MINI SPEED DOME CAMERA

10X Mini Speed Dome Camera
Instruction Manual

CONTENTS

WARNINGS & CAUTION

If you fail to read this information and handle the product incorrectly, death or serious injury may occur.

The unit should be installed by the trained personnel

Switch off immediately if the product emits smoke or abnormal heat.

Never install the product in area exposed to water, oil or gas.

Never install the product on a ceiling that cannot hold its weight.
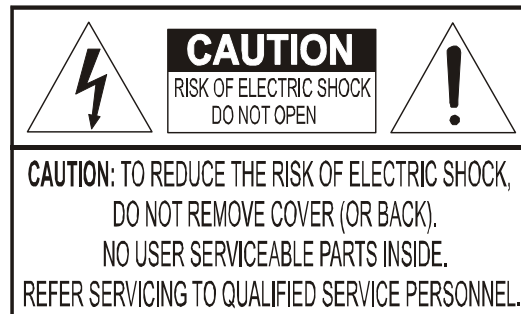
Never touch the power cord with wet hands.

Clean only with dry cloth.

Never install the product in extreme high or low temperature.

Ensure that the product is not subjected to strong impacts and vibration

Never expose the camera to direct sunlight

Never touch the front glass of the product.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

This symbol is intended to alert the user to the presence of un-insulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

Warning

Never manually move the pan/tilt assembly. Serious and permanent damage will occur

What's in the Box ?

1. Camera
2. Screws (Ø4x16 screw   5EA)
3. **Screws (Ø3.5x30 screw   3EA)**
4. Terminal block (5pin 2EA)
5. Manual
6. Screw Cap (1 EA)
7. **Wrench**
8. **Safety Wire**

GENERAL FEATURES

100X Zoom Mini Speed Dome

10X Optical Zoom with 10X digital zoom

±0.02° dome system accuracy with full micro step

With 0.1° positional accuracy, the camera provides excellent sensitive and delicate control. This is achieved by full micro step motors and twin gear system

360° Endless Rotation

10X mini speed dome is capable of endless rotation of 360 degrees

Compensation function: preset position

The function provides absolute preset position even in difficult applications where vibration and strong winds may otherwise affect dome performance.

Over 200°/Sec Preset Speed

The 360° full pan function moves through a maximum of 200°/sec., enabling you to quickly pinpoint the spot you want to watch. Tilt speed is also driven at 200°/sec on preset seek.

Polarity Protection of Power (DC12V)

This protection function prevents damage to the domes power board if the dc supply is connected with incorrect polarity.

Filter changeable True Day/Night

Top quality images are assured under day and night conditions due to the true day / night camera with IR cut filter. Low light sensitivity is further increased by the cameras digital slow shutter.

Indoor / Outdoor applications

The domes small size and construction to IP 66 ingress protection rating make it ideal for internal or external applications.

Quick Operation Keys

This camera provides quick function keys to allow control by most keyboards and DVRs that have Pelco protocol support.

Various Surveillance Functions

Auto Scan repeats pan and tilt between two preset positions with different speed and dwell time.
8 Group Tour up to 8 Programmable Group tours are available with each group is consisting of up to 60 preset steps with different speed and dwell times along with 16 character titling.
165 Preset positions up to 165 programmable preset positions are available with 16 character title.
8 Patterns up to 8 programmable user-defined patters are available with 16 character title. Each can be up to 50 seconds long, giving a total of 400 seconds.
8 Sectors up to 8 programmable user-defined sectors are available with 16 character titling.
4 Privacy Masking Zones up to 4 programmable user-defined privacy masking zones are available.
4 Alarm input up to 4 alarms can be wired to the dome head and can activate presets, tours, or patterns.

150°/S – Manual speed

The dome provides up to 150°/sec of manual speed and is also adjustable from 100°/sec to 150°/sec in 10°/sec increments.

1/4" Sony Super HAD CCD

Equipped with Sony Super HAD CCD technology, the camera provides excellent sensitivity and low smear levels.

Intelligent Pan/Tilt Controlling

Intelligent Pan/Tilt function is continually increases or decreases pan and tilt speeds in proportion to zoom.

Dome Housing

The elegantly designed aluminum body and Poly Carbonate dome cover provide a very solid product for a wide range of applications.
.

Password Protection

It is possible to password protect all dome settings to prevent unauthorized changes.

NAMES OF EACH PART
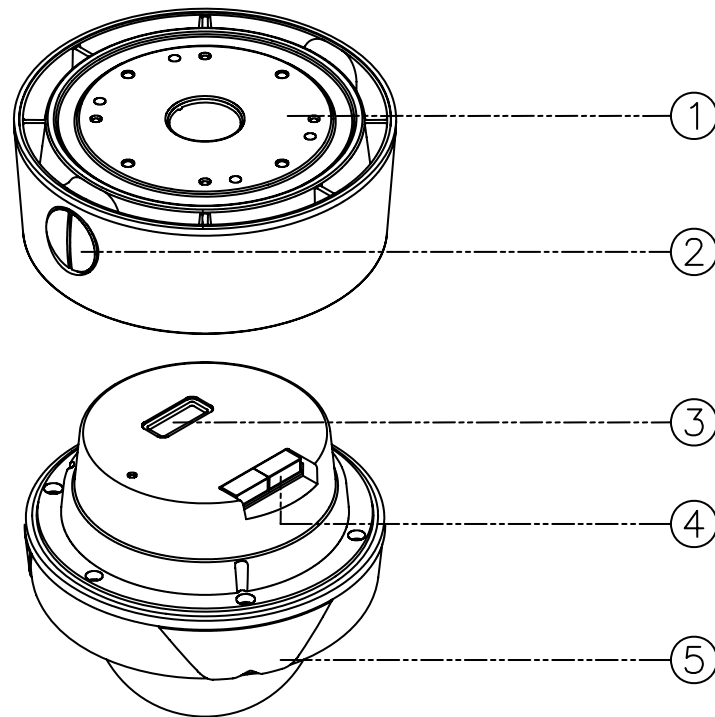
FIG.1

1. Surface Mount Adaptor

2. Cap Screw (PT3/4 , 1EA)

3. Dip Switch

4. Terminal Block

5. Main body

INSTALLATION

A. CONNECTIONS

A-1

1. Loose the screws on the domes cover and remove it from the base.
   (Screws won't be removed)
2. Loosen the screws which connect mount cover and Main base and separate dome cover from the main base.   (These are captive screws that do not remove)
3. Connect power to Power and GND.
4. Connect video to video and GND.
5. Connect communication cable to RS-485 connectors.
6. Connect alarm common cables to GND. Connect the alarm input cables to their relevant terminal (1-4) Alarm polarity can be programmed as N/O or N/C

- **Do not over tighten screws. This can cause damage.**

- 12VDC type
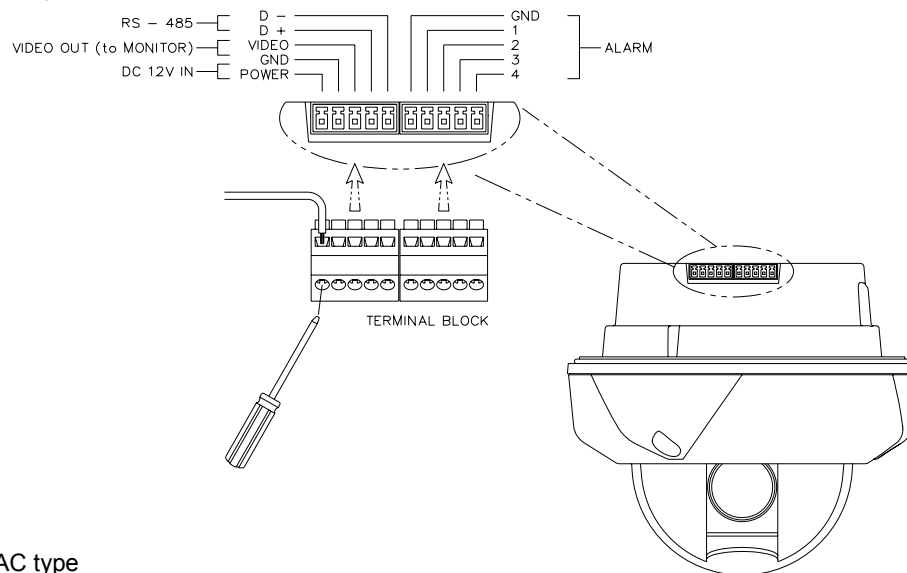
- 24VAC type
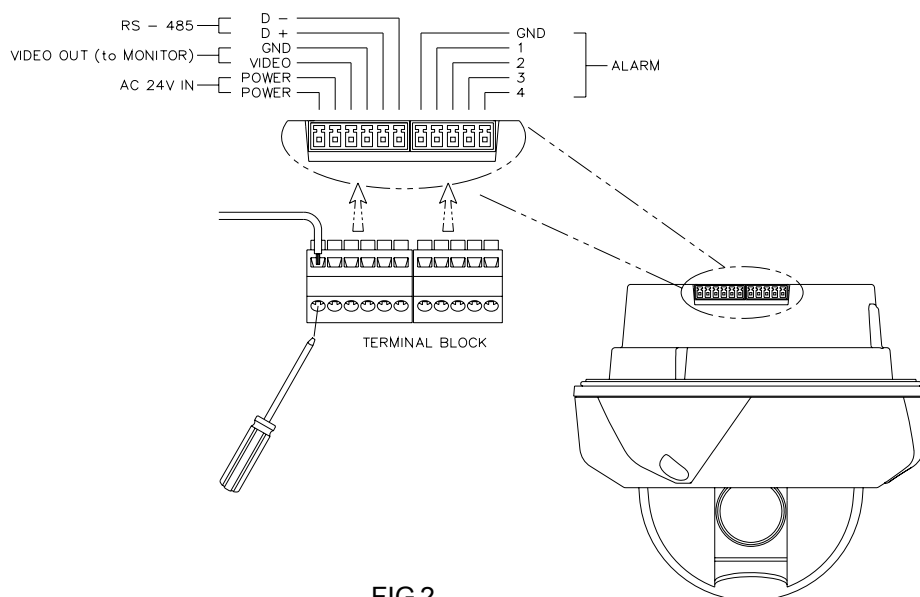
FIG.2

B. CEILING MOUNT TYPE

PT 3/4

SCREW (Ø4.0)

83.5

46

FIG.3

PT 3/4

5

12
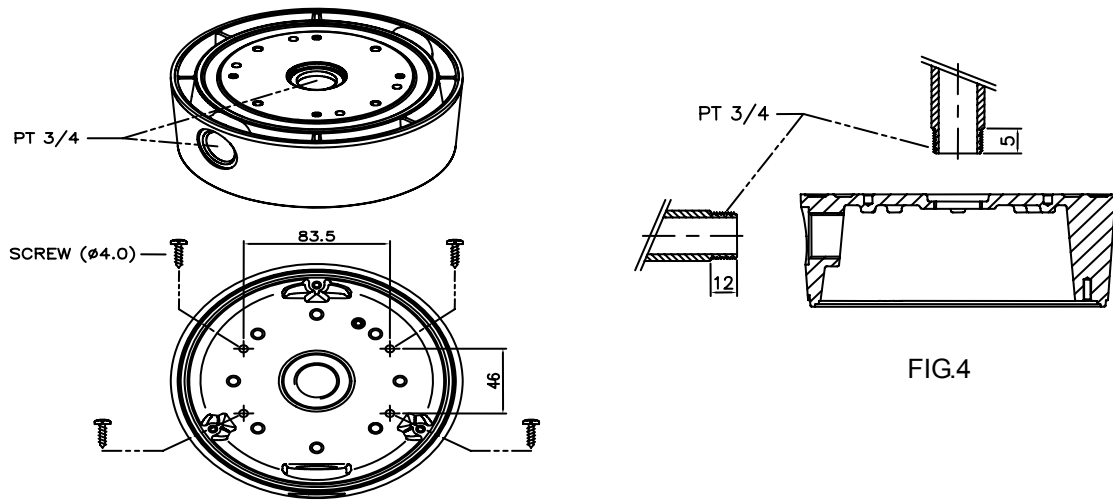
FIG.4

1. Fix the surface mount adaptor with 4pcs of screws on the place where you want to install. (FIG.3)
2. When you use pipe, please note the standard size of pipe. (FIG.4)
3. Re-assemble the dome.
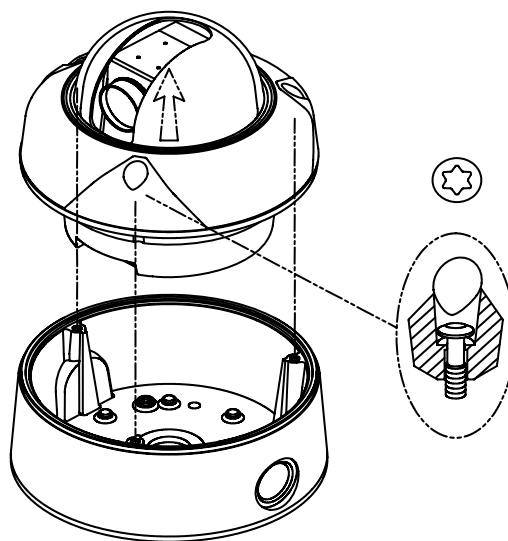
FIG.5

C. EMBEDDED MOUNT TYPE

<div style="text-align:center">

Contents

</div>

► Embedded mount bracket 1ea   ► Holder 3ea

► Decoration cover 1ea   ► Safety wire 1ea

► Screw – M3.0 x 6 5ea   ► Screw - ø4.0 x 16 1ea
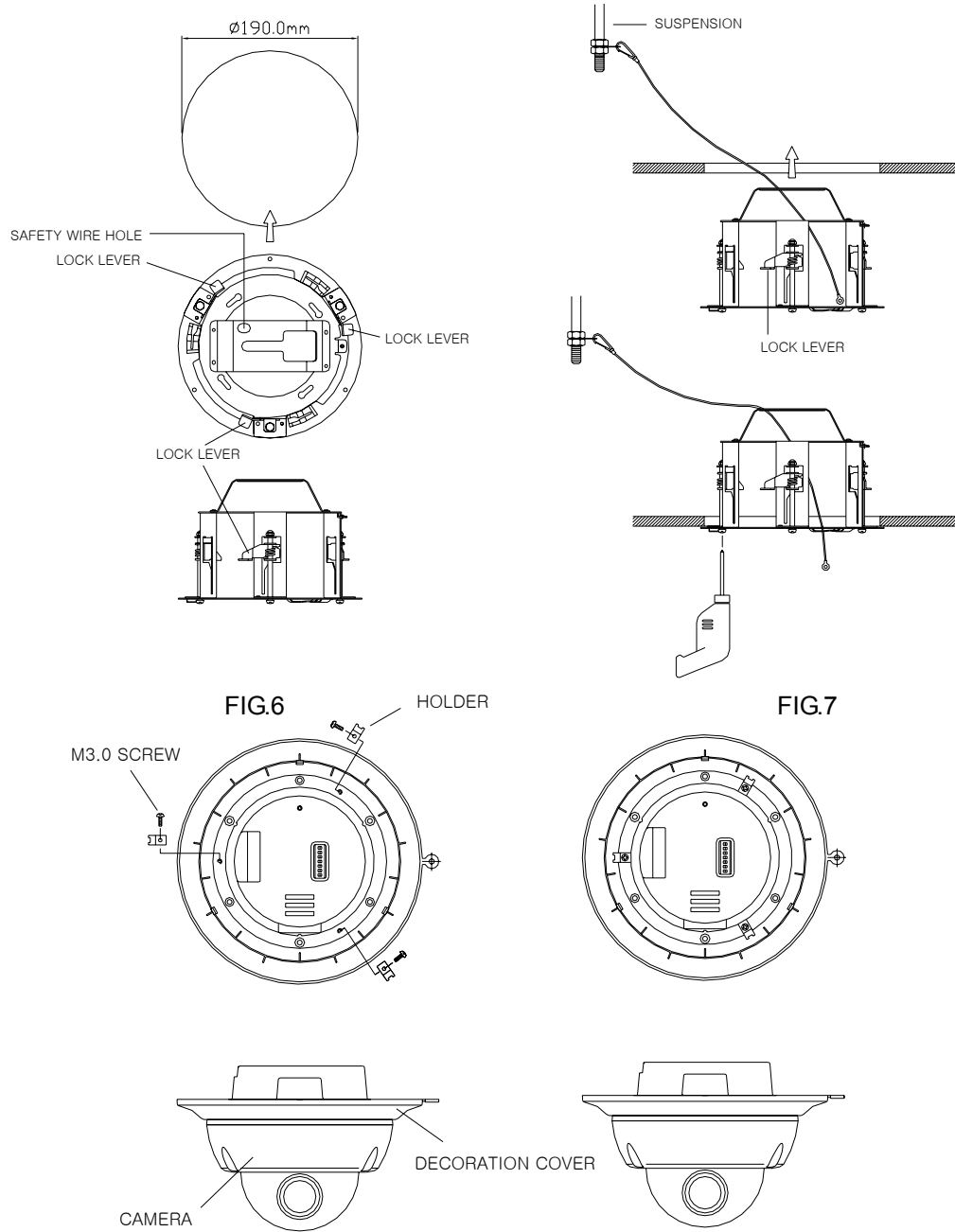
FIG.6

FIG.7

FIG.8

1. Make a hole, 190mm, on the ceiling. (FIG.6)

2. Fold the lock levers and insert the bracket into the hole.

  You can fix the lock lever by driving screws.   (FIG.7)

3. Fix the decoration cover on the rear of camera by holder screws (M3.0) (FIG.8)

4. Hook the safety wire on the suspension and connect it to camera (FIG.9)

5. Install the camera by inserting cover lock and twisting it clockwise. (FIG.10)

6. Fix the decoration cover by screw (∅4.0x16) (FIG.10)
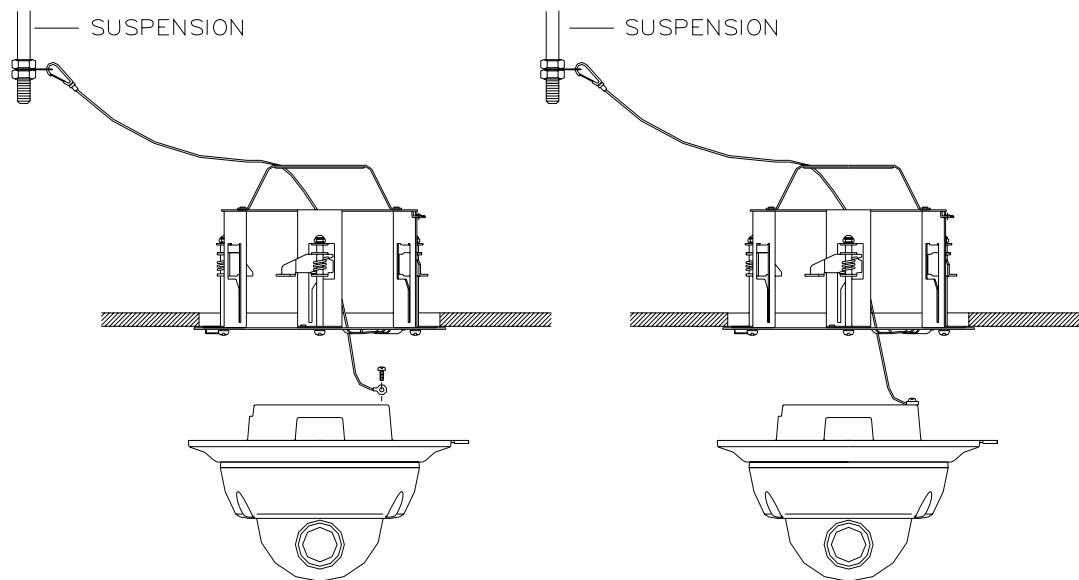
FIG.9
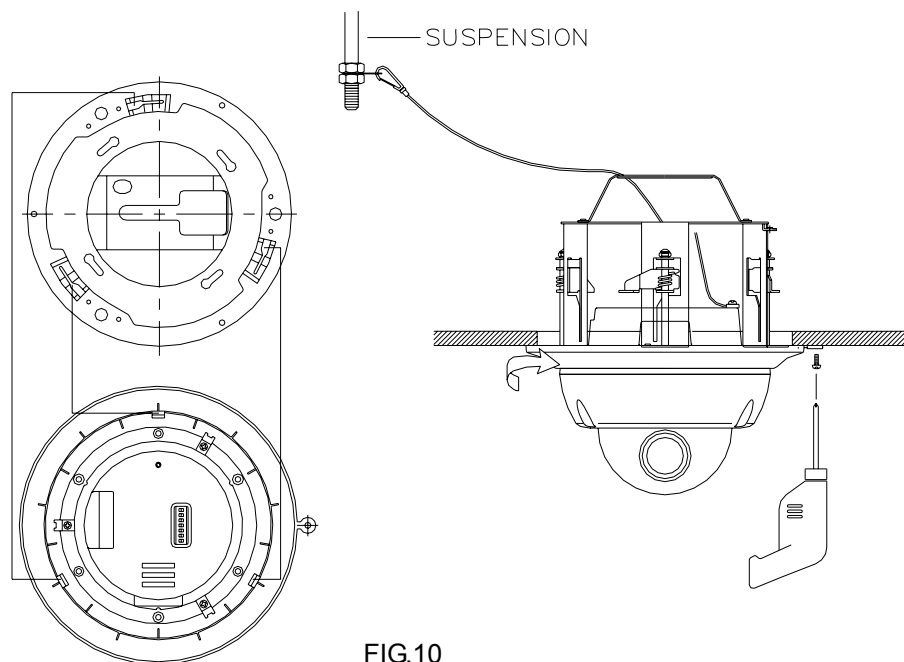
FIG.10

D. PIPE MOUNT TYPE

Contents

► Pipe mount bracket 1ea   ► Rubber 1ea

► Screw – M4.0 x 8 4ea   ► Set anchor bolt (W5/16) 4ea

SCREW M4x8 (4ea)

BRACKET

(RUBBER BOTTOM VIEW)

RUBBER

BOTTOM COVER
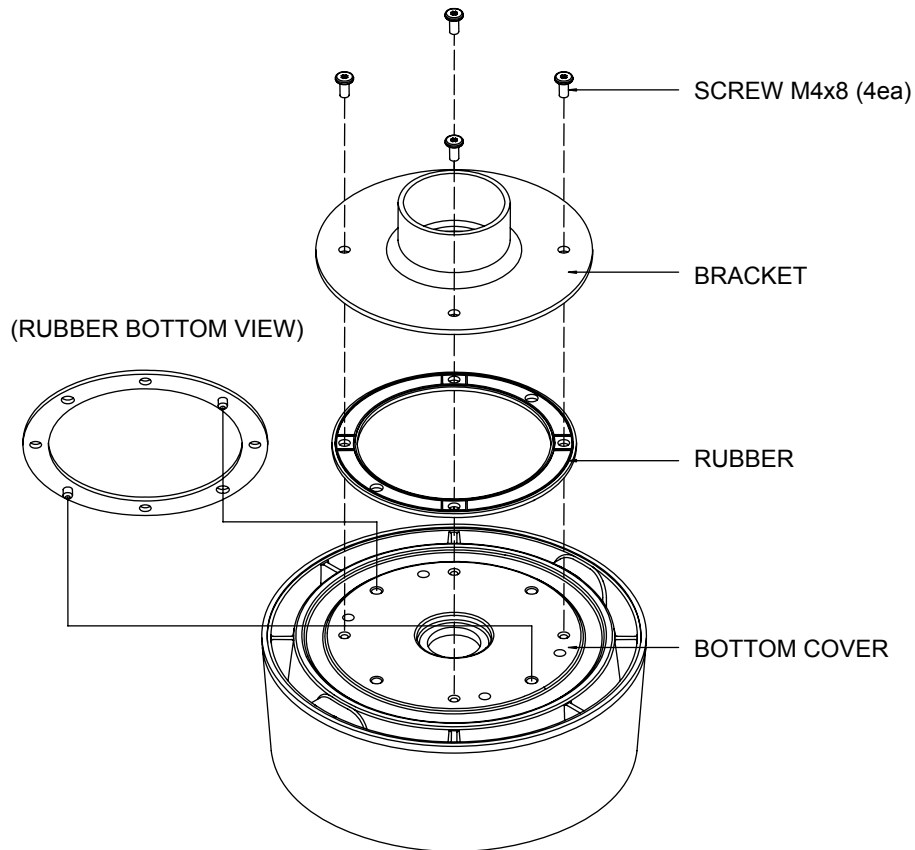
FIG.11

1. As above FIG.11, assemble rubber and bracket on the bottom of camera.

2. After finishing assembly, it will be shown as below. (FIG.12)
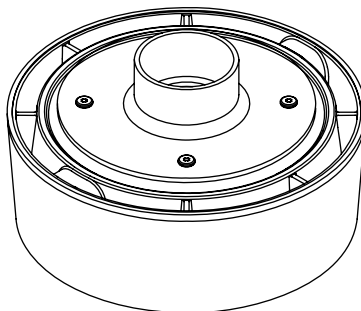
FIG.12

3. If you want to install the speed dome on the concrete wall, you need to make 12.5mm

diameter 4 holes by drill like FIG. 13 (Depth 37mm)

4. Install SET ANCHOR BOLT on the holes.

5. As shown on FIG.14, after assembling mini PTZ and bottom cover assembly, drive the pipe mount bracket and fix. (FIG.14)

FIG.13

PIPE MOUNT BRACKET

BOTTOM COVER ASSEMBLY (FIG.2)

MINI SPEED DOME CAMERA
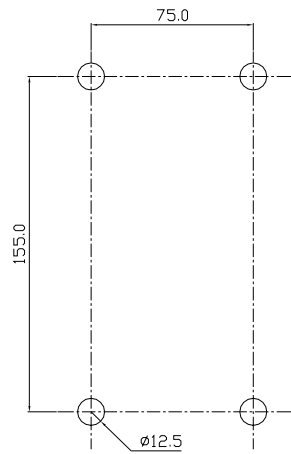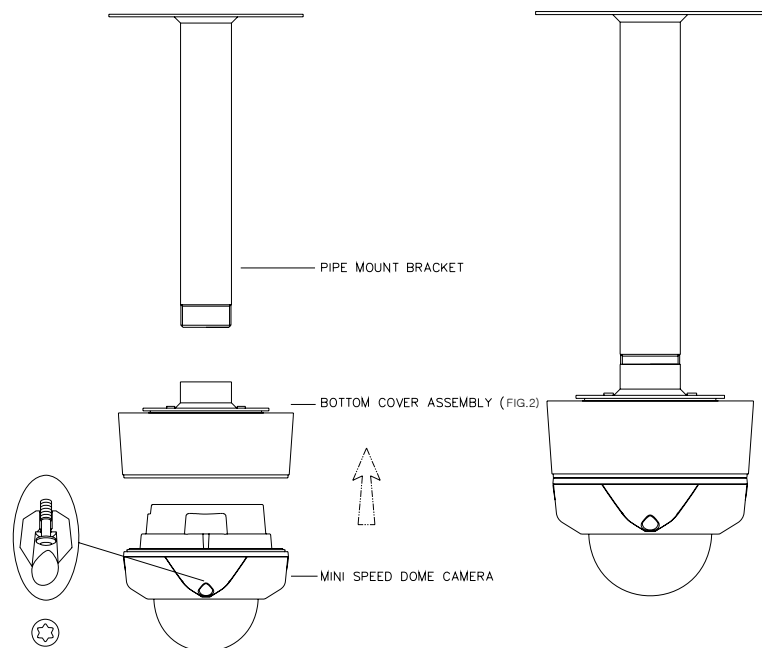
FIG.14

E.GOOSENECK MOUNT TYPE

Contents

► Gooseneck mount bracket 1ea

► Rubber 1ea

► Set anchor bolt (W5/16) 4ea

► Screw M4x8 4ea

75.0

155.0

ø12.5
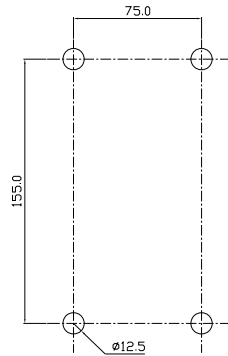
FIG.15

1. If you want to install the speed dome on the concrete wall, you need to make 12.5mm diameter 4 holes by drill like FIG.15 (Depth 37mm)

2. Install SET ANCHOR BOLT on the holes.

3. As shown on FIG.16, after assembling mini PTZ and bottom cover assembly, drive the gooseneck mount bracket and fix. (FIG.16)

GOOSENECK MOUNT BRACKET

BOTTOM COVER ASSEMBLY

MINI SPEED DOME CAMERA
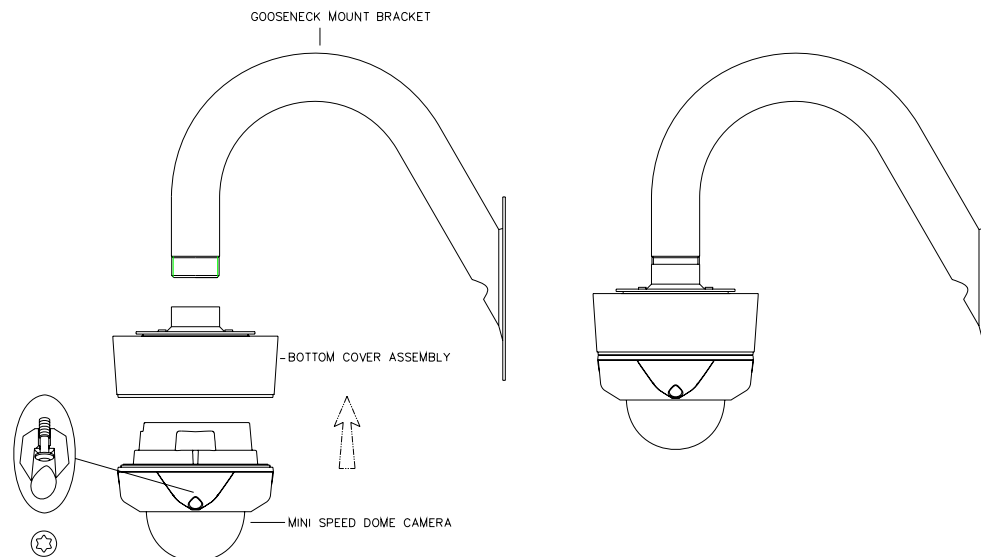
FIG.16

F.WALL MOUNT TYPE

Contents

► Wall mount bracket 1ea   ► Set Anchor Bolt (W5/16) 4ea

► Hexagon Socket head cap screw M4.0 x16 4ea

1. If you want to install the speed dome on the concrete wall, you need to make 12.5mm diameter 4 holes by drill like FIG. 1 (Depth 37mm) (FIG.17)

2. Install SET ANCHOR BOLT on the holes.

3. To install Wall Mount Bracket

Tip> Select a ceiling board strong enough to hold 4 times the total weight of the camera
    (Weight combined camera: approx.5kg)
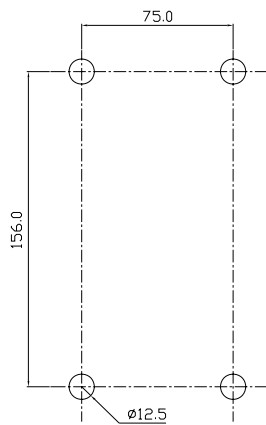
FIG.17

<the cable into the ceiling>   <the cable out of the ceiling>
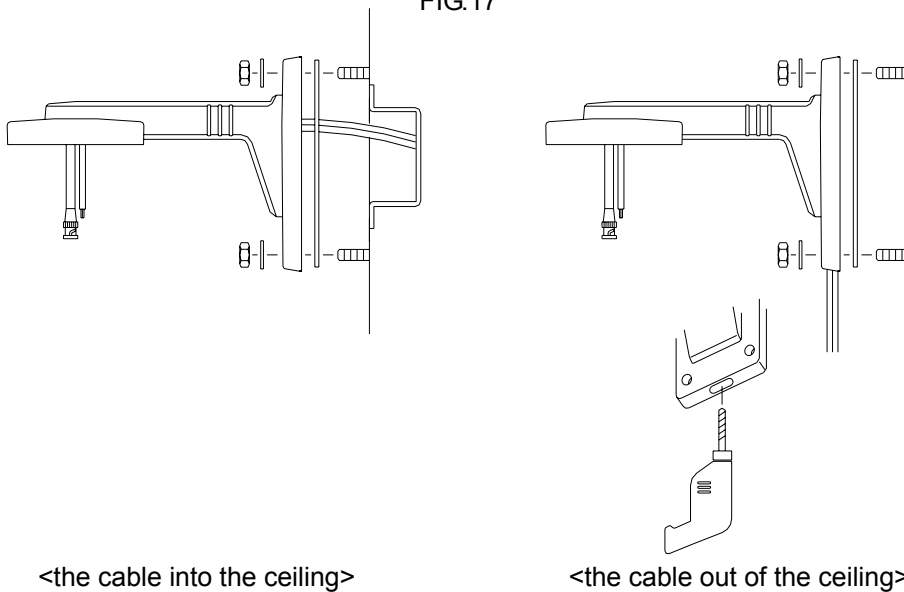
FIG.18

4. Assemble a wall mount bracket and camera by Hexagon socket head cap screws (M4.0X16) (FIG.19)

HEXAGON SOCKET HEAD CAP SCREW M4.0x16 4EA
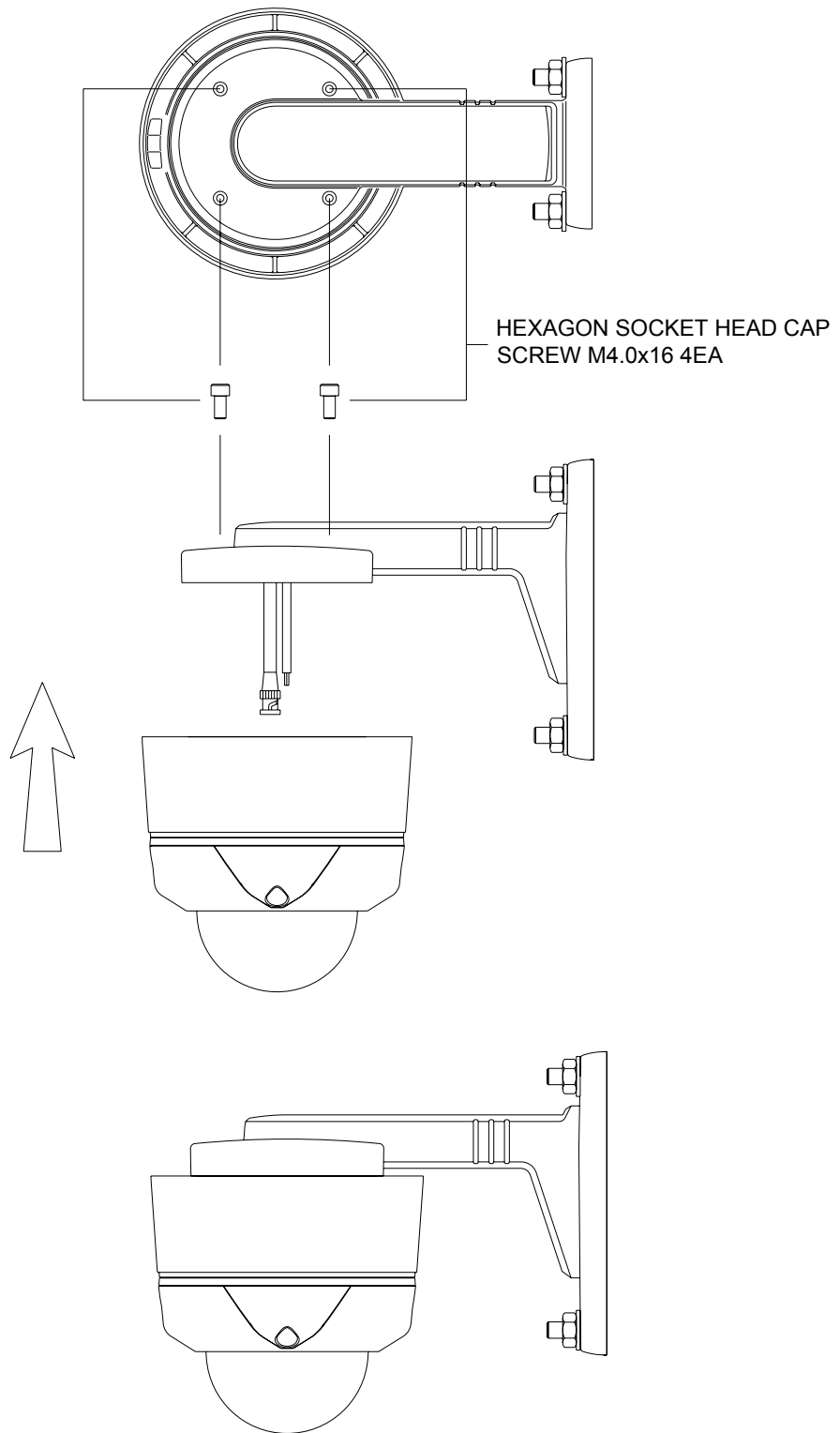
FIG.19

G.CORNER MOUNT TYPE

Contents

► Corner mount adaptor 1ea ► Set Anchor Bolt (W5/16) 4ea ► M10 Bolt & Nut 4ea

1. First mark the positions of holes placing the corner mount bracket. (FIG.20)

2. Make 12.5mm diameter 4 holes by drill. (Depth 37mm)

3. Install SET ANCHOR BOLT on the holes.

4. Fix the wanted bracket on the corner mount bracket with 4 ea of M10 BOLT before you install the corner mount bracket. (FIG.21)

5. Screw the set anchor bolt of the bracket by nut on the wall. (FIG.22)
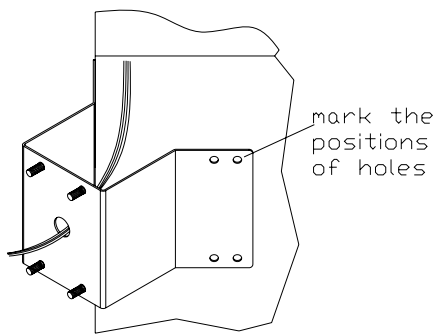
FIG.20
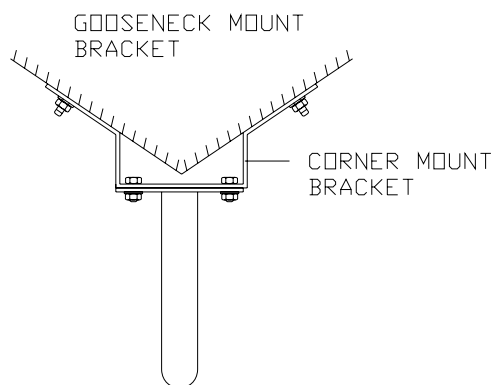
FIG.22
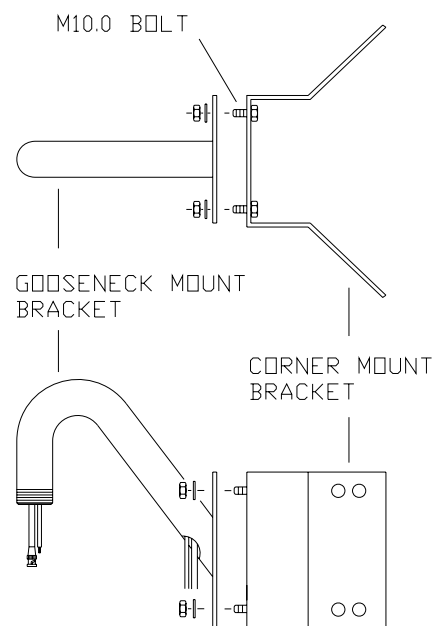
FIG.21

6. After driving a bottom cover assembly to gooseneck mount bracket, as shown on FIG23,

assemble mini PTZ with bottom cover assembly. (FIG.23)

GOOSENECK MOUNT BRACKET

CORNER BRACKET

BOTTOM COVER ASSEMBLY

MINI SPEED DOME CAMERA
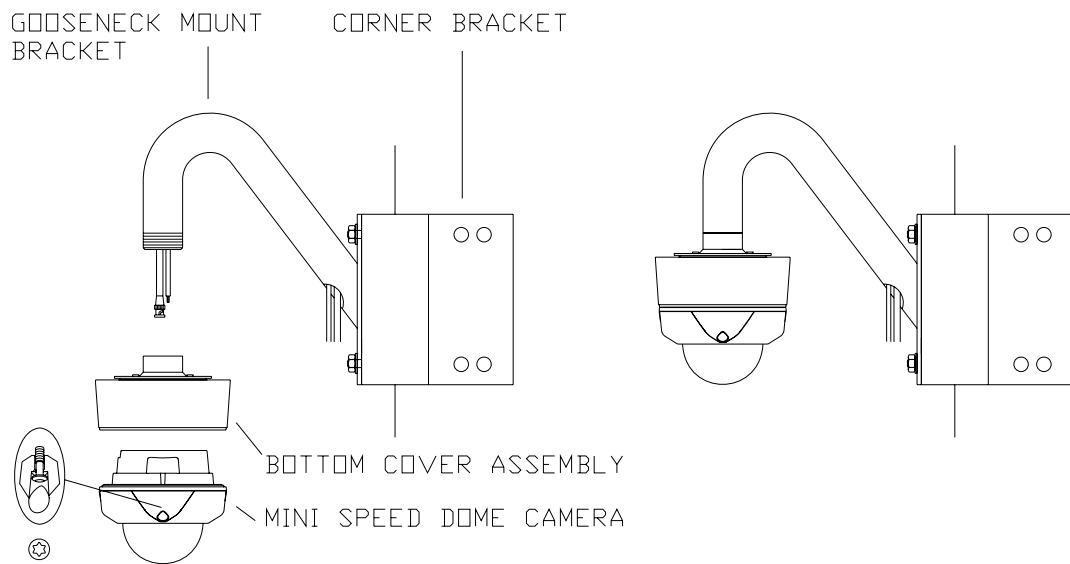
FIG.23

H.POLE MOUNT TYPE

Contents

► Pole mount adaptor 1ea ► Band Clamp 2ea ► M10 Bolt & Nut 4ea

1. Fix the wanted bracket on the pole mount bracket with 4 ea of M10 BOLT before you install the pole mount bracket. (FIG.24)

2. Tie the bracket with SUS BAND tightly. (FIG.25)

3. As shown FIG.26 after installing a wall mount bracket, fix a camera on the wall mount bracket. (FIG.26)

M10 BOLT

FIG.24

WALL MOUNT BRACKET   POLE MOUNT BRACKET

SUS BAND

FIG.25

HEXAGON SOCKET HEAD CAP SCREW
M4.0x16 4EA
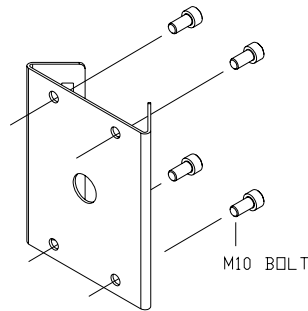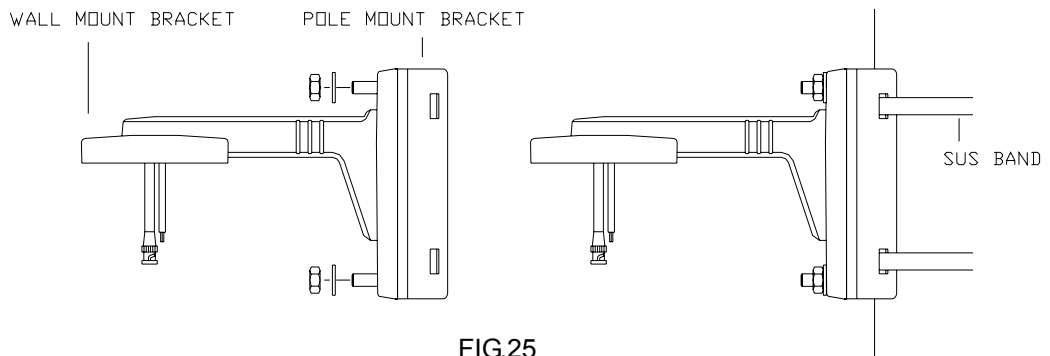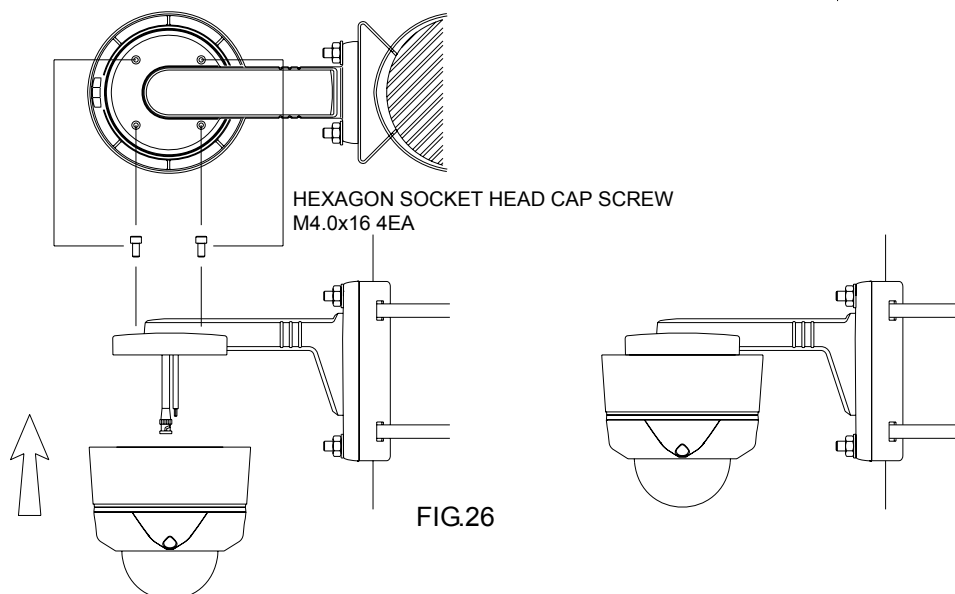
FIG.26

QUICK OPERATING KEYS

The dome supports Pelco D and Pelco P protocols.

The dome may be used with any controller or DVR etc that supports the Pelco D and Pelco P protocols.

The default setting of the dome is Pelco D / P (auto detection) with 2400 bps (baud rate).

[PELCO D/P, SAMSUNG PROTOCOLS]

The comprehensive feature set of the dome is available from Pelco compatible controllers via quick operation keys as defined below.

1-64 + preset and 100~200 + preset are used for normal user presets. Presets 65-99 + are reserved for special functions.

For example, to enter OSD MENU, press the button 95 + PRESET

\<Quick Operation Key Table 1, Pelco D/P, SAMSUNG\>

Number	Note	Function
1 ~ 64, 100~200 +Preset	PRESET	Execute Preset 1 ~ 64
65 + Preset	PRESET STATUS	Display Preset Status
66 +Preset	AUTO SCAN	Execute Auto Scan
67 +Preset	AUTO FLIP	Selectable On/Off/Auto in Auto Flip function
71~78 +Preset	GROUP TOUR	Execute Group Tour #1 ~ #8
81~88 +Preset	PATTERN	Execute Pattern #1 ~ #8
91 + Preset	ZERO POSITION	Search For Pan / Tilt Zero Position
92 + Preset	FREEZE	Select Freezing of current image
93 + Preset	BLC MODE	Selectable On/Off in BLC function
94 + Preset	D/N MODE	Selectable Day/Night Mode (Auto/Day/Night Mode)
95 + Preset	OSD MAIN MENU	To enter OSD Main Menu
96 + Preset	FOCUS ADJUST	Focus adjustment
97 +Preset	ALARM	Selectable Enable/Disable all Alarms

\<Quick Operation Keys Table 2\> Use these function keys if controller has these keys\>

Menu	Function
Tilt Up / Down	Sub menu cursor moves up / down
Pan Left / Right	Enter to the sub menu or status change or decrement
Focus Near	Using for Enter key when user select YES or NO
Focus Far	Using for function changing keys when set coordinate
Zoom Tele	Status cursor to the right
Zoom Wide	Status cursor to the left

- 65 + preset:" Status Report" is displayed, to remove this screen, press Focus Near button.

- 92 + preset: This feature freezes the current live image during tour, auto scan or pattern operation. When you press 92 + preset button, the image freezes but the camera is still working as per operation such as tour, pattern or auto scan. To return to normal images, press 92 + preset button again. This feature is operated by preset number but not included in OSD main menu.

- If a controller asks for an unsupported feature "Not available" is displayed on the monitor.

QUICK OPERATING KEYS

[VICON PROTOCOL]

If user wants to choose Vicon Protocol, the user may change the dip switch first.

(Refer to Page #36 DIP SWITCH SETTING - PROTOCOL)

Baud Rate: 4800 (Vicon default)

The operation system is almost same as Pelco D/P protocols but some special features are different way as

noted below'

<Quick Operation Key Table 2:   VICON>

Number	Note	Function
1 ~ 79 +Preset	PRESET	Execute Preset 1 ~ 79
80~87 +Preset	GROUP TOUR	Execute Group Tour #1 ~ #8
88~89 +Preset	PATTERN	Execute Pattern #1 ~ #2
90 + Preset	Focus Mode Set	Focus Mode Toggle to Auto or Manual
90 + Preset Save	Pan/Tilt Lockout	PAN/TILT Lock or Unlock setting
91 + Preset Save	ZERO POSITION	Search For Pan / Tilt Zero Position
92 + Preset Save	ALARM	Selectable Enable/Disable all Alarms
93 + Preset Save	BLC MODE	Selectable On/Off in BLC function
94 + Preset Save	OSD MAIN MENU	To enter OSD Main Menu
95 + Preset Save	D/N MODE	Selectable Day/Night Mode (Auto/Day/Night Mode)
96 + Preset Save	SECTOR	SECTOR setting menu entrance
97 + Preset Save	DOME Reset	Initial DOME Reset - Rebooting
98 + Preset Save	AUTO PAN	AUTO PAN setting menu entrance
99 + Preset Save	Pan/Tilt Speed	Manual Pan/Tilt Max Speed setting

<Quick Operation Keys Table 2> Use these function keys if controller has these keys>

Menu	Function
Tilt Up / Down	Sub menu cursor moves up / down
Pan Left / Right	Enter to the sub menu or status change or decrement
Focus Near	Using for Enter key when user select YES or NO
Focus Far	Using for function changing keys when set coordinate
Zoom Tele	Status cursor to the right
Zoom Wide	Status cursor to the left

DIAGNOSTIC

Whenever the dome is powered on, a standard diagnostic is operated.

The following messages are displayed on the monitor.

```
CAMERA ID : 001

BAUD RATE : 2400 BPS



WAITING.........
```

```
PAN ORIGIN              TEST OK

TILT ORIGIN             TEST OK

TX CONNECTION           TEST OK

CAMERA COMM             TEST OK
```

A. Pan Origin Test

Zero point of Pan is located during the Panning test.

B. Tilt Origin Test

Zero point of Tilt is located during the Tilt test.

C. TX connection Test

The Tx connection test looks for commands from a controller to the dome. If no commands are detected the test will exit after 60 seconds.

During the 60 seconds, the camera must receive a signal from the controller or DVR, so please operate the controller during this phase. As soon as the dome detects a command "OK" will be displayed and the test will move on to the next step.

If the Tx connection test fails check the RS 485 wiring.

D. Camera Comm. Test

Camera communication is also checked.

OK should be displayed in these four tests before installation.

If all the above Tests are OK, "**NOW EEPROM CHECKING"** and "**ALL DATA INITIALIZING"** is displayed and the camera is ready to operate.

OSD MENU SETTING

A. OSD MENU TABLE

MAIN MENU

```
MAIN MENU
DOME SETUP
CAMERA SET
AUTO SCAN
TOUR
PRAVACY
PATTERN
ALARM
SECTOR
EXIT
```

DOME SET

```
DOME SET
CAMERA ID   : CAM1□□□□□□□□□□
RECOVER     : OFF
MANUAL SPEED : 100°/S
AUTO FLIP   : OFF
ZOOM SPEED  : FAST
ALARM       : DISABLE
LANGUAGE    : ENGLISH
[NEXT PAGE]
SAVE AND EXIT
EXIT
```

CAMERA SET

```
CAMERA SET
FLICKER  : OFF/ON
MIRROR   : OFF/ON
D ZOOM   : OFF/ON
WB MODE  : AWB MODE
PIC FLIP : OFF/ON
BLC      : OFF/ON
D/N MODE : AUTO
DSS MODE : OFF/ON
EXIT
```

PRESET SET

```
PRESET SET
PRESET NO: 001
PRESET ID: PRESET01□□□□□□□□□
PAN:XXX.X.XX.X TILT:XXX.X.XX.X
SAVE
EXIT
```

AUTO SCAN SET

```
AUTO SCAN SET
START ANGLE : XXX.X.XX.X
END ANGLE   : XXX.X.XX.X
DIRECTION   : CW
ENDLESS     : OFF/ON
SPEED       : QUICK
DWELL TIME  : 03
SAVE AND EXIT
EXIT
```

TOUR SET

```
TOUR SET
TOUR NO.   : 01
TOUR TITLE : TOUR01□□□□□□
TOUR STEP  : 01
PRESET NO  : 01
DWELL TIME : 10
SPEED      : 200°/S
SAVE AND EXIT
EXIT
```

PRIVACY SET

```
PRIVACY SET
PRIVACY NO. : 01
DISPLAY
ACTION
SAVE
EXIT
```

PATTERN SET

```
PATTERN SET
PATT NO.   : 01
PATT TITLE PATTERN01□□□□
DATA FILL  : 100%
SAVE
EXIT
```

ALARM SET

```
ALARM SET
ALARM NO.   : 01
ALARM INPUT : OFF
ALARM ACT   : 01
SAVE
EXIT
```

SECTOR SET

```
SECTOR SET
SECTOR NO     : 01
SECTOR ID   : SECTOR01□□□
SECTOR START: XXX.X.XX.X
SECTOR END  : XXX.X.XX.X
SAVE
EXIT
```

NEXT PAGE

```
NEXT PAGE
[OSD DISPLY]
[SYSTEM STATUS]
[INITIALIZATION]
[PREVIOUS PAGE]
```

OSD DISPLAY

```
OSD DISPLAY
CAMERA ID: OFF/ON
PRESET ID: OFF/ON
SECTOR ID: OFF ON
COORDINATE:ON/OFF
[PREVIOUS PAGE]
```

SYSTEM STATUS

```
[SYSTEM STATUS]
PROTOCOL  : PELCO D,P
BAUD RATE: 2400BPS
FIRMWARE VER.:2.00
UPGRADED DATE: 06.28,06
CAMERA MODULE: SDM100
[PREVIOUS PAGE]
```

INITIALIZATION

```
[INITIALIZATION]
[TOUR CLEAR]
[PRESET CLEAR]
[SECTOR CLEAR]
[PRIVACY CLEAR]
[PATTERN CLEAR]
[LOAD OPTIMIZED DEFAULT]
```

OSD MENU SETTING

To enter OSD Menu, press the button 95 + PRESET.

```
        MAIN MENU

        DOME SETUP
        CAMERA SET
        AUTO SCAN
        TOUR
        PRIVICY
        PATTERN
        ALARM
        SECTOR
        EXIT
```
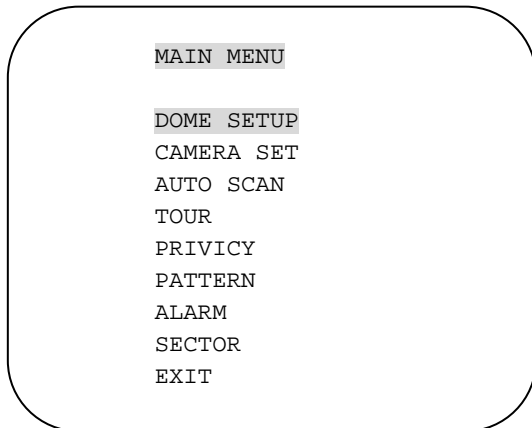
* Use "up down" to move the position and "left right" to make selection

B. Dome Setup

In order to enter Dome setup, select right direction when the cursor is on dome setup.

```
            DOME SET

  CAMERA ID      : CAM1
  RECOVER        : OFF
  MANUAL SPEED   : 100°/S
  AUTO FLIP      : OFF              ←——— DEFAULT SETTING
  ZOOM SPEED     : FAST
  ALARM          : DISABLE
  LANGUAGE       : ENGLISH
  [NEXT PAGE]
  SAVE AND EXIT
  EXIT
```
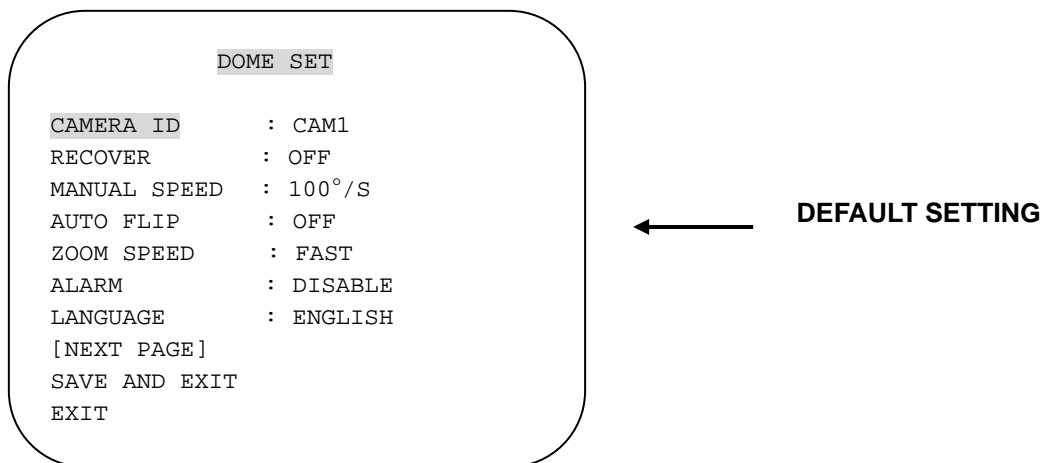
B-1.   DOME SET - CAMERA ID

To set camera name, and select a title of up to 16 characters using left or right direction keys or joystick.

Press ZOOM TELE button to move to the next character from left to right direction and

ZOOM WIDE button to move to the next character from right to left direction

(Space displays when ☐ appears)

B-2. **DOME SET - RECOVER**

This feature allows the dome to revert to a specific programmed action when the dome has not received a command for the recovery timer period.

Actions can be Auto scan, group tour and pattern. The recover time can be programmed from 15 second to 99 seconds. The default setting is OFF.

B-3. **DOME SET - MANUAL SPEED**

The manual speed of Pan/Tilt is selectable from 100°/sec up to 150°/sec.   The default setting is 100°/sec

B-4. **DOME SET - AUTO FLIP**

Auto Flip enables the dome to automatically do a 180° turn when the tilt bottom point is reached. The default setting is OFF.   This function can be recalled by pushing 67+ preset button.

B-5. **DOME SET – ZOOM SPEED**

Zoom speeds are selectable as FAST or SLOW mode. The default setting is FAST.

B-6. **DOME SET – ALARM**

You must enable the alarms for them to operate. The default setting is DISABLED.   This function can be recalled by pushing 97 + preset button.

B-7. **DOME SET - LANGUAGE**

Multiple languages are selectable (English, Italian, German, Dutch, Danish, Polish and French) The default setting is ENGLISH.

B-8. **DOME SET – [NEXT PAGE]**

```
        DOME SET

SYSTEM LOCK:   : OFF
[PASS WORD]
[OSD DISPLAY]
[SYSTEM STATUS]
[INITIALIZATION]
[PREVIOUS PAGE]
```
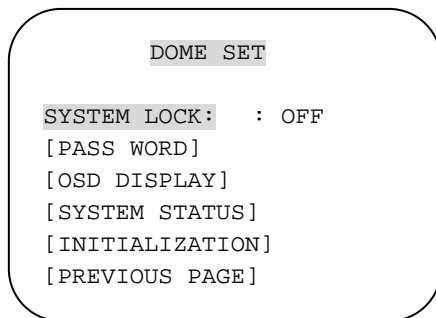
←   **DEFAULT SETTING**

B-8-1. **DOME SET – [NEXT PAGE] – SYSTEM LOCK**

All stored dome settings can be password protected to prevent unauthorized changes.   In order to enter [PASS WORD] page, the system lock status must firstly be set as ON.

The default setting is OFF.

OSD MENU SETTING

B-8-2. DOME SET – [NEXT PAGE] – [PASSWORD]

To enter this page to set a password, move joystick or pan key in the right direction. The password must be set by preset number from 001 to 255 **(Default 99)**

A. OSD MAIN MENU TABLE (PAGE 14) default setting is BLANK.

```
        ENTER PASSWORD


 BY ENTERING PRESET CODE
 PASSWORD ***
 CONFIRM  ***
```
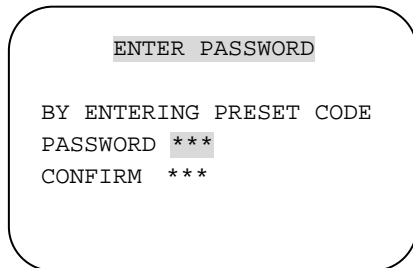
Enter any number from 001~255 on the password blank area and again for confirmation on blank area. Then "CONFIRMED" is displayed on the monitor and the menu will go back to the previous page automatically.

```
        ENTER PASSWORD                          ENTER PASSWORD


 BY ENTERING PRESET CODE            BY ENTERING PRESET CODE
 PASSWORD ***                       PASSWORD ***
 CONFIRM  ***CONFIRMED              CONFIRM  ***CANCELLED
```

           <CONFIRMED>   <CANCELLED>
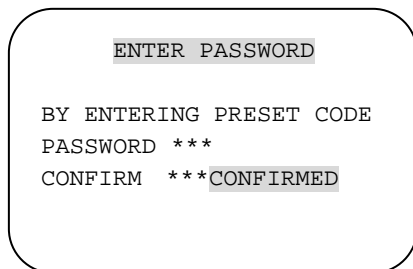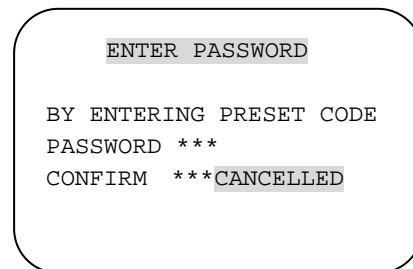
If you press an incorrect number between PASSWORD and CONFIRM, "CANCELLED" is displayed on the monitor and the menu will return to the previous page automatically after 3 attempts.

* When a password has been set, the operator must enter the correct password in order to enter OSD MAIN MENU, or to change any of the domes configuration data

* If you set a password you must ensure that it does not get lost. If this happens the dome must be returned for workshop repair

OSD MENU SETTING

B-8-3. DOME SET – [NEXT PAGE] – [OSD DISPLAY]

The camera ID setting defines whether the camera OSD display is displayed or switched off.

```
         OSD DISPLAY

CAMERA ID      : OFF
PRESET ID      : OFF          ◀———  DEFAULT SETTING
SECTOR ID      : OFF
COORDINATE     : ON
[PREVIOUS PAGE]
```
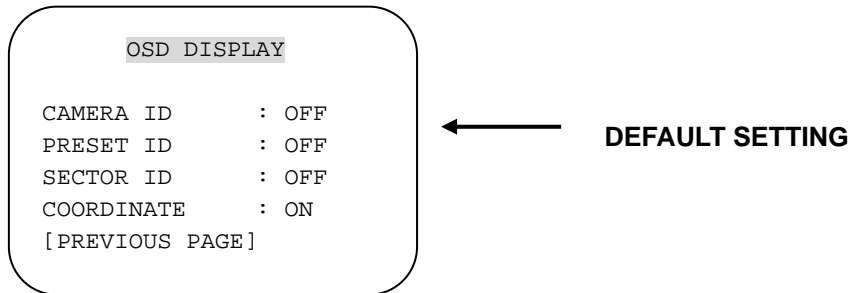
B-8-4. DOME SET – [NEXT PAGE] – [SYSTEM STATUS]

This page shows the information of this camera.

```
        SYSTEM STATUS

PROTOCOL       : PELCO D, P
BAUD RATE      : 2400 BPS
FIRMWARE VER.  : X.XX          ◀———  DEFAULT SETTING
UPGRADED DATE  : YY.MM.DD
CAMERA MODULE  : XXXXXXXX
[PREVIOUS PAGE]
```
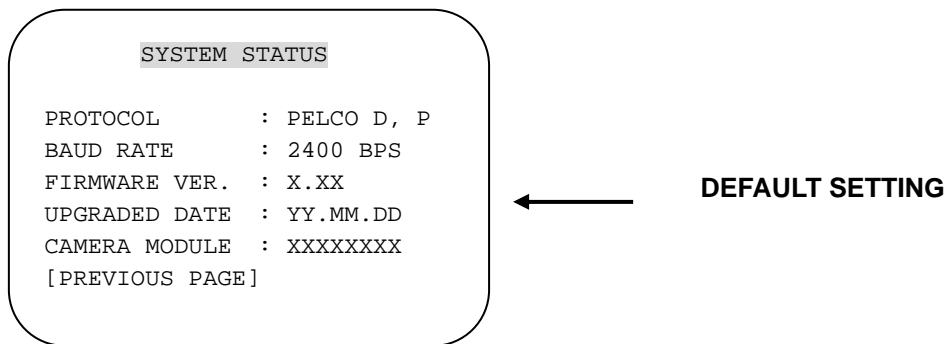
- Protocol and baud rate are shown according to the dip switch setting

(Refer to page 29, 30 and 31)

- Firmware version and upgraded date will be changed if the dome has been upgraded.

- The camera module type is stated as follows.

 SDM100 : SAMSUNG 10X ZOOM CAMERA MODULE.

B-8-5. DOME SET – [NEXT PAGE] – [INITIALIZATION]

To clear the current settings select the item that you wish to reset back to factory defaults.

```
         INITIALIZATION

[TOUR CLEAR]
[PRESET CLEAR]
[SECTOR CLEAR]
[PRIVACY CLEAR]
[PATTERN CLEAR]
[LOAD OPTIMIZED DEFAULT]
[PREVIOUS PAGE]
```
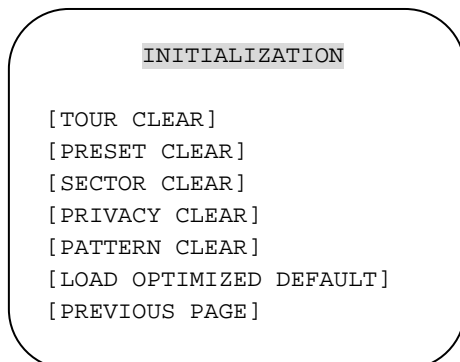
OSD MENU SETTING

- To clear the memorized data, move the joystick or pan right key until the cursor is on the required item.

```
┌─────────────────────────┐          ┌─────────────────────────┐
│  TOUR CLEAR             │          │                         │
│                         │  ──────▶ │       TOUR CLEAR        │
│  ARE YOU SURE? YES NO   │          │                         │
│                         │          │                         │
└─────────────────────────┘          └─────────────────────────┘
```

Press FOCUS NEAR button when the cursor is at YES in order to clear memorized data.   Then each item such as tour, preset, and sector will flicker for about 2~3 seconds.   After this process, the menu is returned to the previous page.

* Use the above method for [PRESET CLEAR], [SECTOR CLEAR], [PRIVACY CLEAR], [PATTERN CLEAR], [TOUR CLEAR].

```
┌─────────────────────────┐          ┌─────────────────────────┐
│  LOAD OPTIMIZED DEFAULT │          │                         │
│                         │  ──────▶ │   ALL DATA INITIALIZING │
│  ARE YOU SURE? YES NO   │          │                         │
│                         │          │                         │
└─────────────────────────┘          └─────────────────────────┘
```
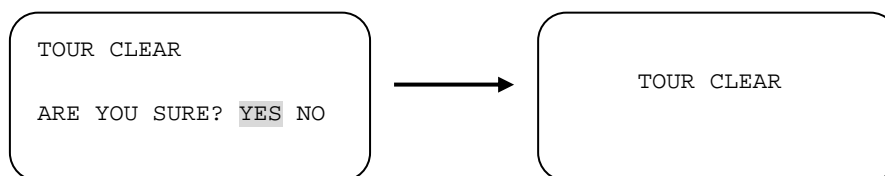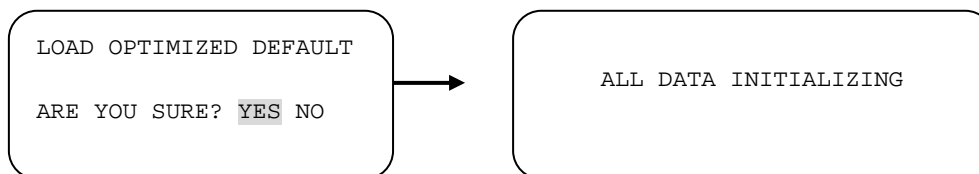
- To clear all data and return to factory defaults, move the joystick right or press the pan right key to when the cursor is at [LOAD OPTIMIZED DEFAULT] to enter the next page.

- Move joystick or the pan right keys so that the cursor is over YES, then press the FOCUS NEAR button.

"ALL DATA INITIALIZING" is then displayed for about 5~7 seconds and then the menu is returned to the previous page automatically.

B-9.   DOME SET – [NEXT PAGE] – SAVE AND EXIT

To save the memorized data and escape this page, move the joystick right or press the pan right key when cursor is at SAVE AND EXIT.

B-10.   DOME SET – [NEXT PAGE] – EXIT

In order to escape this page, move the joystick right or press the pan right key when the cursor is at EXIT

OSD MENU SETTING

C. CAMERA SET

```
      CAMERA SET

  FLICKER      : OFF
  MIRROR       : OFF
  APERTURE     : 10
  D ZOOM       : OFF
  WB MODE      : AWB MODE
  PIC FLIP     : OFF
  BLC          : OFF
  D/N MODE     : AUTO
  DSS MODE     : OFF
  EXIT
```

← **DEFAULT SETTING**

C-1. **CAMERA SET - FLICKERLESS**

The flicker less feature has options of 50Hz and 60Hz.   The default setting is OFF (NTSC: 60Hz / PAL: 50Hz). The flicker less mode only needs to be set when there is a mismatch between the power frequency and camera sync rate. The default setting is OFF

C-2. **CAMERA SET - MIRROR**

This feature literally swaps the image left and right as if looking into a mirror. The default setting is OFF.

C-3. **CAMERA SET – APERTURE**

Aperture correction enhances the picture details and sharpness by increasing the gain of the caemra. Increade the value to sharpen the image, decrease to soften it The default seeting is 10. (the aperture level is from 01 ~ 15)

C-4. **CAMERA SET – D ZOOM**

If neabled digital zoom is applied when the zoom lens has reached its maximum optical zoom in capability The default setting is OFF.

C-5. **CAMERA SET – WB MODE**

White balance functions has 4 modes and may need to be changed depending on the situation.

- AWB Mode – 3,200°K to 6, 000°K   (Default)
- Indoor – up to 3,200°K
- Outdoor – up to 5,800°K
- ATW Mode -   2,000°K to 10, 000°K

OSD MENU SETTING

C-6. CAMERA SET – PIC FLIP

The picture flip feature swps the top and bottom of the image, literally inverting it.. The default setting is OFF.

C-7. CAMERA SET – BLC (Back Light Compensation)

The default setting is OFF and BLC modes can be OFF/ON.

OFF – Backlight compensation is not activated.

ON – Back light compensation is activated.

This function can be recalled by pushing 93 + preset button.

C-8. CAMERA SET – D/N MODE

The dome camera can operate in day /night mode and will switch depending on lighting conditions. Alternatively it can be forced into color only mode.

The default setting is AUTO MODE. This function can be recalled by pushing 94 + preset button.

C-9. CAMERA SET – DSS MODE (DIGITAL SLOW SHUTTER)

If digital slow shutter is enabled the exposure time of the camera is increased, this allowing more light to be collected and improving low light response. This setting should not be enabled if the dome is touring at night or fast moving objects are likely to be in the scene as smearing is also increased.
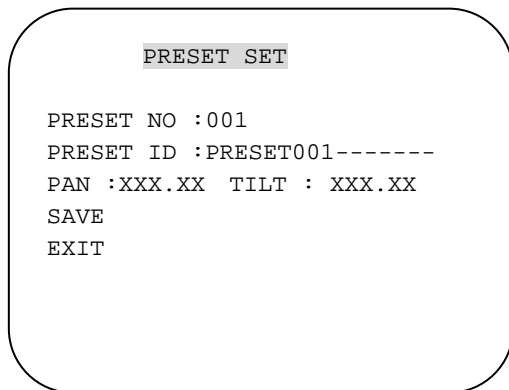
The default setting is OFF.

C-10. CAMERA SET – EXIT

To escape this page, move the joystick right or press the pan right key.

OSD MENU SETTING

D. PRESET SET

To enter PRESET SET, move joystick to the right direction.

```
        PRESET SET

 PRESET NO :001
 PRESET ID :PRESET001-------
 PAN :XXX.XX  TILT : XXX.XX
 SAVE
 EXIT
```

⟵ **DEFAULT SETTING**

D-1.   PRESET – PRESET NO.

Up to 165 preset positions are available. Use the joystick or pan left/right keys to select the number.

D-2.   PRESET – PRESET ID

To create preset titles use the joystick or pan left/right keys to navigate the menu.

The ZOOM TELE button moves to the next character from left to right and ZOOM WIDE button moves to the next character from right to left

(Space displays when ☐ appears)

D-3.   PRESET – PAN: XXX.X TILT: XX.X

Press FOCUS FAR button in order to set preset position then, use the joystick or pan left/right keys to the position where memorized preset number .is needed. Then press FOCUS FAR button again after setting a preset location.

D-4.   PRESET – SAVE

Move the joystick right or press the pan right key when the cursor is at SAVE and then the cursor will be located on Preset ID for the continuous preset No. setting.
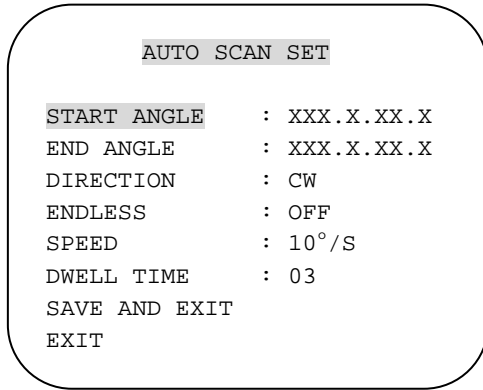
D-5.   PRESET – EXIT

To escape this page, move the joystick right or press the pan right button.

OSD MENU SETTING

E. AUTO SCAN SET

* 66 + preset button is working as AUTO SCAN after setting.

```
        AUTO  SCAN  SET

START ANGLE     : XXX.X.XX.X
END ANGLE       : XXX.X.XX.X
DIRECTION       : CW
ENDLESS         : OFF
SPEED           : 10°/S
DWELL TIME      : 03
SAVE AND EXIT
EXIT
```

← **DEFAULT SETTING**

E-1. AUTO SCAN – START ANGLE

To set the start position, press FOCUS FAR button then move the dome to the required start position.

Press FOCUS FAR button again is to escape.

E-2. AUTO SCAN – END ANGLE

To set the end position, press FOCUS FAR button then move the dome to the required end position.

Press FOCUS FAR button again is to escape.

E-3. AUTO SCAN – DIRECTION

Auto Scan directions are available as CW or CCW.

CW: Clock wise direction (Default)

CCW: Count Clock Wise Direction.

E-4. AUTO SCAN – ENDLESS

Auto Scan can be set to endless rotation by enabling the endless option. The default setting is OFF.

E-5. AUTO SCAN – SPEED

Auto scan speed can be programmed from 05°/S up to 35°/S. The default setting is 10°/S.

E-6. AUTO SCAN – DWELL TIME

The dwell time at the start and end points can be programmed from 1 second to 30 seconds. The default setting is 03 seconds.

E-7. AUTO SCAN – SAVE AND EXIT

To save the memorized data and escape this page, move the joystick right or press the pan right key when the cursor is at SAVE AND EXIT.
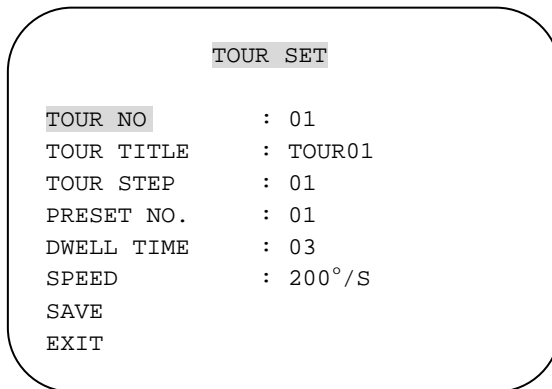
E-8. AUTO SCAN – EXIT

To escape this page, move the joystick right or press the pan right key.

OSD MENU SETTING

F. TOUR SET

8 Programmable tours can be set and each tour can have up to 64 preset steps. After setting up the tours the 71~78 + preset buttons launch group tours # 1~8

```
                TOUR SET

   TOUR NO        : 01
   TOUR TITLE     : TOUR01
   TOUR STEP      : 01
   PRESET NO.     : 01
   DWELL TIME     : 03
   SPEED          : 200°/S
   SAVE
   EXIT
```

←————— **DEFAULT SETTING**

F-1. TOUR SET – TOUR NO.

Up to 8 group tours can be programmed.

F-2. TOUR SET – TOUR TITLE

To set a tour title, use the joystick left/right or pan left/right keys. Each title can have up to 16 characters.

Press ZOOM TELE button to move the next character from left to the right and ZOOM WIDE button to move the next character from right to left (Space displays when ☐ appears) The tour title is not displayed on the monitor and is only for the reference of user.

F-3. TOUR SET – TOUR STEP

Each tour group consists of up to 60 preset steps with different dwell time and speed. It is possible to match any preset # for any tour step.

F-4. TOUR SET – PRESET NO.

For each tour step it is possible to select any preset number up to 64.   The default setting is BLK

F-5. TOUR SET – DWELL TIME

Dwell time can be programmed from 1-99 seconds. The default setting is 03 seconds.

F-6. TOUR SET – SPEED

Each tour step can be set with a different speed up to 200°/S and it is selectable from 10°/S.   The default setting is 200°/S.

F-7. TOUR SET – SAVE

To save the memorized data and escape this page, move the joystick right or press the pan right key when cursor is at SAVE
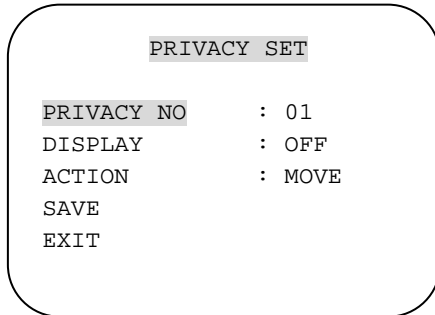
F-8. TOUR SET – EXIT

To escape this page, move the joystick right or press the pan right key.

OSD MENU SETTING

G. PRIVACY SET

4 Privacy masking zones can be set.

```
        PRIVACY SET

PRIVACY NO     : 01
DISPLAY        : OFF
ACTION         : MOVE
SAVE
EXIT
```

←—————— **DEFAULT SETTING**

G-1.   PRIVACY SET – PRIVACY NO.

Up to 4 privacy masking zones can be set.

G-2.   PRIVACY SET – DISPLAY.

Move the joystick right or left or press pan right/left to set ON in order to show the selectable block in the center of the monitor.   This block appears as a translucent square with blue color when set ON.   The default setting is OFF.

G-3.   PRIVACY SET – ACTION (MOVE / ADJUST)

To set the blocking area, press FOCUS FAR button when MOVE MODE is displayed.   Then use the joystick or pan keys to the user defined area in order to set the blocking area.   Then press FOCUS FAR button again to escape from MOVE MODE.

To adjust the size of the blocking area, move the joystick or use the pan keys when the cursor is on ACTION. After it has changed to ADJUST MODE, press FOCUS FAR button in order to adjust the size of the blocking area. The size of the blocking area can be adjusted by using joystick up/down or left right – or the pan and tilt keys. After adjusting the size of the blocking area, press FOCUS FAR button to escape the ADJUST mode.

- ADJUST: You can change the masking size by using the joystick or pan keys
- MOVE: You can move the masking area by using the joystick or pan keys (Default)

G-4.   PRIVACY SET – SAVE

After setting the privacy masking zone, to save the data, move the joystick right or pan right key when the cursor is on SAVE. After saving the data, the cursor moves to PRIVACY NO.2 automatically to prepare for the next privacy masking zone.

G-5.   PRIVACY SET –EXIT

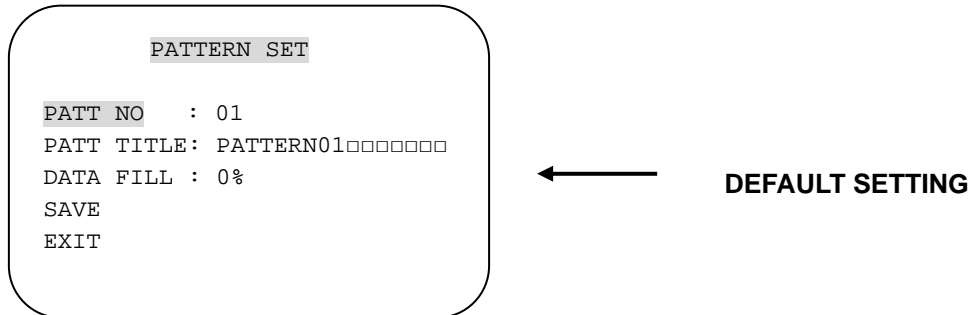To escape this page, move the joystick right.

OSD MENU SETTING

H. PATTERN SET

8 programmable patterns are available, each with a programmable title.

After setting up each pattern # 1~8, 81~88+ preset buttons will recall Patterns # 1~8.

```
        PATTERN SET

PATT NO   : 01
PATT TITLE: PATTERN01□□□□□□□
DATA FILL : 0%
SAVE
EXIT
```

← **DEFAULT SETTING**

H-1. PATTERN SET –PATT NO.

Up to 8 programmable user-defined patterns are available.

H-2. PATTERN SET –PATT TITLE

To set PATTERN TITLE move Joystick left/right or use the pan keys.

Press ZOOM TELE button moves to the next character from the left / right and ZOOM WIDE button moves to the next character from the right / left (Space displays when □ appears)   The pattern title is not displayed on the monitor, but only for the reference of the user.

H-3. PATTERN SET –DATA FILL

To memorize a pattern, press FOCUS FAR button in order to start the process. The progress is shown as % filled. Press FOCUS FAR button again in order to escape.

H-4. PATTERN SET –SAVE

To save the memorized pattern data, move the joystick right or press the pan right key when the cursor is on SAVE. Then the cursor moves to the PATT NO.02 in order to prepare for the next pattern.
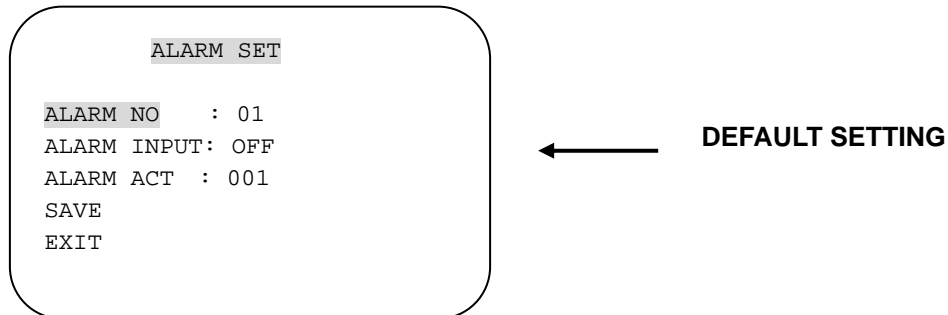
H-5. PATTERN SET –EXIT

To escape this page, move the joystick right or press the pan right key.

OSD MENU SETTING

I. ALARM SET

4 Alarm inputs are available and each input can activate presets, group tours or patterns.

```
         ALARM SET

ALARM NO   : 01
ALARM INPUT: OFF           ←——————    DEFAULT SETTING
ALARM ACT  : 001
SAVE
EXIT
```

I-1. ALARM SET – ALARM NO.

Up to 4 alarms are selectable by using joystick right or pressing the pan right key when the cursor is on ALARM NO.

I-2. ALARM SET – ALARM INPUT

Alarm inputs can be programmed as NC (Normally Close) or NO (Normally Open)

The default setting is OFF

I-3. ALARM SET – ALARM ACT

Active alarms can trigger modes such as presets, Group tours 1-8, and Patterns 1-8. Use the joystick or pan keys to select any preset number, group tour no. or pattern no.

I-4. ALARM SET – SAVE

After setting up the alarm features, to save the data move the joystick right or press the pan right key when the cursor is on SAVE. After saving the data, the cursor moves to Alarm NO.2 automatically to prepare for the next alarm.

I-5. ALARM SET –EXIT

To escape this page, move the joystick right or press the pan right key.

* Before activating Alarms, you must set ALARM ENABLE at DOME SET – ALARM – ENABLE (Refer to page 15)
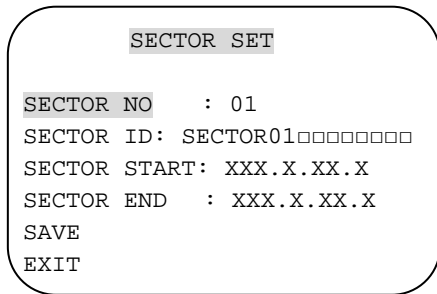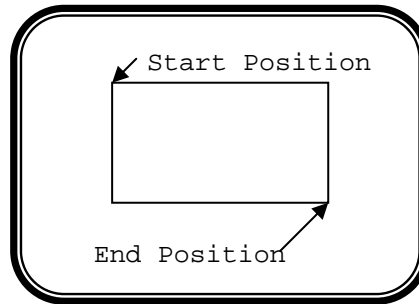
OSD MENU SETTING

J. SECTOR SET

Up to 8 programmable sectors are available, each with a 16 character title.

This feature allows the various areas of the domes 360° rotation to be given logical titles.
When the dome is moved the relevant title for each area is displayed as the dome passes
through the area.

```
        SECTOR SET

SECTOR NO   : 01
SECTOR ID: SECTOR01□□□□□□□□
SECTOR START: XXX.X.XX.X
SECTOR END  : XXX.X.XX.X
SAVE
EXIT
```

DEFAULT SETTING

J-1. SECTOR SET – SECTOR NO.

Up to 8 programmable sectors are available.

J-2. SECTOR SET – SECTOR ID

To set a SECTOR ID, use the joystick or pan left/right keys.

Press ZOOM TELE button to move to the next character from left to right and ZOOM WIDE button
to move to the next character from right to left (Space displays when □ appears)

J-3. SECTOR SET – SECTOR START

To set a SECTOR START position, press FOCUS FAR button then move the joystick or pan keys to
set the position. Press FOCUS FAR button again to escape.

J-4. SECTOR SET – SECTOR END

To set a SECTOR END position, press FOCUS FAR button then move the joystick or pan keys to
set the position. To press FOCUS FAR button again to escape.

J-5. SECTOR SET – SAVE

After setting the SECTOR positions, to save the data move the joystick right or press the pan right
key when the cursor is on SAVE. After saving the data, the cursor moves to SECTOR NO.2
automatically to prepare for the next SECTOR.

J-6. SECTOR SET –EXIT

To escape this page, move the joystick right or press the pan right key.

K. EXIT

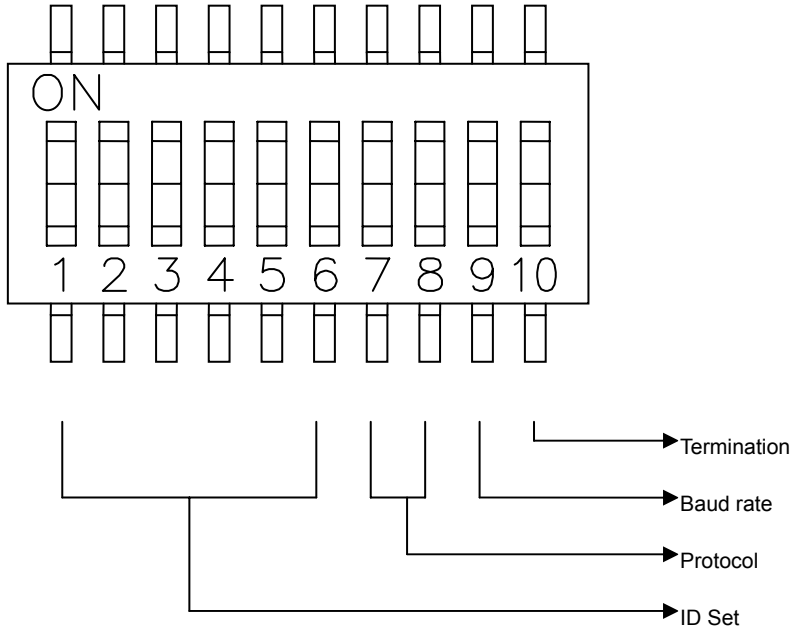To escape OSD Main Menu, move joystick to the right re

DIP SWITCH SETTING

A. FACTORY DEFAULT SETTING

The dome cameras RS 485 address is set using switches 1-6 of DIP SW1, refer to the table below...

Open the camera case to set ID using DIP SW1.

* Factory default: Camera ID = 1, PELCO-D Baud Rate: 2400bps

B. ID SETTING (1-ON, 0-OFF) (1➜10)

DIP SW	ID VALUE	DIP SW	ID VALUE	DIP SW	ID VALUE
100000XXXX	1	111010XXXX	23	101101XXXX	45
010000XXXX	2	000110XXXX	24	011101XXXX	46
110000XXXX	3	100110XXXX	25	111101XXXX	47
001000XXXX	4	010110XXXX	26	100011XXXX	48
101000XXXX	5	110110XXXX	27	100011XXXX	49
011000XXXX	6	001110XXXX	28	010011XXXX	50
111000XXXX	7	101110XXXX	29	110011XXXX	51
000100XXXX	8	011110XXXX	30	001011XXXX	52
100100XXXX	9	111110XXXX	31	101011XXXX	53
010100XXXX	10	000001XXXX	32	011011XXXX	54
110100XXXX	11	100001XXXX	33	111011XXXX	55
001100XXXX	12	010001XXXX	34	000111XXXX	56
101100XXXX	13	110001XXXX	35	100111XXXX	57
011100XXXX	14	001001XXXX	36	010111XXXX	58
111100XXXX	15	101001XXXX	37	110111XXXX	59
000010XXXX	16	011001XXXX	38	001111XXXX	60
100010XXXX	17	111001XXXX	39	101111XXXX	61
010010XXXX	18	000101XXXX	40	011111XXXX	62
110010XXXX	19	100101XXXX	41	111111XXXX	63
001010XXXX	20	010101XXXX	42		
101010XXXX	21	110101XXXX	43		
011010XXXX	22	001101XXXX	44		

DIP SWITCH SETTING

C. PROTOCOL SETTING

$7^{th} \sim 8^{th}$ dip switches are used for Protocol Setting.

Factory Default: Pelco-D or Pelco-P (Auto detection)

DIP SW1- 7	DIP SW1- 8	
OFF	OFF	Pelco-D or Pelco-P
ON	OFF	VICON
OFF	ON	SAMSUNG
ON	ON	

D. BAUD RATE SETTING

The 9th Dip Switch is used for BAUD RATE setting.

DIP SW can be changeable to 2400bps, 9600bps.

Factory Default: 2400bps. (If user selects Vicon protocol, then Baud rate is automatically set as 4800bps.
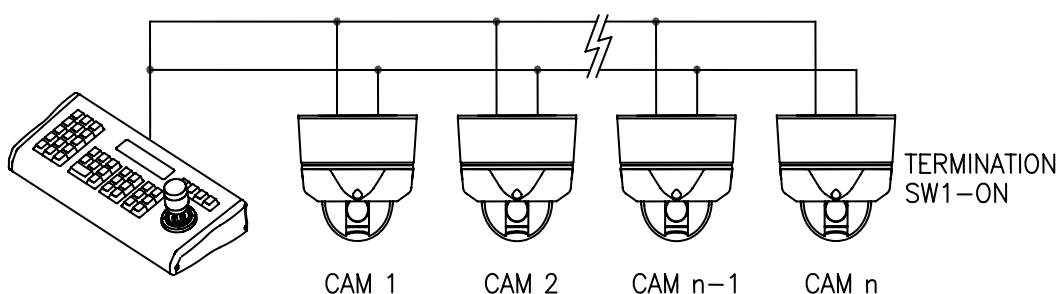
DIP SW1 9th	BAUD RATE
OFF	2400bps(Default) 4800bps(VICON)
ON	9600bps

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E. 485 TERMINATIONS

10th Dip Switch is used for 100Ω termination.

Set on 10th Dip Switch only for the last looped camera from the controller.

Even in case of only one camera, set on 10th Dip Switch of the camera.

TROUBLE SHOTING

If you have trouble setting up or operating the camera, refer to the following.

PROBLEM	SOLUTION
No operation	Check if the power supply is DC12V. Check if RS-485 communication cable is connected correctly. Check camera ID setting. Check the RS 485 termination.
No picture	Check if all the cables are connected correctly. Check if the monitor is adjusted correctly. Check for video locally at the dome.
Dark screen	Check video termination and monitor settings
Abnormal camera operation	Check if PSU voltage level at the dome Check the RS 485 termination.

SPECIFICATIONS

MODEL			10X A/F CAMERA MODULE
PAN /TILT	Pan Rotation Angle		360˚ Endless
	Pan Speed	Manual	100˚ ~ 150˚/sec
		Preset	Max 200˚ /sec
	Tilt Rotation Angle		0˚ ~ 90˚
	Tilt Speed	Manual	100˚ ~ 150˚/sec
		Preset	Max 200˚ /sec
	System Accuracy		0.2˚
FUNCTIONS	Presets		165 positions with a 16-character label available for each position with different speed steps
	Group Tour		Max. 8 Programmable group tours (each one consisting of up to 60 preset steps with different steps)
	Auto scan		Programmable Auto scan
	Pattern		8 Programmable Patterns (total 480 seconds)
	Privacy Zone		4 privacy zones -
	Sector		8 selectable Sectors with 16 characters
	Password Protection		Yes
	Alarm Input		4 alarms OFF/NC/NO (with various programmable states)
	Alarm Actions		Activate preset, Group scanning or Patterns
	Auto Flip		ON / OFF
	OSD Menu		Multiple Languages on screen
	Communication		RS-485
	Protocol		Pelco D/P, Vicon, Samsung
POWER	Consumption (12V DC)		9W Max (Heater Type 15W)
	Consumption (24V AC)		18W Max (Heater Type 30W)
	Power Supply(12V DC)		DC12V 750mA (Heater Type DC12V 1.2W)
	Power Supply(24V AC)		AC 24V 650mA (Heater Type AC24V 1.3W)
OTHERS	Construction		die-casting , Anti-vandal dome cover
	Dimensions		158.8φ (D) * 163.0mm(H)
	Weight		1.5 kg
	Motor Type		Stepper Motor
	Micro Steps		1/4 Step
	Storage Temperature		-10 ~ 60
	Operating Temperature		0 ~ 50
	Certifications		CE, FCC, IP66
CAMERA MODULE	Image Sensor		1/4" Sony Super HAD CCD
	Total Image Pixels	NTSC	811(H) * 508(V) 410K
		PAL	795(H) * 596(V) 470K
	Number Of Effective Pixels	NTSC	768(H) * 494(V) 380K
		PAL	752(H) * 582(V) 440K
	Horizontal resolution		More Than 500TV Lines
	Lens	Optical	10x Optical Zoom (F=3.8 to 38mm)
		Digital	10x (100x with optical)
	Day & Night (ICR)		Auto/ Day/ Night
	Min. Shooting Distance		0.35m(Wide)/0.8m(Tele)
	Digital Slow Shutter		2/4/8/16/24/32/64/128/ OFF
	Min. illumination	Normal mode	0.7Lux (50IRE)
		Night mode	0.02Lux (ICR On)
	Luminance S/N Ratio		More than 50dB
	Video Output		VBS:1.0Vp-p/75 Ohm
	BLC		ON / OFF
	Flicker less	NTSC	ON / OFF (1/100)
		PAL	ON / OFF (1/120)
	WHITE BALANCE		AWB/ATW/INDOOR/ OUTDOOR

DIMENSIONS

ø167

157

ø100

UNITS : mm