



VP-HDA20-SM

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 made by a qualified service person and should 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, low-voltage electrical connections and IP networking/infrastructure

Intended use

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

Using the camera in continuous motion applications e.g. Auto Scan, Tour, or Pattern functions with Auto Focus (Auto (AF)) will reduce the warranty to 6 months.

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, 210 Wharfedale Road, Winnersh Triangle, Wokingham, Berkshire RG41 5TP, England.

UK +44 (0) 118 912 5000 / Vista Technical Support +44 (0) 118 912 5125

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: Notes contain important information about a product or procedure.



This apparatus is manufactured to comply with the radio interference.

A Declaration of Conformity in accordance with the following EU standards has been made. The manufacturer declares that the product supplied with this document is compliant the provisions of the EMC Directive 2004/108/EC, the CE Marking Directive 93/68 EEC and all associated amendments.



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.

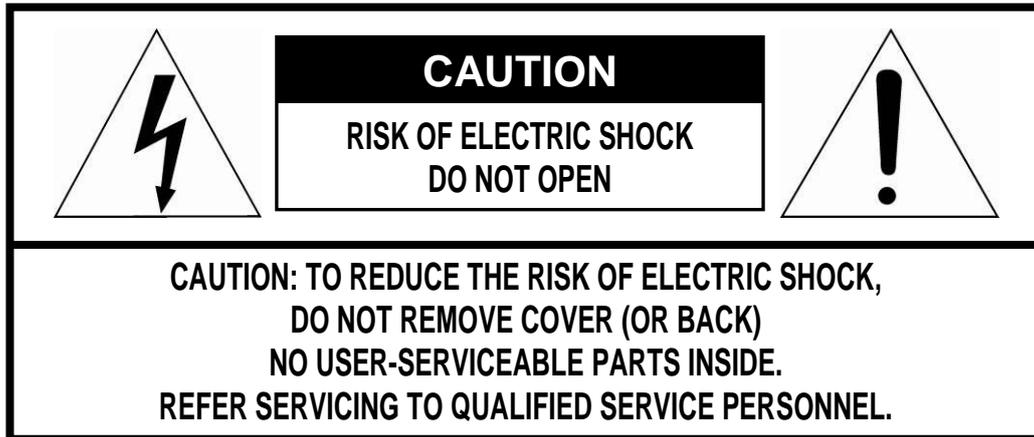
* This symbol indicates electrical warnings and cautions.

** This symbol indicates general warnings and cautions.

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 SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Clean only with dry cloth.
6. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
7. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
8. 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.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
10. Only use attachments/accessories specified by the manufacturer.
11. Unplug this apparatus during lightning storms or when unused for long periods of time.
12. 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.
13. **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.**
14. *Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.*

CE COMPLIANCE STATEMENT

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.

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Chapter 1 — Introduction

1.1 Features

- Sony 1/2.8" STARVIS CMOS sensor
- 1080p TVI & AHD output, with separate CVBS output (600TVL)
- 20:1 optical zoom (4.7mm – 94.0mm) camera with x16 digital zoom and True Night Shot function
- 240 Preset positions with the individual camera Auto Exposure (AE) settings
- 8 Tours consist of Presets, Patterns, Auto Scans and other Tours can be programmed with over 300 functions and Preset locations, with either normal or vector scan mode between each Preset position.
- 1 Auto Scan with the normal, the vector, and the random mode with 13 speed steps
- 8 Patterns (Learn Tours) with up to 500 seconds learning ability available
- 16 Privacy Zones
- 4 Alarm inputs, 2 Alarm outputs (5VTTL)
- Variable speed from 0.1°/sec. to 380°/sec.
Three Variable speed (SLOW, NORMAL, TURBO)
- Proportional Pan / Tilt speed (dependant on zoom ratio)
- Maximum speed is 380°/sec. when Preset command.
- Auto Calibration from 0.1° to 6° (Tilt range is -10° to 190°)
- Programmable user preferences (alarm, preset, title, etc.)
- 180° Digital Flip
- Up to 3999 selectable camera addresses
- Function Run menu using DVR without function key (Pattern, Scan ...)
- Hikvision-C, Pelco-C or Fastrax-C coaxial protocols
- Auto sensing RS485 telemetry supporting: Vista-485, Pelco P & D protocols
- 12VDC or 24VAC operation
- IP66 and built to IK10 (EN 62262)
- Use clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

Chapter 2 — Installation and Configuration

2.1 Package Contents

The cameras are housed in compact housing, constructed of aluminum, steel and plastic, designed for wall, ceiling and pole mounting. Bracketry is not included, so please discuss with sales regarding mounting options and bracketry required to fulfill this.

The housing meets the Protection Classification IP66 standards for dust and moisture ingress.

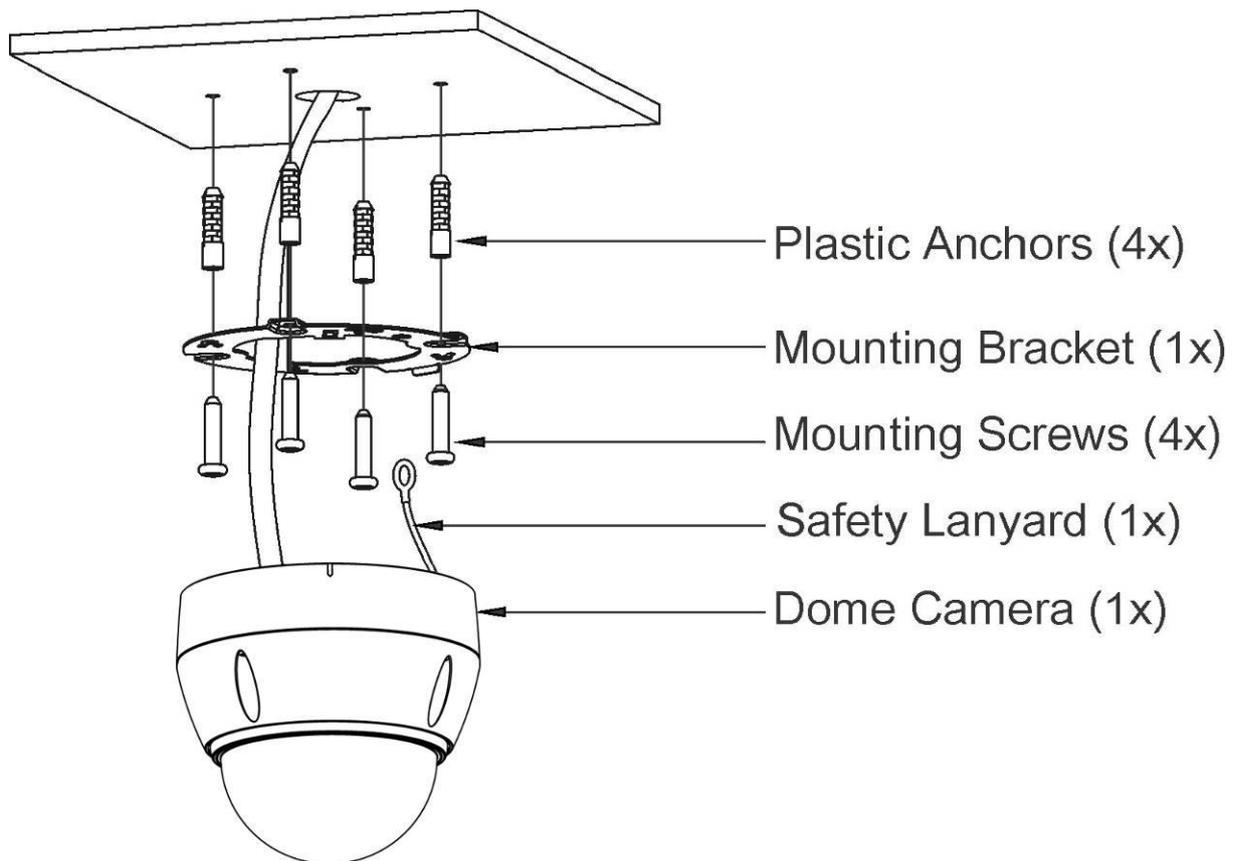
* Dome Camera	1
* Instruction Manual (This Document)	1
* Template Sheet	1
* Mounting Bracket	1
* Safety Lanyard	1
* Accessory Kit	1
1) Mounting screws (PH6 x 35.0)	(4)
2) Plastic anchors	(4)
3) O-Rings	(4)
4) Torx wrench	(1)
* Accessory Connector	1
1) 2-Pin Terminal Block	(1)
2) 3-Pin Terminal Block	(1)
3) 4-Pin Terminal Block	(1)
4) 5-Pin Terminal Block	(1)

2.2 Mounting the Camera

The dome camera is for use in surface mount applications, and the mounting member must be capable of supporting loads of up to 10 lb (4.5 kg). (Pendent mounting must use pendent mount accessory.)

The dome camera's mounting bracket should be attached to a structural object, such as hard wood, wall stud or ceiling rafter that supports the weight of the dome camera.

Please see the Vista Solution guide for available bracketry and mounting options.



CAUTION: A silicone rubber sealant must be applied to seal the housing to secure waterproofing.

2.2.1 Locking the Camera

1. Make screw holes on the ceiling using the supplied mounting Template Sheet (Figure A).
2. Fix the Mounting Bracket to the ceiling using supplied Anchors (4x) and Mounting Screws (4x) (Figure B).
3. Hook up the Safety Lanyard to the Safety Lanyard Hook of the Mounting Bracket (Figure C).
4. Align the locking tab on the bracket and the locking slot on the base of the dome (Figure D).
5. Turn the dome to the counterclockwise about 10 degree to the locked position (Figure E).

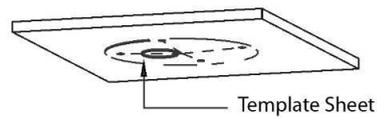


Figure A

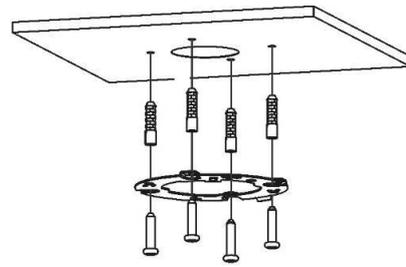


Figure B

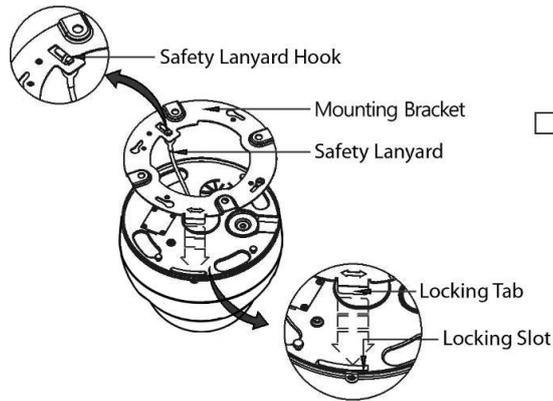


Figure C

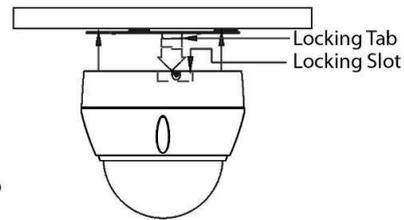


Figure D

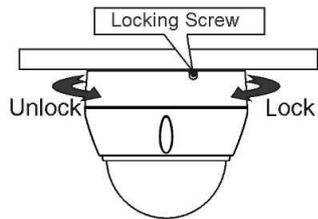


Figure E

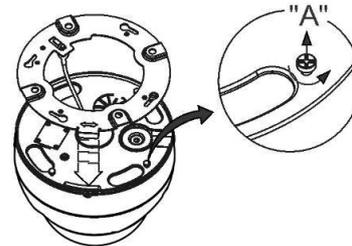
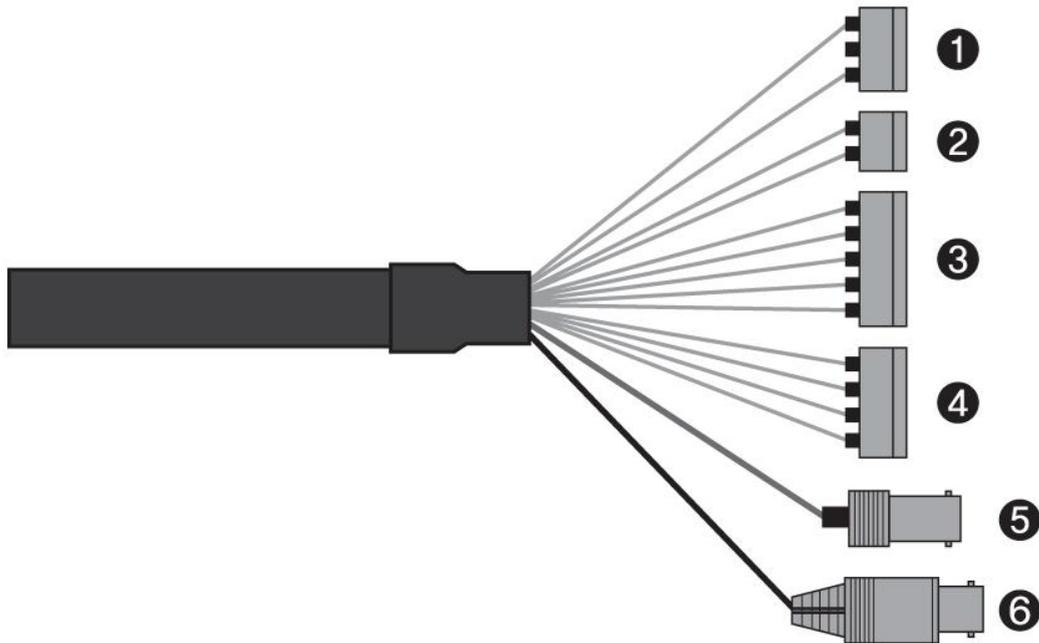


Figure F

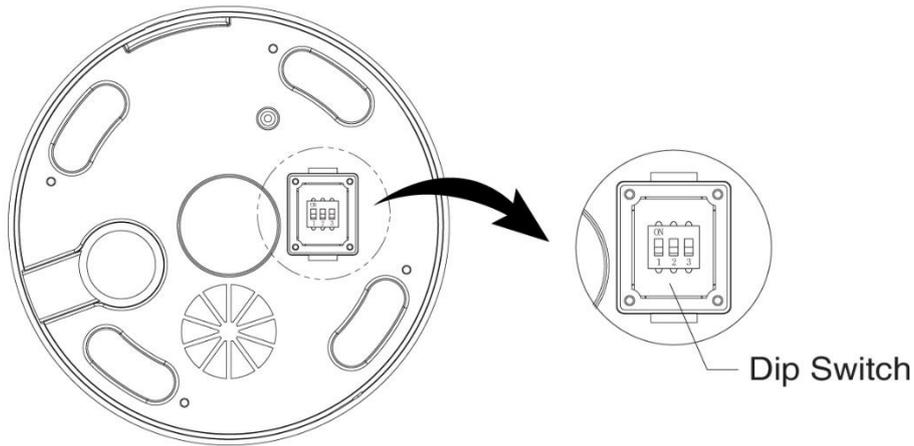
CAUTION: Before installing mounting bracket to surface pre-adjust the four mounting screws "A" on the base of the dome camera to best match the mounting bracket locked position. Unscrew the locking screw on the side of the dome's base and fit the tab of the mounting bracket into the locking slot. Screws "A" should not be too tight or too loose when the dome is in the locked position. After setting the proper positions of screws "A" remove the mounting bracket and install it to the proper surface. If it is too difficult to lock the dome in position after the mounting bracket has been installed readjust the screws "A" by unscrewing them a small amount and try to install dome camera again.

2.3 Basic Configuration of Dome Camera System



No.	Connector	Wire Color	Description
1	3-pin terminal block	RED	24VAC or 12VDC+
		WHITE	24VAC or 12VDC-
2	2-pin terminal block	GREEN	RS-485+
		BLUE	RS-485-
3	5-pin terminal block	GRAY	ALARM INPUT 1
		VIOLET	ALARM INPUT 2
		ORANGE	ALARM INPUT 3
		SKY BLUE	ALARM INPUT 4
		BLACK	GND
4	4-pin terminal block	YELLOW	ALARM OUTPUT 1
		BLACK & WHITE	GND
		SKY BLUE & BLACK	ALARM OUTPUT 2
		ORANGE & BLACK	GND
5	BNC jack	BLUE	HD-TVI/AHD OUTPUT
6	BNC jack	BLACK	CVBS OUTPUT

The dome camera must be installed by qualified service personnel in accordance with all local and federal electrical and building codes.



Open the DIP switch cover and change the setting of DIP switch, replace this cover plate, taking care that it is seated and fitted correctly.

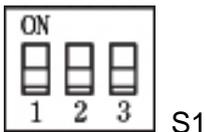
NOTE: The cover plate is a primary seal, so failure to fit or refit it correctly will remove the IP66 protection and damage will occur to the camera not covered by the warranty.

2.4 Setting Dome Camera Address (ID)

To prevent damage, each dome camera must have a unique address (ID). The factory default setting is 1.

Refer to '3.11 Dome Communication' section for detailed information.

2.5 Setting Dome Camera Video Signal & Coaxial Protocol



You can set video signal with D1 in S1.

S1-D1	Video Signal
OFF	HD-TVI OUTPUT
ON	AHD OUTPUT

You can set coaxial protocol with D2 and D3 in S1.

S1-D2	S1-D3	HD-TVI OUTPUT	AHD OUTPUT
OFF	OFF	Hikvision-C	Fastrax-C
ON	OFF	Pelco-C	Reserved
OFF	ON	Reserved	Reserved
ON	ON	Reserved	Reserved

2.6 Connections

- **Connecting to the RS-485**

The dome camera can be controlled remotely by an external device or control system, such as a control keyboard, using RS-485 half-duplex serial communications signals.

- **Connecting HD-TVI/AHD Output connector**

Connect the HD-TVI/AHD output (BNC) connector to the monitor or video input.

- **Connecting CVBS Output connector**

Connect the CVBS output (BNC) connector to the monitor or video input.

- **Connecting Alarms**

- **A1,A2,A3,A4 (Alarm Input 1,2,3,4)**

You can use external devices to signal the dome camera to react on events. Mechanical or electrical switches can be wired to the A1,A2,A3,A4 (Alarm Input 1,2,3,4) and G (Ground) connectors.

See Chapter 3 — Program and Operation for configuring alarm input.

- **G (Ground)**

NOTE: All the connectors marked G or GND are common.

Connect the ground side of the alarm input and/or alarm output to the G (Ground) connector.

- **AO1, AO2 (5VTTL Alarm Output 1,2)**

The dome camera can activate external devices such as buzzers or lights. Connect the device to the AO1,AO2 (Alarm Output 1,2) and G (Ground) connectors.

See Chapter 3 — Program and Operation for configuring alarm output.

- **Connecting the Power**

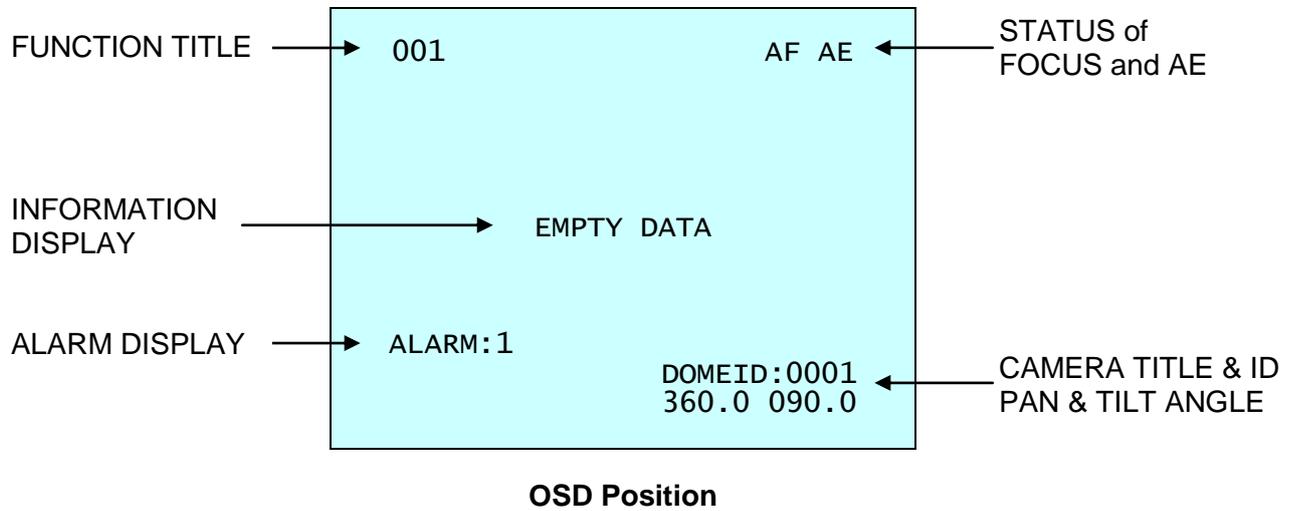
Connect power of 12VDC or 24VAC for the dome camera.

When using a 12VDC adapter, connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position.

Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.

2.7 Getting Started

Once installed apply power to the dome camera. The dome camera will start a configuration sequence.



Chapter 3 — Program and Operation

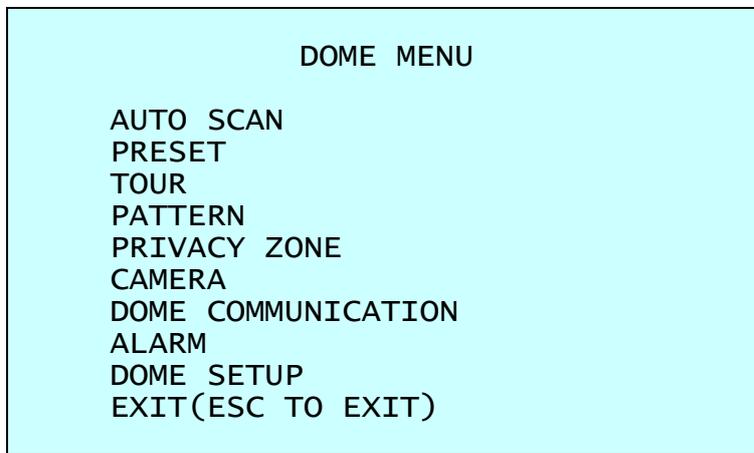
3.1 Dome Camera Selection

Before you program or operate a dome camera, you must select the dome camera by pressing **No. + CAM** keys from your controlling device (keyboard/DVR).

Example: Pressing **1** & **CAMERA** keys from a Vista VKBD4 keyboard sequentially, will select camera 1. The selected dome camera ID will be displayed on the LCD display of the keyboard controller.

3.2 Accessing the On-Screen Menu

Once the configuration sequence has finished, you can call up the On-screen menu of the dome by entering the Dome menu (on VKBD4, push hold **CAM** & push / let go **MODE** button)



3.3 How to control the On-Screen Menu

Function	Action required / Button Press Command
Open the On-Screen Menu	Camera Menu Command
Moving the cursor	Joystick Up, Down, Left, Right
Navigate through the menu.	Joystick Up or Down
Go into the sub-menu items.	Joystick right or IRIS Open/FOCUS Near Keys (IO/FN)
Changing values Enter the editing title mode.	Joystick left / right or Zoom via Joystick (Tele/Wide)
To enter the changing angle mode (e.g. presets, privacy etc).	IRIS Open/Focus Near (IO/FN)
To exit the changing angle mode (e.g. presets, privacy etc)	IRIS Close/Focus Far (IC/FF)
EXIT or Back a Step in the Menu	Joystick left or IRIS Close/Focus Far (IC/FF)

3.4 Auto Scan Setup

Allows the camera to be set up to move automatically between 2 programmed locations, the Auto Scan can be recalled from the controlling device using the **AUX6** command from a VKBD4.

```

                                AUTO SCAN SETUP

NUMBER                          : 01
TITLE                           : A01
MODE                             : NORMAL
SPEED                            : 5 STEP
START ANGLE                       : -----
END ANGLE                         : -----
SCAN DIR                          : CCW
SWAP                              : OFF
DWELL                             : 03 SEC
FOCUS                             : AUTO
SAVE AND EXIT(ESC TO CANCEL)

```

- NUMBER** 01 (cannot be changed – only 1no Auto Scan is available)
- TITLE** up to 6 characters
- MODE** NORMAL, VECTOR, RANDOM
 - NORMAL Move from start angle to end angle using only pan.
 - VECTOR Move from start angle to end angle linearly applying pan, tilt and zoom.
 - RANDOM Move randomly between the start angle and the end angle.
- SPEED** 1 – 13 steps, the lowest number means the slowest speed.
- START ANGLE** The 1st set of digits relates to the pan position, the 2nd set of digits relates to the tilt position.
- END ANGLE** The 1st set of digits relates to the pan position, the 2nd set of digits relates to the tilt position.
- SCAN DIR** Set the Scan direction, CCW (Counter Clock Wise), CW (Clock Wise).
- SWAP** Swaps the start angle for the end angle.
- DWELL** Set the dwell time at the start angle & end angle, between 01 – 99 seconds.
- FOCUS** AUTO, MANUAL

Follow steps below to set up the Auto Scan:

1. TITLE – this can be changed one of two ways:
 - Moving the **Joystick** left and right to select the cursor location and **(Tele/Wide)** to change the character.
 - Use the **Joystick** to move the cursor to the alpha numeric character table displayed and select the required character with the **(IO/FN)** keys.

```

                                TITLE EDIT MENU
                                (CTRL KEY)

A01
*

A B C D E F G H I J
K L M N O P Q R S T
U V W X Y Z 0 1 2 3
4 5 6 7 8 9 ( )
ALL DELETE
EXIT(ESC TO EXIT)

```

2. Select 'MODE' - adjust with **(Tele/Wide)**
3. Select 'SPEED' - adjust with **(Tele/Wide)**
4. 'START ANGLE'

Use the **Joystick** to move cursor to START ANGLE. Press the **(IO/FN)** key 'CONTROL' is displayed. Move the camera to the desired location and the zoom position. Press the **(IC/FF)** and 'CONTROL' disappears and START ANGLE is now set. To fine tune the Pan and Tilt position use **Joystick** to move the cursor to the field you wish to change and twist the **Joystick** to adjust the position in increments of 0.1 degree.

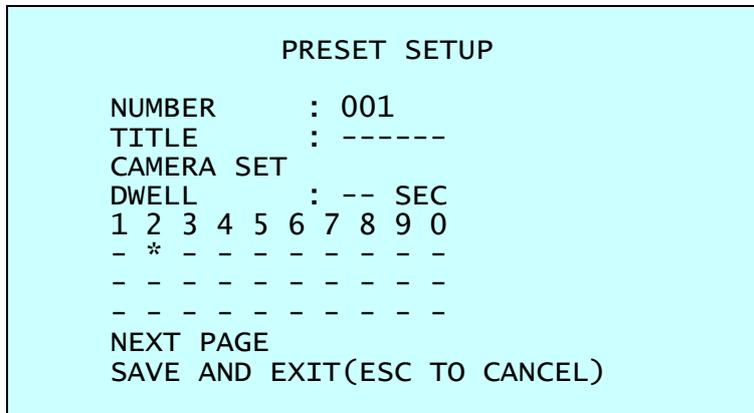
5. 'END ANGLE'

Use the **Joystick** to move cursor to END ANGLE. Press the **(IO/FN)** key 'CONTROL' is displayed. Move the camera to the desired location and the zoom position. Press the **(IC/FF)** and 'CONTROL' disappears and END ANGLE is now set. To fine tune the Pan and Tilt position use the **Joystick** to move the cursor to the field you wish to change and twist the **Joystick** to adjust the position in increments of 0.1 degree.

6. Select 'SCAN DIR' to CCW or CW - adjust with **(Tele/Wide)**
7. Select 'SWAP'. Set to ON, to swap the start angle and the end angle - adjust with **(Tele/Wide)**
8. Select 'DWELL time' - adjust with **(Tele/Wide)**
9. Select 'FOCUS' - adjust with **(Tele/Wide)**
10. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

3.5 Preset Setup

Up to 240 Presets may be programmed. Presets can be recalled **No. + PRESET**. Presets are very powerful and allow you to set the camera parameters and even a motion alarm for each preset. There are eight pages of Preset menu. Each page has 30 Presets. The pages can be scrolled by moving the **Joystick** to the NEXT PAGE and **(Tele/Wide)**.

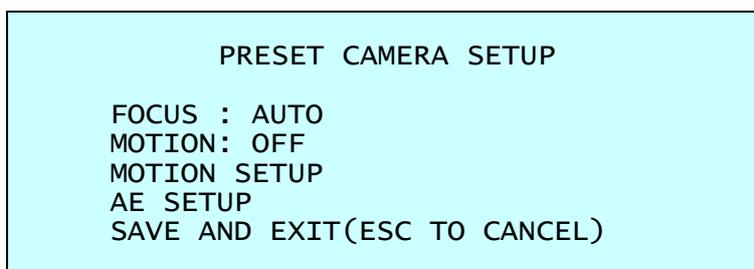


- A blank Preset position
- * The Position has a Preset already assigned
- ! The current cursor position

NOTE: Whilst the 'NUMBER' field at the top of this screen is adjustable, it does not update/auto populate the preset position lower down on the screen. So when setting up a preset position always use the lower part beneath 'DWELL' for this.

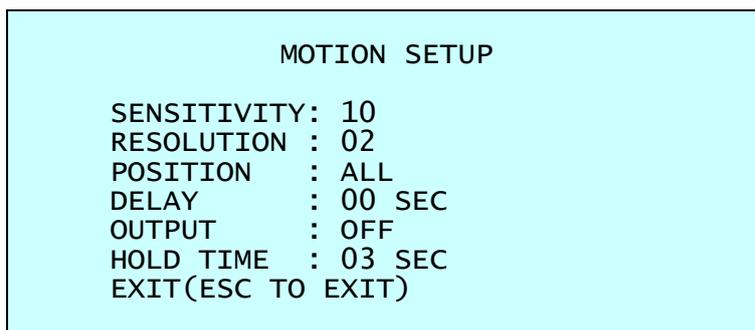
Follow steps below to store the Preset positions:

1. Use the **Joystick** to move the cursor to the preset position you wish to add/adjust.
2. After selecting a preset position (blank or already populated), press the **(IO/FN)** key 'CONTROL' is displayed. Move to the desired location and zoom position then press the **(IC/FF)** key then 'CONTROL' disappears. The Preset for this location is then set.
3. Select 'TITLE' – this can be changed one of two ways:
 - Moving the **Joystick** left and right to select the cursor location and **(Tele/Wide)** to change the character
 - Use the **Joystick** to move the cursor to the alpha numeric character table displayed and select the required character with the **(IO/FN)** keys.
4. Select 'CAMERA SET' and move **Joystick** to the right, the 'PRESET CAMERA SETUP' menu is displayed.



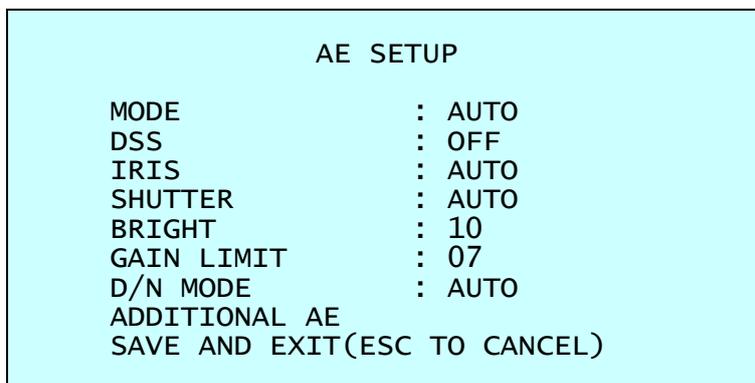
- Set FOCUS AUTO, MANUAL, ONE PUSH - adjust with **(Tele/Wide)**
- Set MOTION OFF, ON - adjust with **(Tele/Wide)**

Select 'MOTION SETUP' and move **Joystick** to the right, the 'MOTION SETUP' menu is displayed.



Set SENSITIVITY	00 – 20 - adjust with (Tele/Wide)
Set RESOLUTION	01 – 04 - adjust with (Tele/Wide)
Set POSITION	ALL, CENTER - adjust with (Tele/Wide)
Set DELAY	00 – 05 seconds - adjust with (Tele/Wide)
Set OUTPUT	OFF, OUT1, OUT2 - adjust with (Tele/Wide)
Set HOLD TIME	03 – 99 seconds - adjust with (Tele/Wide)

Select 'AE SETUP' and move **Joystick** to the right, the 'AE SETUP' menu is displayed.



MODE	AUTO, MANUAL, I.PRIO, S.PRIO
AUTO	Auto exposure mode
MANUAL	Variable Iris, Shutter speed
I.PRIO	Variable Iris, Auto Shutter speed
S.PRIO	Variable Shutter speed, Auto Iris
DSS	OFF, x2 – x8
IRIS	F1.8 – F32
SHUTTER	1/25 – 1/30000
BRIGHT	0 – 20
GAIN LIMIT	0 – 7
D/N MODE	AUTO, B/W, COLOUR

The D/N MODE option removes the IR cut filter of the camera and makes the camera sensitive to near infrared.

AUTO	Camera goes in to B/W (monochrome) mode at low light. (Determined the GAIN setting)
B/W	Permanent monochrome mode
COLOUR	Permanent colour mode

These 3 settings can be temporarily overridden for a 60 second period via the day/night command function from the VKBD4.

NOTE: AUTO in D/N MODE option is not applied in 'MANUAL' mode of AE Setup.

Select 'ADDITIONAL AE' and move **Joystick** to the right, the 'ADDITIONAL AE SETUP' menu is displayed.

ADDITIONAL AE SETUP	
ACE	: OFF
WDR	: OFF
WDR WEIGHT	: --
BLC	: OFF
HLC	: OFF
HLC LEVEL	: --
HLC COLOR	: ---
DEFOG	: OFF
EXIT(ESC TO EXIT)	

ACE	OFF, LOW, MID, HIGH
WDR	OFF, ON, NIGHT OFF (NOTE: When ON, BLC will be disabled.)
WDR WEIGHT	LOW, MID, HIGH
BLC	OFF, ON (NOTE: When ON, WDR will be disabled.)
HLC	OFF, ON
HLC LEVEL	0 – 20
HLC COLOR	BLACK, WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE
DEFOG	OFF, ON

5. Set 'DWEELL time' (03 - 99 seconds in steps of 1) - adjust with **(Tele/Wide)**
6. To select the next page of Presets, scroll the page by moving the **Joystick** to the left or right on the first or last columns of the menu.
7. Repeat step 2 through 6 for each additional Preset position.
8. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

3.6 Quick Setting a Preset

This can be achieved after selecting the desired scene e.g. with VKBD4 by pressing **FUNCTION (Fn)** then the **No. (1 to 240)** then **PRESET** key sequentially. The current view will be stored to the selected Preset number.

If the Preset number is not empty, an '*OVER WRITE*' message will be displayed on the screen and select to 'OK' or 'Cancel' as required and move **Joystick** to the right to confirm.

Example: **FN, 1, 0, 1, PRESET** keys will store current view as Preset no. **101**. In this case, focus will be programmed as Auto, dwell time will be set to 3 second, and the current AE mode will be used.

NOTE: If the password is set to **ON** within the Dome, then this will need to be entered to accept the new or when amending a Preset.

3.7 Tour Setup

There are 8 programmable Tours. Each Tour consists of up to 40 Preset positions, Patterns, Scan or other Tours (second-level). Using second-level Tours, a Tour can be expanded to over 300 functions in a single Tour. Tours can be recalled **No. + TOUR**.

```

          TOUR SETUP

NUMBER           : 01
TITLE            : T01
SCAN TYPE       : NORMAL
SPEED           : -- STEP
TOUR FUNC
SAVE AND EXIT(ESC TO CANCEL)
  
```

```

          TOUR FUNC SETUP
                          (CTRL KEY)

DWELL            : -- SEC
003 A01 ---- ---- ----
---- ---- ---- ----
---- ---- P01 ---- ----
---- T02 ---- ---- ----
---- ---- ---- ----
---- ---- ---- ----
---- ---- ---- ----
EXIT(ESC TO EXIT)
  
```

- | | |
|-----------|------------------|
| --- | Blank position |
| SCAN TYPE | NORMAL, VECTOR |
| DWELL | 03 – 99 seconds |
| 003 | Preset (1 – 240) |
| A01 | Auto Scan (1) |
| P01 | Pattern (1 – 8) |
| T02 | Tour (1 – 8) |

Follow the steps below to program the Tours:

1. Select 'NUMBER' and set the desired number by moving the **Joystick** to the left or right.
2. Choose a blank position to be programmed by moving the **Joystick** up, down, right, or left.

3. To scroll to a stored Preset, adjust with **(Tele/Wide)** then the stored Preset number displays.
4. To select functions other than Preset, press the **(IO/FN)** key to scroll for Tour, Pattern or Auto Scan respectively (if you wish to remove a Preset or Function from a Tour keep pushing **(IO/FN)** until '---' is displayed in the position).
5. Repeat step 1 through 4 for each desired position. Each title (if programmed) will be displayed on top of the line.
6. Select 'TITLE' – this can be changed one of two ways:
 - Moving the **Joystick** left and right to select the cursor location and **(Tele/Wide)** to change the character
 - Use the **Joystick** to move the cursor to the alpha numeric character table displayed and select the required character with the **(IO/FN)** keys.
7. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

You can expand the Tour sequence by inserting another Tour into one of the '---' positions, just as you would a Preset.

NOTE: You cannot allocate a Preset or Function into a Tour without it being programmed first. The speed applies in Vector mode only. If you require the picture to 'freeze' between presets, this can be found in the cameras set-up menu.

3.8 Pattern Setup (Learn Tour)

The Pattern feature records up to a maximum of 500 seconds of user control. Up to 8 Patterns can be stored, inserted into a Tour and played back by pressing the **No. + Learn** keys sequentially.

PATTERN SETUP			
NO	TITLE	SEC	(CTRL KEY) PERCENT
1	:	P01	000 00.0%
2	:	P02	000 00.0%
3	:	P03	000 00.0%
4	:	P04	000 00.0%
5	:	P05	000 00.0%
6	:	P06	000 00.0%
7	:	P07	000 00.0%
8	:	P08	000 00.0%
SAVE AND EXIT(ESC TO CANCEL)			

Follow steps below to program the Pattern:

1. Select the desired Pattern to be programmed by moving the **Joystick** up or down. If the Pattern is not 000, a Pattern has already been recorded. Patterns can be overwritten.
2. Press the **(IO/FN)** key then the 'CONTROL' displays. Move the Dome through the required field of view applying zoom if required - the Dome movement will be automatically recorded. Press the **(IC/FF)** key then 'CONTROL' disappears.
3. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.
4. Select 'TITLE' – this can be changed one of two ways:
 - Moving the **Joystick** left and right to select the cursor location and **(Tele/Wide)** to change the character
 - Use the **Joystick** to move the cursor to the alpha numeric character table displayed and select the required character with the **(IO/FN)** keys.

NOTE: The 500 seconds of Pattern memory does not have to be evenly distributed across the Patterns. E.g. Pattern 1 can have entire 500 seconds allocated to it if required. Each dome movement uses memory to store the change – the % column shows how much of the total pattern memory has been used for each tour and also gives the running total at the bottom.

3.9 Privacy Zone Setup

Up to 16 Privacy Zones may be programmed. There are four pages of Privacy Zones menu. Each page has 4 Privacy Zones. The pages can be scrolled by moving the **Joystick** to the NEXT PAGE and **(Tele/Wide)**.

PRIVACY ZONE SETUP			
(CTRL KEY)			
NO		METHOD	COLOR
01	ON	BLOCK	BLACK
02	ON	BLOCK	BLACK
03	OFF	-----	BLACK
04	OFF	-----	BLACK
NEXT PAGE			
SAVE AND EXIT(ESC TO CANCEL)			

Follow steps below to program the Privacy Zone:

1. Select the Privacy Zone you wish to set using the **Joystick** to highlight location. Press the **(IO/FN)** key, 'CONTROL' is displayed and Privacy Area Menu displays. Move to the desired position. Press the **(IC/FF)** key then 'CONTROL' disappears and returns to the previous menu.

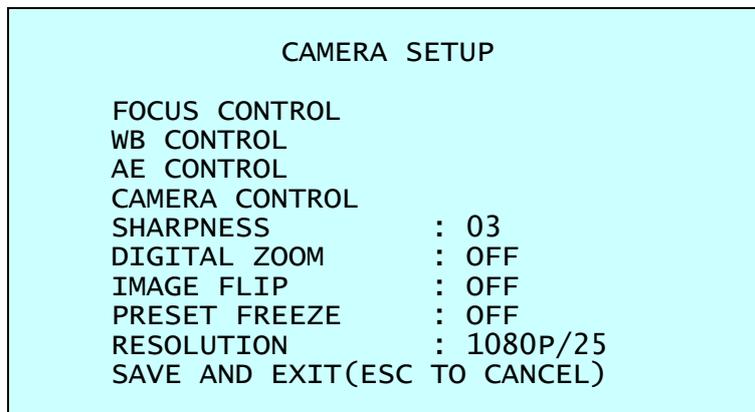
NOTE: The Privacy Zone is set to the actual screen size and **NOT** the Privacy Area 'targeting' display on the screen, so you will need to zoom in to suit.

PRIVACY AREA MENU	
(CTRL KEY)	
NUMBER 01	
354.8	344.8
EXIT(ESC TO EXIT)	

2. To select between on or off - adjust with **(Tele/Wide)**
3. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

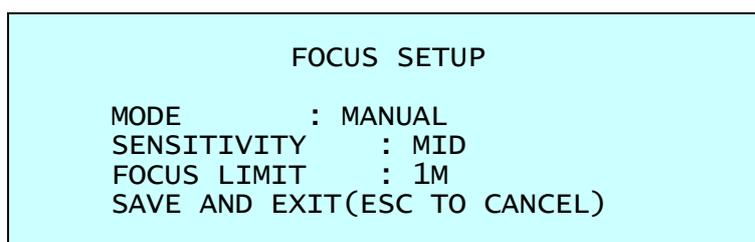
3.10 Camera Setup

Use the **Joystick** to move the cursor, right to select sub menu (if applicable) and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



- SHARPNESS** The higher the value, the more the edging in the picture will be enhanced. (0 ~ 10)
- DIGITAL ZOOM** OFF: Optical zoom only
2X: 2x digital zoom
4X: 4x digital zoom
8X: 8x digital zoom
MAX: 16x digital zoom
- IMAGE FLIP** This function turns the video output from the camera upside down, reverses it horizontally and corrects telemetry commands.
NOTE: This allows the camera to be floor mounted.
- PRESET FREEZE** ON: The image from the previous Preset is held until the camera moves to the next Preset location.
- RESOLUTION** HD-TVI Output: 1080p/30, 1080p/25, 720p/60, 720p/50, 720p/30, 720p/25
AHD Output: 1080p/30, 1080p/25

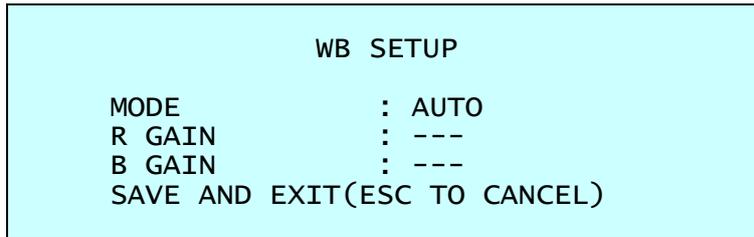
• FOCUS SETUP



- MODE** AUTO (AF) – Permanently in AF mode (no focal control override)
MANUAL (MF) – In MF mode when moving, once stopped goes to AF for approx. 4 seconds then reverts to MF (focal control override)
ONE PUSH – In MF mode when moving, once stopped goes to AF until moved again (focal control override)
CONSTANT MANUAL – Permanently in MF mode (focal control override) use manual mode in normal use.
- SENSITIVITY** LOW, LOW.MID, MID, MID.HIGH, HIGH
- FOCUS LIMIT** This is approximate minimum distance that the focus will try to resolve.

CAUTION: Avoid continuous, 24-hour use of the auto focus. This will shorten the lifespan of the lens, refer to Appendix C – Warranty

• **WB SETUP (White Balance)**



MODE AUTO, MANUAL, INCANDESCENT, FLUORESCENT, OUTDOOR

AUTO Automatically computes the picture's white balance using colour information from the entire screen.

INCANDESCENT Incandescent white balance mode

FLUORESCENT Fluorescent white balance mode

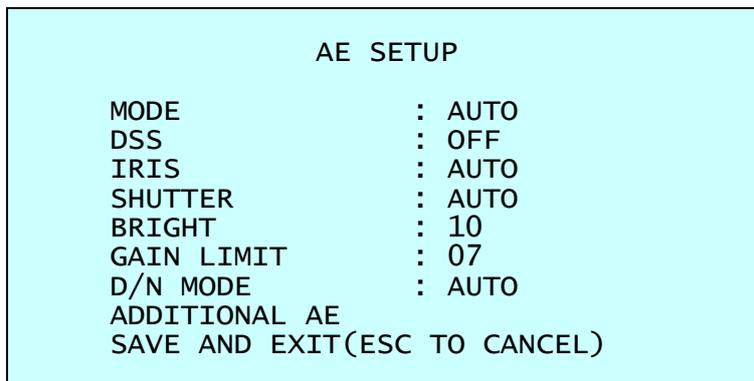
OUTDOOR Outdoor white balance mode

MANUAL Manual white balance mode
User changes R (Red) & B (Blue) Gain manually.

R GAIN 0 – 255
B GAIN 0 – 255

NOTE: R GAIN / B GAIN modes are only controllable in MANUAL Mode.

• **AE SETUP (Auto Exposure)**



MODE AUTO, MANUAL, I.PRIO, S.PRIO

AUTO Auto exposure mode

MANUAL Variable Iris, Shutter speed

I.PRIO Variable Iris, Auto Shutter speed

S.PRIO Variable Shutter speed, Auto Iris

DSS OFF, x2 – x8

IRIS F1.8 – F32

SHUTTER 1/25 – 1/30000

BRIGHT 0 – 20

GAIN LIMIT 0 – 7

D/N MODE AUTO, B/W, COLOUR

The D/N MODE option removes the IR cut filter of the camera and makes the camera sensitive to near infrared.

AUTO Camera goes in to B&W (monochrome) mode at low light.
(Determined the GAIN setting)

B/W Permanent monochrome mode
 COLOUR Permanent colour mode

These 3 settings can be temporarily overridden for a 60 second period via the day/night command function from the VKBD4.

NOTE: AUTO in D/N MODE option is not applied in 'MANUAL' mode of AE Setup.

ADDITIONAL AE SETUP

ADDITIONAL AE SETUP	
ACE	: OFF
WDR	: OFF
WDR WEIGHT	: --
BLC	: OFF
HLC	: OFF
HLC LEVEL	: --
HLC COLOR	: ---
DEFOG	: OFF
EXIT(ESC TO EXIT)	

ACE OFF, LOW, MID, HIGH
WDR OFF, ON, NIGHT OFF (**NOTE:** When ON, BLC will be disabled.)
WDR WEIGHT LOW, MID, HIGH
BLC OFF, ON (**NOTE:** When ON, WDR will be disabled.)
HLC OFF, ON
HLC LEVEL 0 – 20
HLC COLOR BLACK, WHITE, YELLOW, CYAN, GREEN, MAGENTA, RED, BLUE
DEFOG OFF, ON

• CAMERA CONTROL SETUP

CAMERA CONROL	
D->N LEVEL	: 070
N->D LEVEL	: 030
D/N DELAY	: 03 SEC
CHROMA	: 08
GAMMA	: 2
DNR	: MID
DIS	: OFF
SAVE AND EXIT(ESC TO CANCEL)	

D->N LEVEL 0 – 255
N->D LEVEL 0 – 255
D/N DELAY 1 – 60 seconds
CHROMA 0 – 20
GAMMA 0 – 4
DNR OFF, LOW, MID, HIGH
DIS OFF, ON

3.11 Dome Communication

To prevent damage, each dome camera must have a unique address (ID).
The factory default setting is 1.

```

                                DOME COMMUNICATION
                                *
DOME ID       : 0001
PROTOCOL      : AUTO
BAUDRATE      : 9600
PARITY        : NONE
TERMINATION    : OFF
SAVE AND EXIT(ESC TO CANCEL)

```

DOM E ID	1 – 3999
PROTOCOL	AUTO, F2/F2E, PELCO-PD, VISTA
BAUDRATE	2400, 4800, 9600, 19200, 38400 bps
PARITY	NONE, EVEN, ODD
TERMINATION (RS-485)	OFF, ON

3.12 Alarm Setup

Use the **Joystick** to move the cursor and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

ALARM SETUP						
						(CTRL KEY)
NO	PRI	FUN	IN	OUT	HLD	LATCH
1	1	001	NO	OUT1	01	OFF
2	1	---	OFF	OFF	01	OFF
3	1	---	OFF	OFF	01	OFF
4	1	---	OFF	OFF	01	OFF
DWELL					:	03 SEC
ALARM OUT SETUP						
SAVE AND EXIT(ESC TO CANCEL)						

- NO (Number)** alarm input number
- PRI (Priority)** the lower number has higher priority (0 – 4)
- FUN (Function)** Stored Preset or Function number to be called by alarm.
- IN (Input)** NO/NC – normally open/closed, OFF – ignore
- OUT (Output)** OUT1/OUT2 – 5VTTL output, OFF – no output
- HLD (Hold)** Alarm will be held for programmed time. (01 to 99 seconds)
- LATCH** ON – Alarm message will remain on the screen even though alarm input is deactivated.
OFF – Alarm message will disappear from the screen after programmed hold time when alarm input is deactivated.
- DWELL** means the dwell time during multiple alarms, 03 to 99 seconds.

ALARM OUT SETUP	
OUT1	: ALARM
OUT2	: 1 MIN
EXIT(ESC TO EXIT)	

ALARM: alarm output is operated during an alarm operation or by the short key of our keyboard.

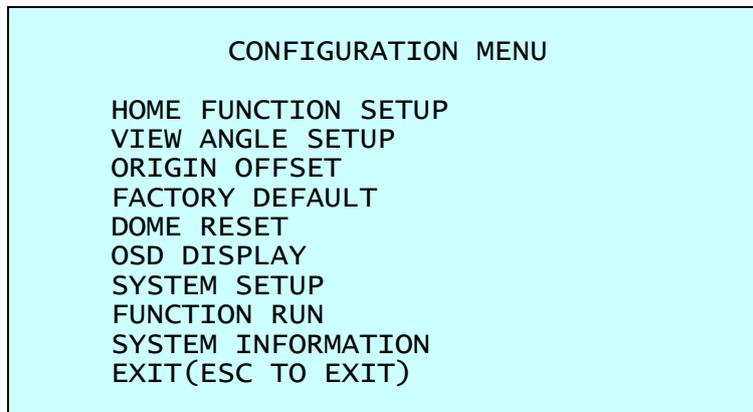
1 ~ 5 MIN (minute): alarm output is operated during this setting time only by the function run of the dome menu or the short key of our keyboard.

NOTE: This 1 ~ 5 MIN setting is not operated by an alarm.

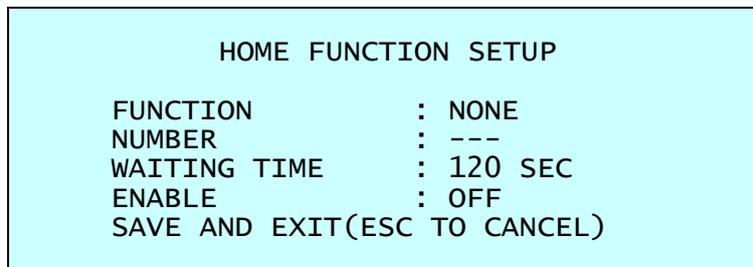
There are 5 levels of priority, with 0 being the highest priority. The function allows Preset, Auto scan, Pattern or a Tour to be selected. Lower priority alarms will not occur until the higher priority alarm is completed. Alarms with equal priority will be rotate sequentially with the dwell time.

3.13 Configuration Menu (Dome Setup)

Use the **Joystick** to move the cursor, right to select sub menu (if applicable) and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



• HOME FUNCTION SETUP



FUNCTION	NONE, TOUR, PATTERN, AUTO SCAN, PRESET
NUMBER	---
WAITING TIME	10 – 240 seconds
ENABLE	ON, OFF

The Home Function can be set so that the camera automatically goes to Tour, Pattern, Auto Scan or Preset after the keyboard controller has been idle for a specified amount of time.

E.g. If the controller is idle for 120 seconds, the camera goes to Preset 1 after this time.

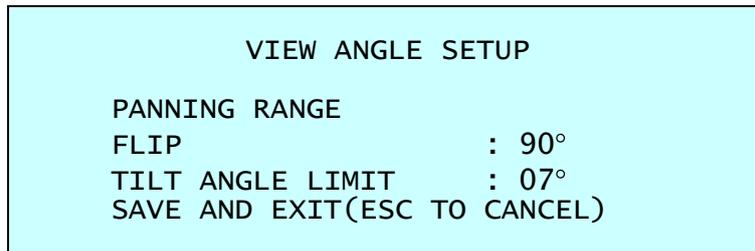
Follow these steps to program the Home position:

1. Select 'HOME FUNCTION' by moving the **Joystick** and **(Tele/Wide)** to scroll through the None (---), Tour, Pattern, Auto Scan or Preset functions.
2. Select 'FUNCTION NUMBER' and **(Tele/Wide)** to scroll through the recorded function number.
3. Select 'WAITING TIME' and **(Tele/Wide)** to select between 10 to 240 seconds in 5 sec increments.
4. Select 'FUNCTION ENABLE' and adjust with **(Tele/Wide)**.

NOTE: Only pre-programmed presets and functions (tour / pattern / auto scan) can be used.

• VIEW ANGLE SETUP

Use the **Joystick** to move the cursor and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



FLIP OFF, AUTO, 90°, 100°, 110°, 120°

OFF: The camera moves to the 90° point vertically and stops.

AUTO: When the camera reaches the 90° point vertically, it rotates 180° and then tilt up in one action. When you use the panning range, it is recommended to use the flip mode to AUTO.

90°, 100°, 110°, 120°: Allows the image to flip digitally when the camera moves over the setting angle vertically.

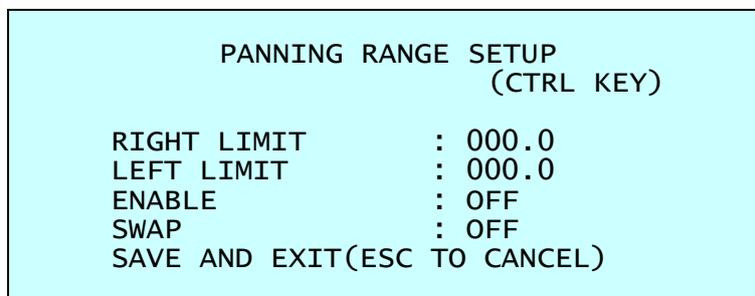
TILT ANGLE LIMIT -10° ~ 10°

This option is designed to limit the view angle and to stop the camera viewing the housing and edge of the bubble.

NOTE: Focus issues may occur in certain conditions.

PANNING RANGE (Electronic Limit Stops)

If the Dome is installed close to a wall or public boundary whereby the camera needs to be restricted from viewing this area then the panning range can be set up to stop this.

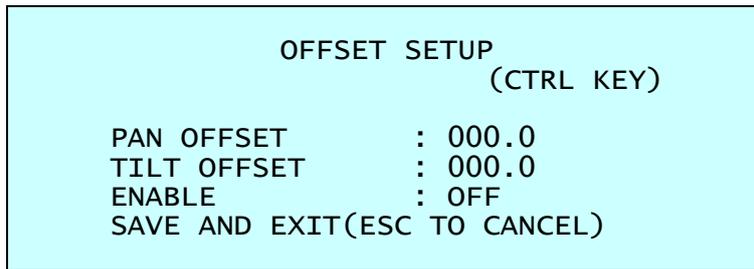


1. Select 'RIGHT LIMIT'. Press the **(IO/FN)** key, then 'CONTROL' is displayed. Move to the desired position. Press the **(IC/FF)** key then the 'CONTROL' disappears.
2. Select 'LEFT LIMIT'. Press the **(IO/FN)** key, then 'CONTROL' is displayed. Move to the desired position. Press the **(IC/FF)** key then the 'CONTROL' disappears.
3. Select 'ENABLE'. Set to ON - adjust with **(Tele/Wide)**
4. Select 'SWAP'. Set to ON, to swap the start RIGHT & LEFT LIMITS - adjust with **(Tele/Wide)**
5. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

NOTE: When the flip mode is 90°, 100°, 110° or 120° and you moves over 90° vertically, the panning range operates in opposite side.

- **OFFSET SETUP (Origin Offset)**

Use the **Joystick** to move the cursor and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



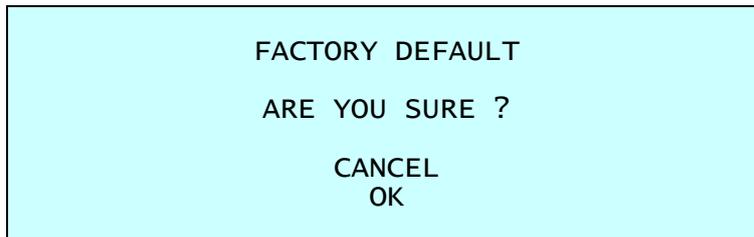
This feature is useful in aligning a new dome camera exactly the same as the previously installed Dome camera.

Dome camera's origin set and all data initialize option do not override offset values. Only the default set option in this menu will set the offset value to zero. This can be used to avoid ceiling obstructions.

- **FACTORY DEFAULT**

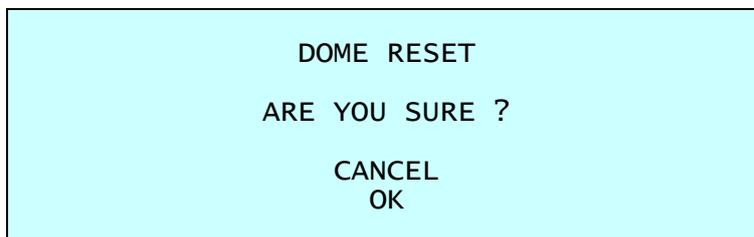
Select 'FACTORY DEFAULT' to initialize the Data.

Use the **Joystick** to move the cursor and right or **(IO/FN)** to accept selection.



- **DOMES RESET**

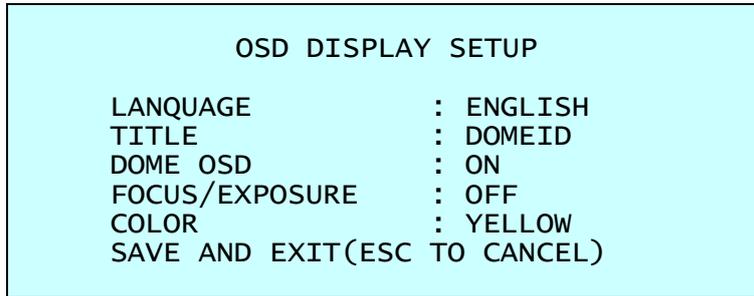
Use the **Joystick** to move the cursor and right or **(IO/FN)** to accept selection.



This feature is used to re-calibrate the orientation of a selected dome camera. Origin offset value is not affected by this function. (Offset is still valid after origin set.)

• **OSD DISPLAY SETUP**

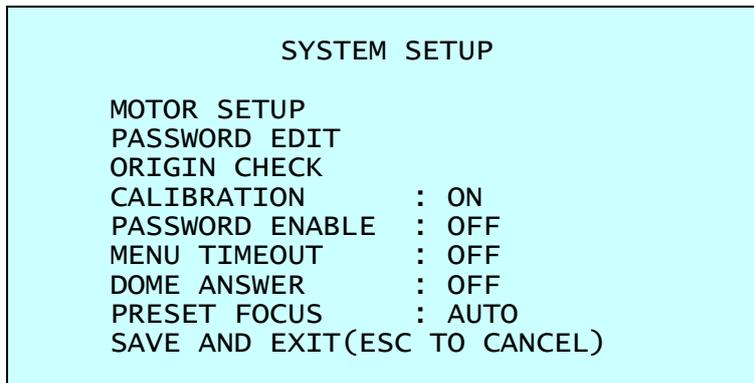
Use the **Joystick** to move the cursor, right to select sub menu (if applicable) and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



- LANGUAGE** Select the desired language.
- TITLE** up to 6 characters
- DOME OSD** ON, POSITION, ON(ZOOM), ZOOM, OFF
All displays or titling will disappear when DOME OSD DISPLAY is set to OFF.
- FOCUS/EXPOSURE** ON, OFF
ON: FOCUS and EXPOSURE displays. (AF AE)
- COLOR** YELLOW, GRAY, BLUE

• **SYSTEM SETUP**

Use the **Joystick** to move the cursor, right to select sub menu (if applicable) and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.



- CALIBRATION** ON (Auto origin check), OFF
- PASSWORD ENABLE** ON (requires the password to enter menu), OFF
- MENU TIMEOUT** ON (5 minutes), OFF (menu always on)
- DOME ANSWER** ON, OFF (no acknowledge command from the dome)
This option should be left OFF unless the keyboard/DVR/controlling device and/or Protocol specifically ask for it to be switched ON.
- PRESET FOCUS** AUTO, MANUAL, ONE PUSH
This option set the default mode of the focus when you save the Preset.

MOTOR SETUP

Use the **Joystick** to move the cursor and **(Tele/Wide)** to adjust. To save changes highlight 'SAVE AND EXIT' and move **Joystick** right. **Joystick** left exits without saving.

```

MOTOR SETUP

PROPORTIONAL P/T      :  ON
P/T MODE              :  NORMAL
SLOW PAN MAX          :  40
SLOW TILT MAX         :  40
NORMAL PAN MAX        :  90
NORMAL TILT MAX       :  90
TURBO PAN MAX         :  360
TURBO TILT MAX        :  100
SAVE AND EXIT(ESC TO CANCEL)
    
```

PROPOTIONAL P/T	ON, OFF
P/T MODE	SLOW, NORMAL, TURBO
SLOW PAN Maximum speed	19° ~ 90°/second
SLOW TILT Maximum speed	19° ~ 90°/second
NORMAL PAN Maximum speed	40° ~ 360°/second
NORMAL TILT Maximum speed	40° ~ 200°/second
TURBO PAN Maximum speed	200° ~ 380°/second
TURBO TILT Maximum speed	90° ~ 300°/second

PASSWORD EDIT SETUP

Use the **Joystick** to move the cursor and **(IO/FN)** to accept character entry.

```

PASSWORD EDIT SETUP
                                (CTRL KEY)

INPUT PASSWORD
PASSWORD:

A B C D E F G H I J
K L M N O P Q R S T
U V W X Y Z 0 1 2 3
4 5 6 7 8 9 ( )

SAVE AND EXIT(ESC TO CANCEL)
    
```

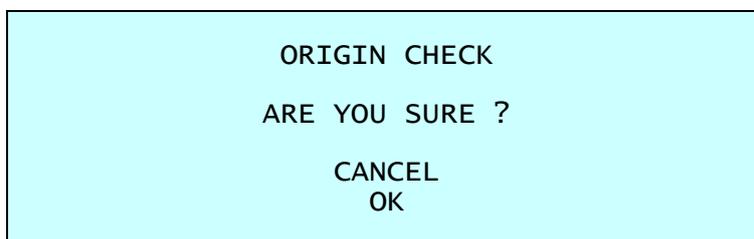
By default, there is no password set on the camera. You can select a 6 character alpha numeric code in this menu, once entered you will required to enter it a 2nd time to confirm.

NOTE: Please keep a safe record of your password. If it is lost then the dome may need to be returned to gain access to the menus.

ORIGIN CHECK

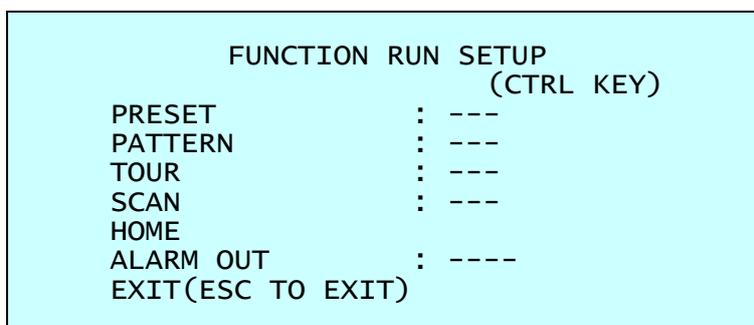
If the presets or privacy zones appear to have moved, carry out an origin check as this will be zero the camera module position.

Use the **Joystick** to move the cursor and right or **(IO/FN)** to accept selection.



• FUNCTION RUN SETUP

This Function Run menu allows you to execute the function when you use a keyboard or a DVR without the function keys (Preset, Pattern, Tour and Scan).



1. Select the desired Function by moving the **Joystick** up or down.
2. Select the number by twisting the **Joystick** in PRESET, PATTERN, TOUR and SCAN.
3. **(IO/FN)** to execute.

NOTE: To execute the function, you should save the function (PRESET, PATTERN, TOUR and SCAN) first.

- HOME

Select 'HOME' and **(IO/FN)** to execute. The dome camera goes to the default position that it returns to after an assigned period of inactivity passes. The default position may be a Preset, Tour, Pattern or no action.

- ALARM OUT

This function can operate only when the alarm out setup has the time in the alarm menu.

Cont/...

```
                ALARM OUT SETUP

OUT1   : ALARM
OUT2   : 1 MIN
EXIT(ESC TO EXIT)
```

(IO/FN) to operate alarm out during the setting time only.

• **SYSTEM INFORMATION**

```
                SYSTEM INFORMATION

CAMERA TYPE      : xxxx-Vx.xx
H/W VERSION     : Vx.xx-xxxx
ROM VERSION     : Vx.xxxxxx
PROTOCOL        : xxxx
BAUDRATE        : 9600(NONE)

HD B/D VERSION  : Vx.xx

EXIT(ESC TO EXIT)
```

The system information provides essential information about the dome camera if service is required. This screen displays the camera type and ROM version. The information on this screen cannot be modified.

Appendix A — Specifications

		VP-HDA20-SM
IMAGE		
Lens	20x 4.7mm ~ 94.0mm (F1.6 – 3.0)	
Angle of View	55.5° (H) ~ 3.0° (H)	
Image Sensor	Type	1/2.8" SONY STARVIS CMOS sensor
	Pixels	1945 (H) x 1097 (V)
Min. Illumination	Color : 0.35 Lux @ 50IRE BW : 0.013 Lux @ 50IRE	
Scanning Mode	Progressive Scan	
Wide Dynamic Range	True WDR	
Day and Night Mode	True D/N (Auto, Day, Night)	
Noise Reduction	3DNR	
Digital Zoom	16x	
Exposure Control	Auto, Manual, Shutter Priority, Iris Priority	
White Balance Control	Auto, Manual, Incandescent, Fluorescent, Outdoor	
Back Light Compensation	Yes	
Image Effect	Flip (Digital)	
Shutter Speed	25/30fps : Auto (1/30,000 ~ x8 sec.), Manual 50/60fps : Auto (1/50,000 ~ x8 sec.), Manual	
VIDEO		
Resolution	HD-TVI : 1080p @ 25/30ips, 720p @ 25/30/50/60ips AHD : 1080p @ 25/30ips CVBS : 600TVL	
Video Output	HD-TVI or AHD, Composite (CVBS)	
DIS	Yes	
Defog	Yes	
PTZ Function		
Pan Range	360° continuous	
Pan Speed	Max. 380°/sec. (Preset)	
Tilt Range	-10° ~ 190°	
Tilt Speed	Max. 380°/sec. (Preset)	
Auto Calibration	0.1° ~ 6°	
Auto Scan	1 Auto Pan & 16 Auto Scans	
Preset	240	
Tour	8	
Pattern	8	
Home Function	Yes	
Privacy Mask Zone	16 Programmable Zones	
EXTERNAL IN/OUT		
Video HD-TVI/AHD Output	BNC Jack	
Video Composite Output	BNC Jack	
Alarm	4 Inputs, 2 Outputs (Terminal Block)	
Control	RS-485, Baud Rate: 2400 ~ 38400 bps (Default: 9600 bps)	
ID (Camera Address)	1 ~ 3999	

ETC	
Operating Humidity	0 ~ 90%RH (Non-condensing)
Operating Temperature	-10°C ~ 50°C
Power Supply	12VDC, 24VAC
Power Consumption	1.0A (12.0W) @ 12VDC, 24VAC
Dimensions	See dimension drawing
Net Weight	Approx. 1.6kg
Ingress Protection	IP66
Vandal Resistance	IK10 (BS EN 62262)

* Specifications are subject to change without notice *

UNIT : mm

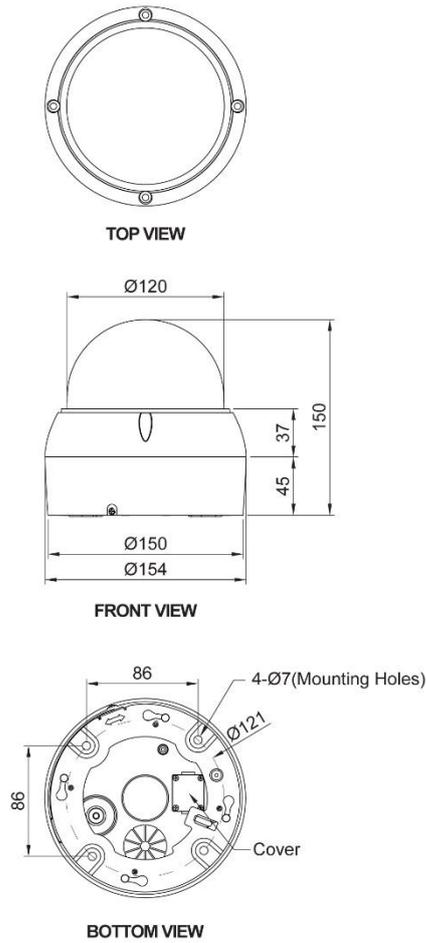


Figure – Dimension

Appendix B — Troubleshooting

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment. Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

Problem	Possible Solution
No video.	Verify that power is connected to all pieces of equipment in the system. Verify that the power switches are in the ON position. Check the video connections.
Poor video quality.	Check that the BNC connectors are inserted properly. Check the voltage level of the dome camera. Cable for video is shielded.
Dome cameras lose their positions.	Reset the cameras using the Dome configuration menus. Check that the dome cameras are inserted properly in the base. Check the voltage level of the dome camera.
Camera number does not match the multiplexer number.	Check the camera ID and insert the BNC cable into the proper input of the multiplexer.

Appendix C — Warranty

This camera is subject to the warranty conditions valid at the time of purchase. The exception to this is:

Using the camera in continuous motion applications; e.g. Auto Scan, Tour or Pattern functions with Auto Focus (Auto (AF)) will reduce the warranty to 6 months.



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(Subject to change without notice)

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