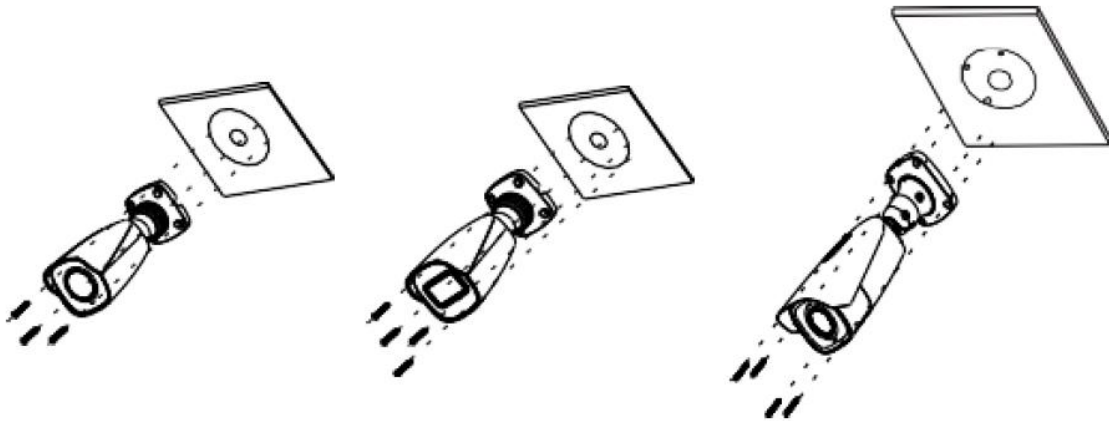
During installation:

- **Camera Lens:** Handle the camera carefully to prevent scratching or soiling the lens. Keep the protective covering on the lens until the camera is installed. If the lens becomes soiled, clean it only with approved products. See the **Cleaning** section.
- **Power supply:** Camera drop cable includes two connectors:
 - **Video BNC connector:** For transmission of the video signal across a coax extension cable to a 5MP compatible recorder.
 - **12 VDC Power connector:** When applying power, observe the polarity - the centre of the plug is positive!
- **Mounting the camera:** When mounting the camera, the drop cable can be routed through a cable channel in the mounting base or through the mounting surface. All OSD adjustments can usually be performed through the PTZ menus in the DVR or hybrid recorder it is connected to.

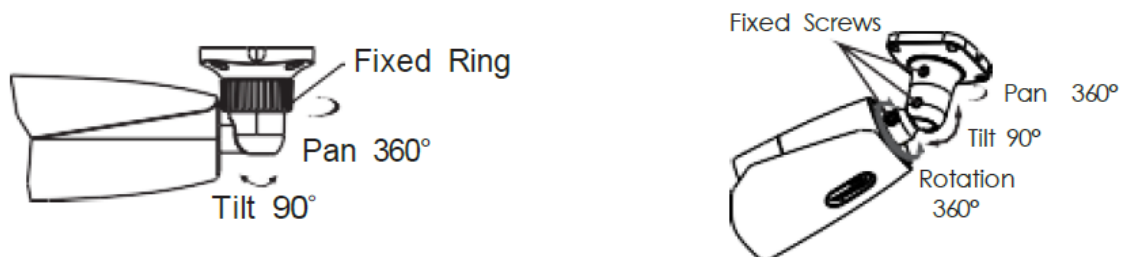
Refer to the relevant section that follows to fix your camera – using the template, or the cameras base as a guide for drilling holes. The mounting hardware provided is appropriate for most surfaces. However, depending on the surface materials, more appropriate fasteners may be required.

VA-B2MP28V12IR Bullet Camera

1. Referring to the image of your camera below - drill screw holes according to the camera base or supplied template.
2. Drill hole for cable then route the cable and connect.
3. Secure mounting base of camera to the wall with screws as shown.



4. Preview the cameras image via test monitor and adjust bracket as required - loosen either the fixed ring or screws (below) to adjust the viewing angle of the camera, then retighten.

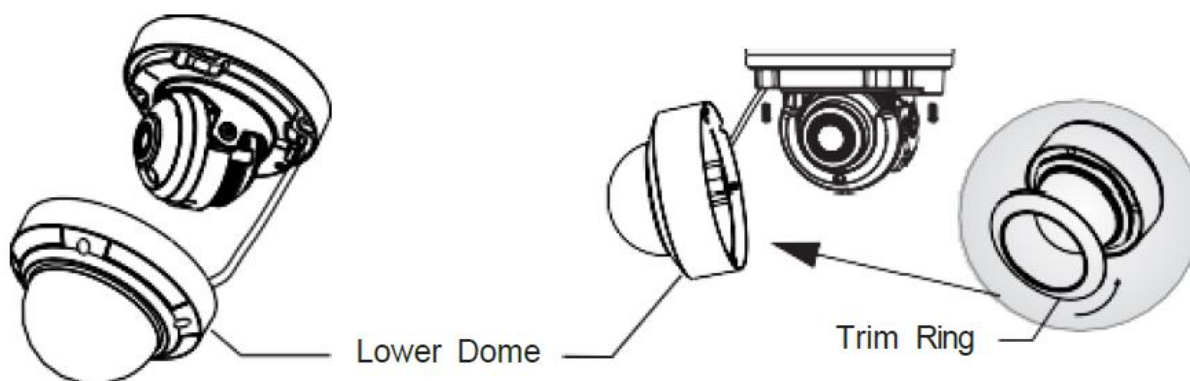


For this series of camera, the optional junction box, can be used instead to mount the camera to the required surface or conduit.

Now go to section titled “Configuring the camera OSD menu with DVR”

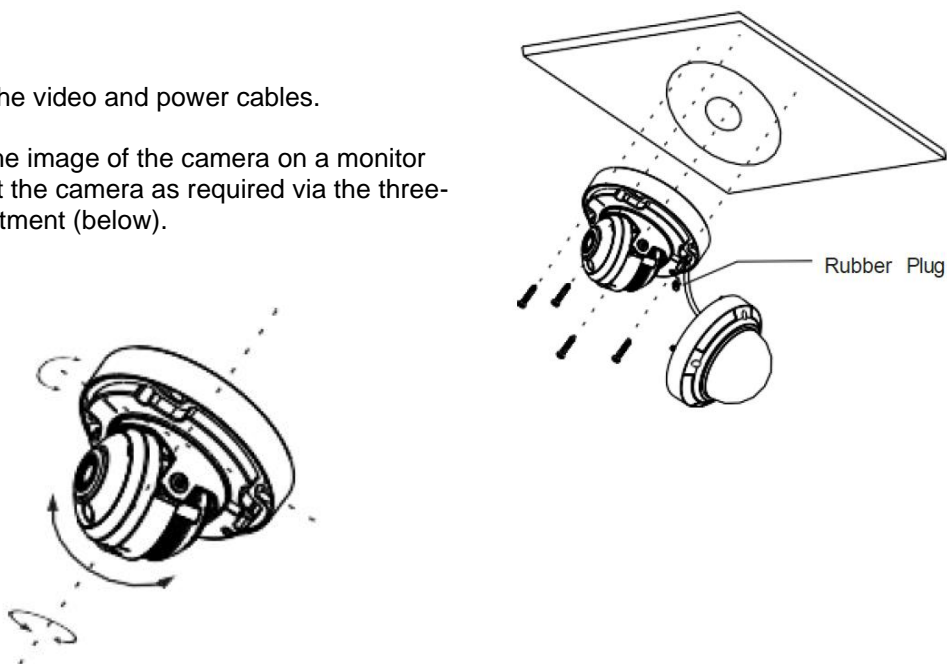
VA-D2MP28V12IRVR Dome Camera

1. Drill screw holes according to the holes of the mounting base of the camera, or template if supplied. Also drill a hole for the cameras cable to pass through the mounting surface.
2. Remove the lower dome of the camera by removing the screws (lower left image). If screws are not visible, then your camera has a trim ring that needs to be removed first – simply rotate trim ring anticlockwise to remove it (below right). The screws will now be exposed.



3. Route the cables while securing the mounting base of the camera to the wall with screws as shown below right.

5. Connect the video and power cables.
6. Preview the image of the camera on a monitor and adjust the camera as required via the three-axis adjustment (below).



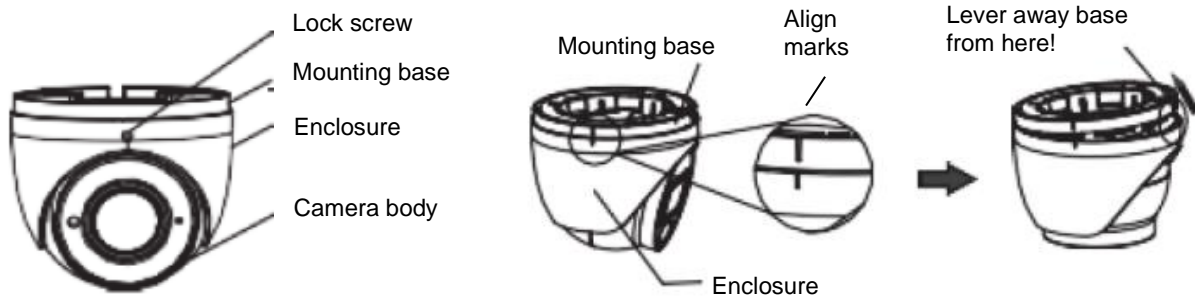
7. Re-fit the domes bubble to the camera using the reverse of the procedure you followed in step 2 – remembering to refit the trim ring if one was included.
8. Finally, remove the protection film to finish the installation.

For this series of camera, the optional junction box, can be used instead to mount the camera to the required surface or conduit.

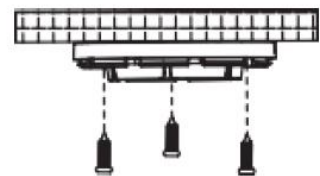
Now go to section titled “Configuring the camera OSD menu with DVR”

VA-T2MP28V12IR Turret Camera

1. Drill screw holes according to the holes of the mounting base of the camera, or template if supplied, as well as for the cables.
2. Remove the mounting base of the camera – noting there are two possible removal methods: either via lock screw (below left) or simple twist and aligning of marks (below right).



3. Fix the mounting base of the camera to the surface (right).
4. Route and connect video and power cables.
5. Offer camera up to the base, adjust until you receive the view required, then lock the camera into position using the reverse of step 2.



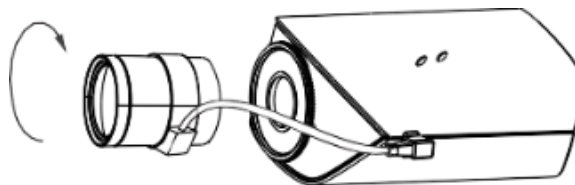
For this series of camera, the optional junction box, can be used instead to mount the camera to the required surface or conduit.

Now go to section titled “Configuring the camera OSD menu with DVR”

VA-X2MP Box Camera

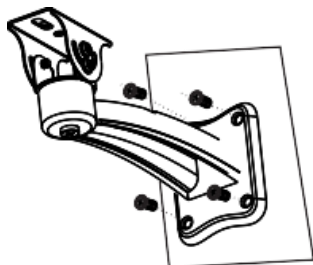
Fixing of the box camera is entirely dependent upon your chosen box camera bracket or housing. The below example acts as a basic guide only and you must use instructions supplied with your chosen bracket or housing.

1. Attach your chosen CS lens to the box camera body and connect the P-plug to the cameras socket (right).

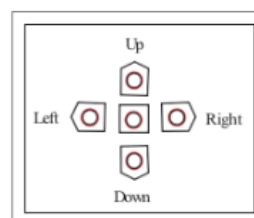
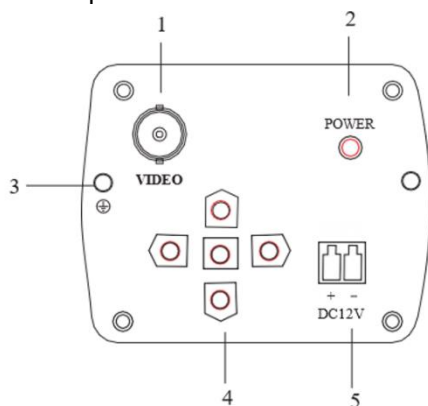


Note: C-mount lens requires you to supply a C/CS adapter ring.

2. Drill screw holes relevant for your bracket/housing, as well as any holes for the cables.
3. Fix bracket to wall/surface and route cables.



4. Connect power and video to the camera using the following guide.



1. Video Out TVI/AHD/CVI/ CVBS
3. Power Indicator
5. Power input

2. Ground
4. OSD navigation and video format switch

Switching video output format

To change video format on the box camera, press and hold the relevant key;

CVBS	=	Left key for 5 seconds
CVI	=	Up key for 5 seconds
AHD	=	Right key for 5 seconds
TVI	=	Down key for 5 seconds

Focus and zoom the lens according to the lens manufacturer's instructions.

Now go to section titled "Configuring the camera OSD menu with DVR"

Configuring The camera OSD Menu With DVR

You can configure the camera OSD menu via the DVR it is connected to using the PTZ control panel. Also, the OSD display menu can be accessed and is useful for quickly making common settings for text overlays that appear on the Live View video streams.

Open the OSD display menu

If the camera is connected to a Vista VA-DVR, you can quickly setup the on-screen display features including the camera name, date and time formats using the OSD menu. First confirm the VA camera is correctly set for PTZ control on the VA-DVR;

1. Connect the cameras BNC video cable to the required input port on the DVR and power up.
2. Login to the VA-DVR as admin
3. Goto/click menu options **Menu > Camera > PTZ** (below screen will be displayed)



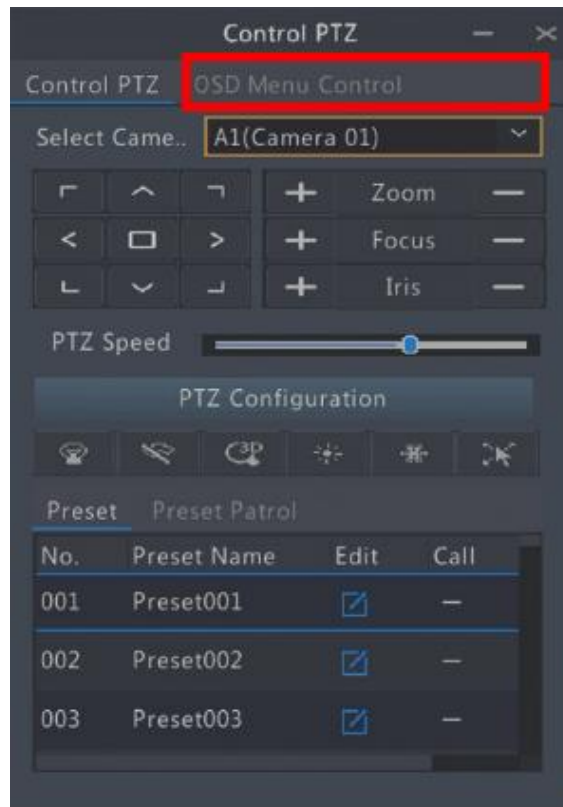
4. Select the camera channel number for the camera you just connected – click and select from the dropdown window. Next choose **Control Mode** and select **Coaxial**.
5. Save the setting and return to the DVRs Live screen.

To open the OSD menu while at the VA-DVR, click on the **Control PTZ** icon on the quick menu bar for the individual camera - as shown below.



On the resulting pop-up menu, click the Coaxial Control icon (right), the main PTZ menu (below) will be displayed.





Select the **[OSD Menu Control]** tab (above) then click the PTZ key / to open the main menu.

Now navigate the menus by clicking the PTZ direction keys (Up) or (Down) in the PTZ direction area. Click (Left) or (Right) keys to select the menu to the left of the camera's cursor.


Menus displayed with an arrow icon (below) means it has sub-menu - click / to enter into the sub-menu, as well as to confirm any settings changes you made.



MAIN MENU	
1. LENS	MANUAL
2. EXPOSURE	
3. BACKLIGHT	
4. DAY&NIGHT	OFF
5. NR	EXT
6. SPECIAL	
7. ADJUST	
8. AF	
9. EXIT	SAVE&END

► Lens

Manual only option.

► Exposure Setup

Select EXPOSURE and then click  button. This will display the following sub-menu.

EXPOSURE	
▶ 1. SHUTTER	AUTO
2. AGC	 15
3. SENS-UP	OFF 36
4. BRIGHTNESS	
5. D-WDR	ON ↵
6. RETURN	RET ↵

SHUTTER: Set the shutter speed as required. Auto or FLK is selectable.

AGC: When lighting is insufficient, increase or decrease the value as required. The range of AGC value is from 0 to 15.

SENS-UP: Extend the exposure time of camera. The higher the time you set, the lower the frame is and motion blur is increased in low light conditions. Please select times as required. OFF, x2, x4, x6, x8 and x10 are selectable.

Brightness: Set the brightness level of the camera's image. The range of brightness value is from 0 to 100.

D-WDR: Digital Wide Dynamic Range. Enable or disable. WDR can adjust the camera to provide a better image when there are both very bright and very dark areas simultaneously in the field of view by lowering the brightness of the bright areas and increasing brightness for the dark areas.

Return: RET (Return) or SAVE&END is selectable. To confirm and save any parameter changes, please select SAVE&END.

► Backlight

BACKLIGHT: OFF, BLC, WDR or HSBLIC can be selected.

If **OFF**, the system will not backlight compensate the image.

If **BLC** is selected, it will enhance the brightness of the foreground subject.

If **HSBLIC** is selected, high brightness will be suppressed and the low brightness will be enhanced at the same time. As a result, the overall image will be exposed correctly. (Please use the fixed IRIS Lens).

If **WDR** is selected, it will adjust the camera to provide a better exposed image when there are both very bright and very dark areas in the field of the view by lowering the bright areas and increasing the dark areas.

► Day & Night Setup

There are four modes: EXT, AUTO, COLOR and B/W.

EXT: This mode is similar to the AUTO mode below, but with the addition of adding a delay to the actual point of switchover between day and night etc. Simply set the required delay.

AUTO: When selecting AUTO, the camera will change to colour mode in daylight then B/W mode at night for clearest images.


COLOR: In this mode, the camera will not switch to B/W in low light (night) condition and remain in

colour.





B/W: In this mode, the IR Smart function can be enabled to obtain clear black and white images.

- ▶ **NR:** Noise Reduction - the level of 2DNR and 3DNR can be set. Decrease the noise reduction level to improve image resolution - but noise will increase in dark underexposed areas. Increasing the level of noise reduction will reduce noise but may reduce image resolution slightly.

▶ **Special**









Select Special and the  button to go to the following sub-menu.

- **D-Effect:** includes Freeze, Mirror and NEG. Image setup.
- **FREEZE:** If selecting ON, MIRROR function will be unavailable.
- **MIRROR:** Mirror the current image. There are four kinds of mirror: **OFF**, **ROTATE**, **V-FLIP** and **MIRROR**.
- **NEG. IMAGE:** If ON is selected, a negative image will be displayed.



SPECIAL	
▶ 1. D-EFFECT	
2. MOTION	OFF
3. PRIVACY	OFF
4. LANGUAGE	ENG 
5. DEFECT	
6. RETURN	RET 






Motion

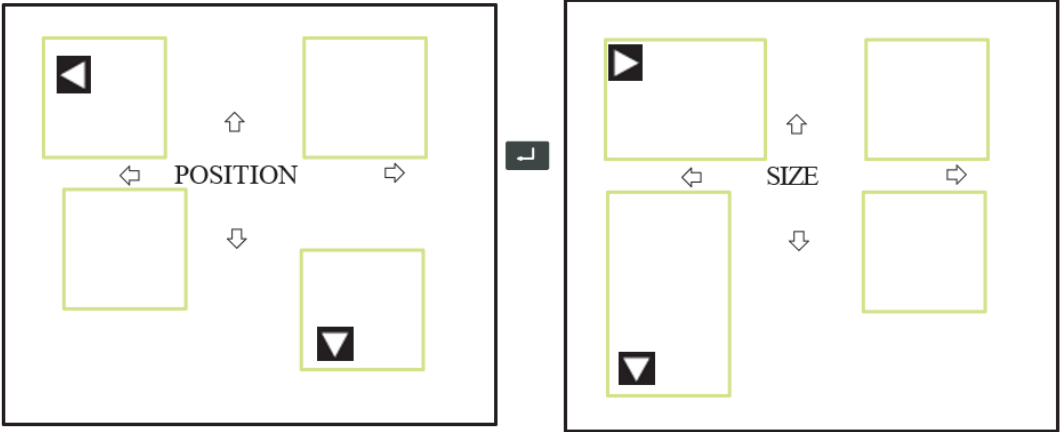
Select Motion and click the  button to go to the following sub-menu.

MOTION	
▶ 1. SELECT	AREA 1
2. DISPLAY	ON 
3. SENSITIVITY	    64
4. COLOR	GREEN
5. TRANS	1.00
6. ALARM	
7. DEFAULT	
8. RETURN	RET 

SELECT: There are four motion areas in total.

DISPLAY: If ON is selected, you can set its size and position. Click  to go to the sub-menu (over the page). Click direction buttons to set the position of the alarm area. Then click  to save the position.

Use the image below as reference. When “Size” is shown on the screen, click  or  to shrink the size and click  or  to enlarge the size. Once set as required click  to exit and save the settings.



SENSITIVITY: You may adjust the sensitivity of the detection area. It ranges from 0~100.

COLOR: Select the colour of the motion detection alarm line.

TRANS: Set the transparency of the colour of the motion alarm line.

- **Privacy**

Four privacy mask areas can be set. The setting of Privacy area masks is the exact same navigation as motion area setting in the previous section above.

PRIVACY	
▶ 1. SELECT	AREA 1
2. DISPLAY	COLOR ↩
3. COLOR	WHITE
4. TRANS	1.00
5. DEFAULT	↩
6. RETURN	RET ↩

Language

16 languages can be selected. Please select it as needed.

Defect

Image sensors may suffer occasional failure of individual pixels whereby they show as either constant black or constant white. The Defect feature uses post image processing to reduce the affect. Choose the relevant mode, or test each on your live image.

The DEFECT feature modes include LIVE DPC, White DPC and Black DPC.

DEFECT	
▶ 1. LIVE DPC	OFF
2. WHITE DPC	ON ↵
3. BLACK DPC	OFF
4. RETURN	RET ↵

▶ Adjustment

Choose ADJUST and then click  button. This will bring the following sub-menu.

ADJUST	
▶ 1. SHARPNESS	AUTO ↵
2. MONITOR	↵
3. LSC	ON
4. MONITOR OUT	THD ↵
5. VIDEO.OUT	PAL
6. RETURN	RET ↵

Sharpness: Set the resolution level of the image plane and the sharpness level of the image edge.

Monitor: Set GAMMA, Blue gain and red gain.

GAMMA: Set up the value of GAMMA. USER, 0.45, 0.50, 0.50, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90, 0.95 and 1.00 are selectable.

BLUE GAIN: Push left/right to increase or decrease the value of blue.

RED GAIN: Push left/right to increase or decrease the value of red.

LSC: Lens Shading Correction. Please enable or disable it as needed.

MONITOR OUT: THD(TVI), AHD, CHD(CVI), CVBS video output can be selected. Please choose the right video output signal as needed. Select MONITOR OUT by clicking  (D) icon. Then click  to go to the sub-menu.

Video. OUT: NTSC or PAL is optional.

Cleaning

Clean the camera with an approved glass cleaning solution and a lint free cloth.

- Dust can be removed from the camera by wiping it with a soft damp cloth. To remove stains, gently rub the surface with a soft cloth moistened with a mild detergent solution, then rinse and dry it with a soft cloth.
- Remove all foreign particles, such as plastic or rubber materials, attached to the camera housing. These may cause damage to the surface over time.



Do not use benzene, thinner or other chemical products on the camera assembly; these may dissolve the paint and promote damage of the surfaces. Before using any chemical product, carefully follow the accompanying instructions.

Fault Finding

Symptom	Possible Cause
No image	<ul style="list-style-type: none">• Check the power connection.• Check video cable connection to the monitor/DVR.• Check DVR recorder settings to verify the video resolution mode of the camera and recorder match
Image is dim or not clear.	<ul style="list-style-type: none">• If the camera lens is dirty, clean it with a soft, clean cloth.• Adjust the monitor controls, if necessary.• If camera is facing a bright light, change it's position.• Adjust the lens focus.
Image is dark.	<ul style="list-style-type: none">• Adjust the contrast control of the monitor.• If you have an intermediate device, set the impedance (75 Ω /Hi-Z) correctly, and check cable connections
Camera not working properly, and surface of camera is hot.	<ul style="list-style-type: none">• Verify camera is correctly connected to an appropriate regulated power source.
Image flickers.	<ul style="list-style-type: none">• Make sure camera isn't facing direct sunlight or fluorescent light, change the camera position.

Power Supply Specifications

Camera	PSU Specification
VA-B2MP28V12IR	12VDC @ 1Amp
VA-D2MP28V12IRVR	12VDC @ 1Amp
VA-T2MP28V12IR	12VDC @ 1Amp
VA-X2MPIR	12VDC @ 1Amp