LILIN

D/N WDR 700TVL FAST DOME CAMERA

SP9264/9268 N/P & SP9364/9368 N/P

D/N WDR 700TVL FAST DOME IP CAMERA

IPS9264/9268 N/P & IPS9364/9368 N/P

D/N HUMAN TRACKING FAST DOME CAMERA

ST9264/9268 N/P & ST9364/9368 N/P

INSTRUCTION MANUAL

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PREFACE

SP9264/9268/9364/9368 & IPS9264/9268/9364/9368 & ST9264/9268/9364/9368 series fast dome cameras with High resolution of 700TV lines offer significant enhancement and refinements to bring you the most innovative surveillance solutions. SP9264/9268/9364/9368 & IPS9264/9268/9364/9368 & ST9264/9268/9364/9368 series are the leading product in the industry offering the most advanced features such as 26X or 36X optical zoom lens, 256x Digital Zoom, Wide Dynamic Range, Digital Noise Reduction, High Light Compensation and Digital Image Stabilizer.

D/N WDR 700TVL Fast Dome series measure only 145mm in diameter and is capable of making 360 degrees continuous rotation with a speed range of 0.15 to 360 degrees per second, ensures direct and accurate target positioning. When required the dome can be quickly spun through 180 degrees, an important feature when something passes directly under the camera.

Up to 128 preset positions can be programmed and recalled with an accuracy of 0.25 degrees. First 16 presets can be divided into 4 groups for auto touring with individual setting for speed and dwell time.

Each Fast Dome has 6 alarm inputs (expandable to 64) can drive the dome to any position in under second. A local alarm output can be configured as NO or NC and two types of alarm response mode provide flexible alarm management. RS-485 control interface makes our fast dome cameras easy to fit into existing systems and compatible with other manufacturer's control systems.

D/N WDR 700TVL Fast Dome IP Camera H.264 AVC (Advanced Video Coding) video compression engine provides high video quality, 960H resolution, bandwidth efficiency, and real-time streaming. The cutting edge of H.264 AVC main profile encoding technology can provide better compression rate and superior video quality at 56 Kbps to 3 Mbps bit rate. Dual streaming design, JPEG and H.264 AVC allow to stream video at low bandwidth (Internet) and high bandwidth (LAN) for optimizing video quality. Low latency design for both Intranet and Internet is a key factor of operating PTZ. Four PTZ web interfaces including lens absolute positioning are designed for easy-to-use purpose.

D/N Human Tracking Fast Dome Camera series will all the features and function of D/N WDR 700TVL Fast Dome Camera and built-in intelligent video processing chip, which enhances the moving object analysis, improves the human feature distinguishing accuracy, and lowers the false action occurrence. Different from the other tracking system tying with several cameras, our newly developed technology allows us to execute the motion tracking function with single camera. The system will auto-zoom on the size of the invader, and monitors the object on the screen center.

D/N WDR 700TVL Fast Dome series are fully-functional and user-friendly. It will meet your need for a wide range of surveillance applications. The application for LILIN tracking dome are (1) Access control area (Bank Chest, Military Magazine, Oil or Chemical tank...). (2) After hour monitoring area (Warehouse, Archives, Parking exit...). (3) Educational Institution or Video Conference. (4) Ceremony.

FEATURES

- 26X Auto Focus Lens
  Build-in 26X optical zoom lens with focal length 3.2~83.2mm
- 36X Auto Focus Lens
  Build-in 36X optical zoom lens with focal length 3.3~119mm
- 700 Horizontal TV lines
- Automatic / Manual Iris Control
- Preset ID / Name
- Preset Background Environment File
- Private Mask
- 360° continuous rotation
- Up to 128 programmable preset positions
- Preset positions auto scanning
- High speed rotation and tilt, speed range varies from 0.15°/sec ~ 360°/sec
- 180° Horizontal Instant Flip
- 6 alarm inputs, 1 alarm output can be set as NO (normally open) or NC (normally close) for each Fast Dome
- Build in 1/4" CCD high resolution DSP color camera:
  1. Color / Mono Switch (IR Cut Filter)
     In → Color
     Out → Mono
     Auto → Switch from color to mono when light drops below 3 lux
     Schedule → Switch from color to mono by time setup
  2. 650 TV Lines (Color) ; 700 TV Lines (Mono)
  3. 0.1Lux (Color) ; 0.05Lux (Mono)
  4. On-Screen Setup Menu
  5. White Balance Control : Auto Tracking , Auto Correction , Manual*2 , Anti Color Rolling
  6. Wide Dynamic Range : On(60dB)/Off
  7. Back Light Compensation : On/Off
  8. Auto Gain Control : 0dB ~ 37dB
  9. Brightness Adjustment
  10. Flickerless : On/Off
- RS-485 control interface
- Up to 256 Fast Dome configuration
- Compatible with PC control (protocol required)
- Power supply options : 100 ~ 240VAC or 24VAC
- True H.264 AVC/MPEG-4 part 10 real-time video compression (IPS926X/936X)
- 960H resolution at 960x480(NTSC)/960x576(PAL) in live monitoring (IPS926X/936X)
- Full duplex H.264 AVC and JPEG streaming (IPS926X/936X)

● Human Tracking Fast Dome Camera Function：(ST926X/936X)

1. Human Tracking Fast Dome Camera series are smart sensor and built-in intelligent video processing which has surveillance applications on,
   (1) Moving object detection.
   (2) Tracking and zooming moving object.
2. Human Tracking Fast Dome Camera series have two modes:
   (1) Manual tracking mode (Keyboard mode).
   (2) Auto tracking mode (user can setup the schedule to activate the auto tracking function once a day).
3. If more than one moving object is available in the camera FOV (Field of View) then the camera will track moving object that has highest priority. The highest priority means moving object with largest motion or its position is nearest to the camera.
4. The speed of camera pan-tilt is automatically relative to the speed of moving object.
5. The zooming application will activate if,
   ■ Zoom-In
   The position of moving object is near the center of FOV and its size is approximately smaller than 1/6 of FOV.
   ■ Zoom-Out
   ・The size of moving object is approximately larger than 1/6 of FOV.
   ・The position of moving object at the outside of FOV, on the other hand the moving object almost moving out of FOV.
6. Human Tracking Fast Dome Camera series uses the home position of auto tracking mode.
7. The auto tracking mode always checks the idle condition. Idle condition is where the moving object does not appear in the camera view. When the system is on idle condition, it will check the previous tracking condition, if it is idle, the camera will zoom out two steps and if remains idle for approximately 10 seconds, then, camera will return to home position.
8. The limitation of tracking object moving speed

Length of monitor area (m)	Limitation of tracking speed (km/hr)	Tracking object possible location distance (Wide side with view angle 39.2°)
6	10	5m
12	20	10m
25	40	20m
50	80	40m

Above data is for reference only

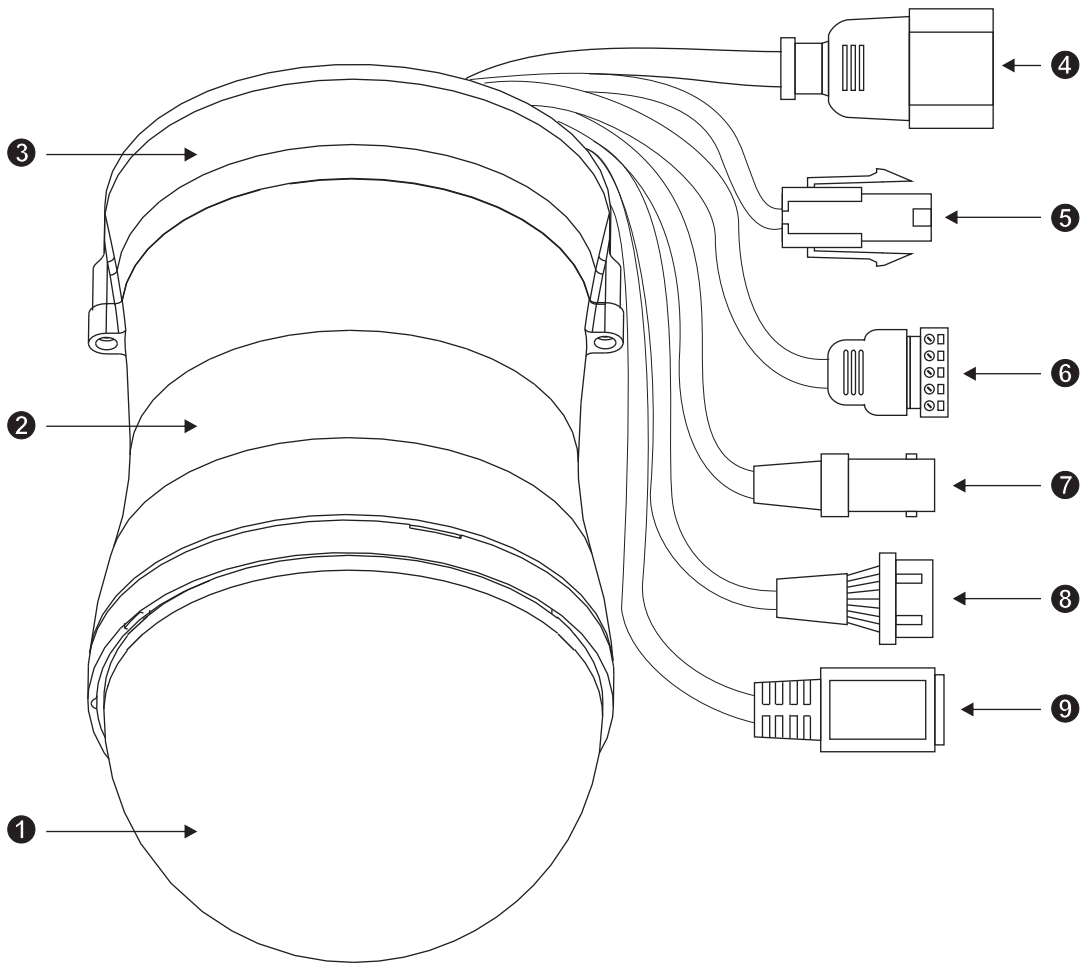
9. Tracking object must be larger than 50TV Lines.

WARNINGS & CAUTIONS

Please read the manual before attempting installation or operation

1. Please be aware to the warnings and cautions notice.
2. Don't use any chemical detergent to clean the machine surface, use a damp cotton cloth only. Regularly clean the dome cover to assure proper focus ability.
3. Please install the Fast Dome in a dry area, water and high humidity may cause damage on internal parts. External housing should be used for outdoor installation.
4. Please use parts supplied by the manufacturer only, any unqualified part using in the equipment may violate the warranty.
5. Avoid installing the equipment in an unstable area. Make sure the area is firm and stable. Falling equipment may injure personnel and damage the equipment.
6. Do not install the equipment near any flammable gas. Violation may cause fire or injury.
7. Avoid running video cable and signal cable through or passing interference sources such as video waves, broadcast station, power generator, elevator motor or high voltage area ..... etc. Violation may cause interference.
8. Make sure the power cable is properly fixed. Un-suitably fixed cable may cause serious short circuit or fire.
9. Correct cable connection is important. Do not place any object on the connection cable and change the cable if there is damage on cable. Violation may cause short circuit, fire and injury.
10. Make sure ground is well connected to avoid damage caused by lightning.
11. Do not put any foreign objects inside the equipment and do not spray any liquid on equipment. This will avoid short circuit damage.
12. Do not touch power connection with wet hands to avoid short circuit or electricity shock.
13. Do not apply smash-force on the equipment. Violation may cause damage.
14. Do not install the equipment in a location that may expose the equipment directly to sunlight. Violation may cause colour fading or damage.
15. Do not install the equipment in high temperature or low temperature environment to avoid damage. The normal operational temperature is between -10°C ~ +50°C.
16. Fast Dome contains high sensitive electric parts inside. Do not try to repair them without qualified personnel.
17. Turn off the power immediately and contact the technician when the following occurs:
    A. Damage on power cable or plug.
    B. Water leak into the equipment.
    C. Fast Dome can not be operated normally.
    D. Equipment falling on ground or damage on external case.
    E. Unusual occurrence.
18. Warning: Do not try to repair the equipment. Only a qualified technician may disassemble and repair the equipment. Shut off the power before disassemble the equipment and don't put power on unless the case is completely assembled.

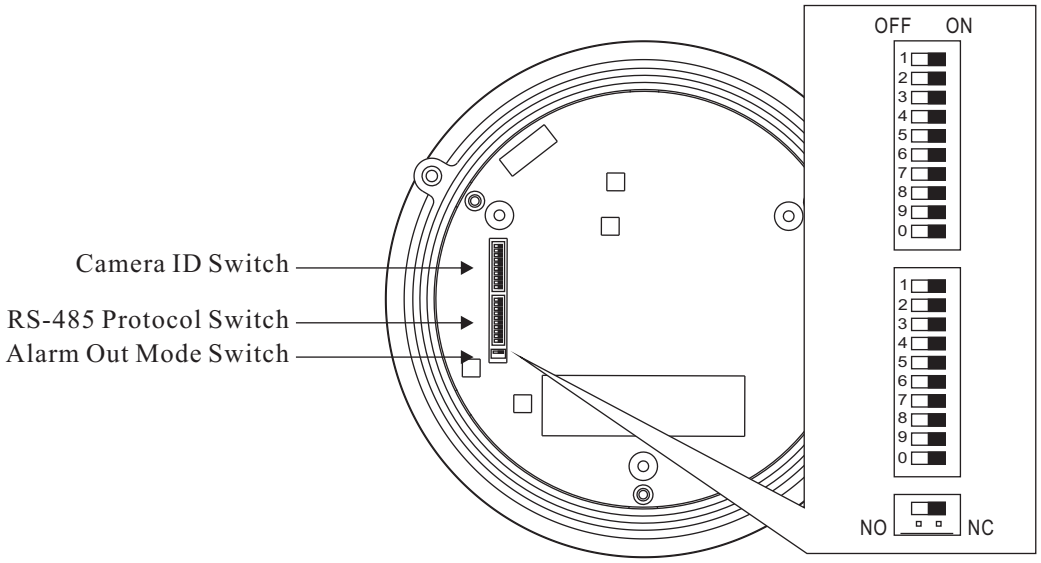
STRUCTURAL ELEMENT



❶ Dome Cover
❷ Camera Case
❸ Bottom Chassis
❹ Power In Jack (AC100 ~ 240V)
❺ Power In Jack (AC24V)
❻ RS-485 In/Out Terminal
❼ Video Out Jack
❽ Alarm In/Out connector
❾ RJ45 Network Connector [IPS926X/936X]

FAST DOME CAMERA SET UP

DIP Switch Setting



Remark: Black icon of the DIP Switch bump.

Alarm Out Mode Switch Setting

Alarm Out Mode can be set as NC (normally close) or NO (normally open)

RS-485 Protocol Switch Setting

Explanation of DIP Switch Setting :

1. RS-485 IN-TML RES. : RS-485 IN Terminal Resistor ON/OFF
2. RS-485 OUT-TML RES. : RS-485 OUT Terminal Resistor ON/OFF
3. HALF / FULL : 2 wiring system (HALF duplex) or 4 wiring system (Full duplex)
4. BAUD SEL 1 : Transmission speed selection 1
5. BAUD SEL 2 : Transmission speed selection 2
6. PROTOCOL SEL 1 : Protocol selection 1
7. PROTOCOL SEL 2 : Protocol selection 2
8. PROTOCOL SEL 3 : Protocol selection 3
9. PROTOCOL SEL 4 : Protocol selection 4
10. — : NA

(Using Pelco D, Please contact your nearest agent.)

- RS-485 In/Out Terminal Resistor Setting
  - ☞ Daisy Connection: Set RS-485 In and Out terminal resistor as ON (Factory Initialize).
  - ☞ Parallel Connection: Set the front and last equipments terminal resistor as ON. The parallel connection equipment in the middle set as OFF to keep the best transmitted status.

● RS-485 Communication Mode Selection

DIP SWITCH	3
2 wiring system (HALF duplex)	OFF
4 wiring system (FULL duplex)	ON

☞ Communication Mode of HALF: Most of systems use this mode because of low-cost and easy setup, but this mode can't receive and transmit data simultaneously.

☞ Communication Mode of FULL: This Mode can receive and transmit data simultaneously.

● Transmission Speed Setting

BAUD RATE SELECTION		
DIP SWITCH	4	5
2400 bps	ON	ON
4800 bps	OFF	ON
9600 bps	ON	OFF
19200 bps	OFF	OFF

Remark: LILIN Protocol control mode is N, 8, 1 Baud Rate: 9600bps

● Protocol Setting

PROTOCOL SELECTION				
DIP SWITCH	6	7	8	9
MLP2 (MERIT LILIN PROTOCOL 2) VERSION	ON	ON	ON	ON
MLP1 (MERIT LILIN PROTOCOL 1) VERSION	OFF	ON	ON	ON

Remark: LILIN MLP1 (MERIT LILIN PROTOCOL 1) is same as PIH-717 Fast Dome Protocol

MLP2 (MERITLILIN PROTOCOL 2) is the new protocol for controlling fast dome cameras. The protocol contains 7 bytes which include a check-sum byte and extra control codes. The check-sum byte, for example, can prevent RS-485 interference affecting a protocol. The extra control codes, for example, can provide the feature of controlling absolute position of a fast dome camera. Please refer to MERIT LILIN PROTOCOL2 (MLP2) for detail of command format.

● RS-485 Protocol DIP Switch of LILIN D/N WDR 700TVL Fast Dome (IP) Camera / D/N Human Tracking Fast Dome Camera Series Setting

RS-485 Protocol DIP Switch Setting										
DIP SWITCH	1	2	3	4	5	6	7	8	9	10
MLP2 Version	ON	ON	OFF	ON	OFF	ON	ON	ON	ON	OFF
MLP1 Version	ON	ON	OFF	ON	OFF	OFF	ON	ON	ON	OFF

Fast Dome ID Address Setting Refer Chart

Up to 64 Fast Dome Camera can be serial linking in one system.

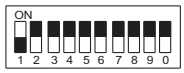
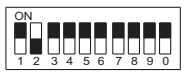
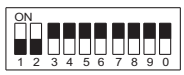
Therefore each dome is addressing by ID switch located at the base of the Fast Dome.

Remark: Black icon of the DIP Switch bump.

● When select MLP1 (MERIT LILIN PROTOCOL 1), Camera ID setting as followings:

1 	17 	33 	49 
2 	18 	34 	50 
3 	19 	35 	51 
4 	20 	36 	52 
5 	21 	37 	53 
6 	22 	38 	54 
7 	23 	39 	55 
8 	24 	40 	56 
9 	25 	41 	57 
10 	26 	42 	58 
11 	27 	43 	59 
12 	28 	44 	60 
13 	29 	45 	61 
14 	30 	46 	62 
15 	31 	47 	63 
16 	32 	48 	64 

● When select MLP2 (MERIT LILIN PROTOCOL 2), Camera ID setting as followings:

1 	22 	43 	64 
2 	23 	44 	65 
3 	24 	45 	66 
4 	25 	46 	67 
5 	26 	47 	68 
6 	27 	48 	69 
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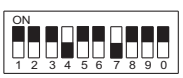
10 	31 	52 	73 
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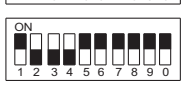
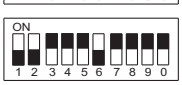
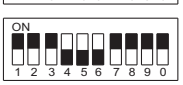
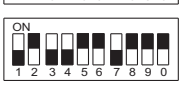
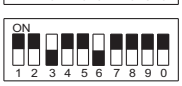
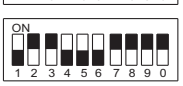
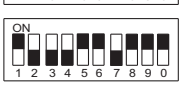
12 	33 	54 	75 
13 	34 	55 	76 
14 	35 	56 	77 
15 	36 	57 	78 
16 	37 	58 	79 
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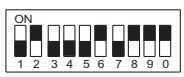
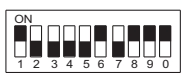
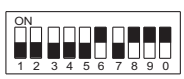
94 

95 

96 

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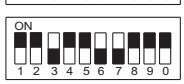
101 

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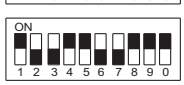
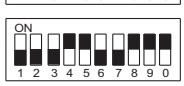
103 

104 

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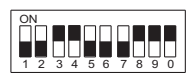
116 

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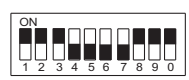
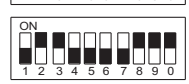
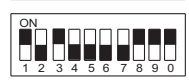
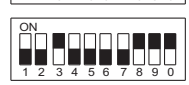
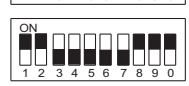
121 

122 

123 

124 

125 

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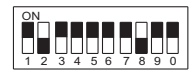
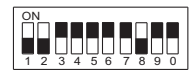
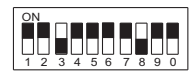
131 

132 

133 

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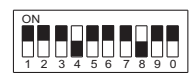
137 

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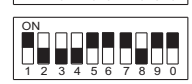
143 

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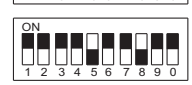
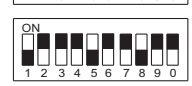
145 

146 

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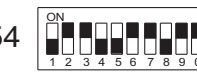
154 

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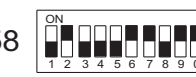
158 

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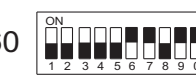
160 

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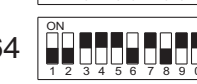
164 

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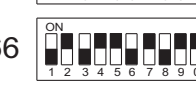
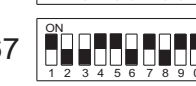
166 

167 

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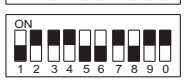
178 

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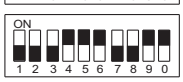
200 

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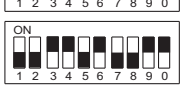
212 

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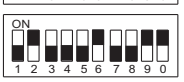
222 

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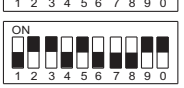
234 

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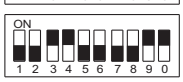
244 

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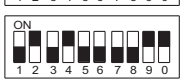
246 

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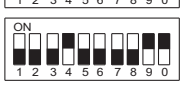
248 

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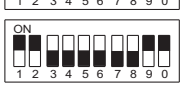
253 

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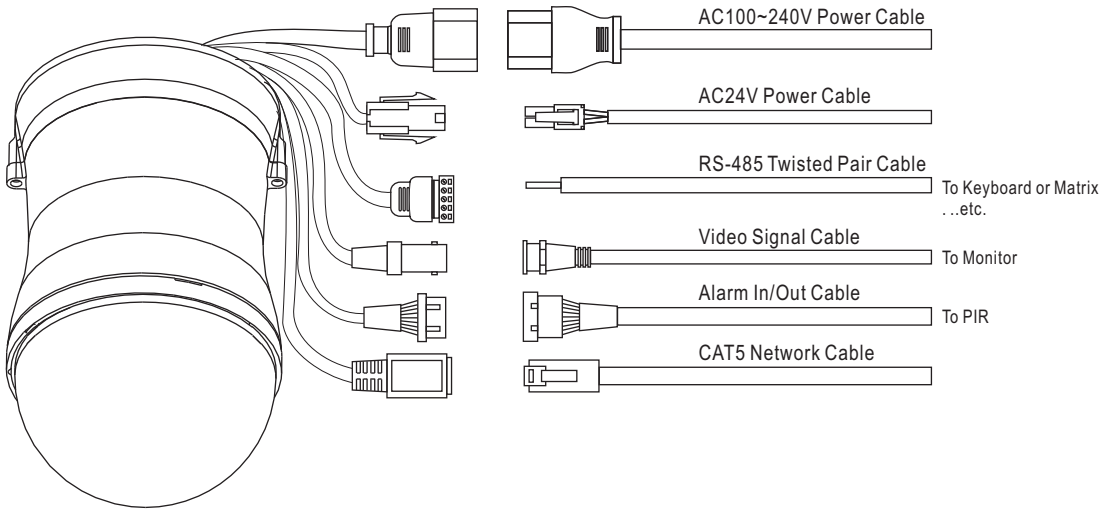
Fast Dome Connection Jack and Cable Requirement



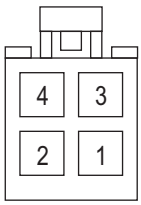
1. AC100 ~ 240V Power Cable

2. AC24V Power Cable

Recommended Cable:

Copper Wire (AWG)		#24 (0.22mm^2)	#22 (0.33mm^2)	#20 (0.52mm^2)	#18 (0.83mm^2)
Length of Cable (approx.)	(m)	20	30	45	75
	(ft)	65	100	160	260

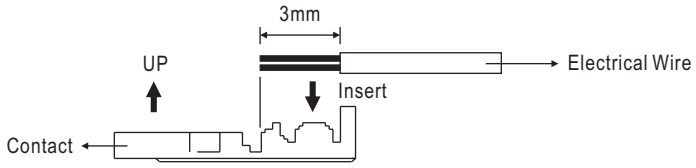
Accessory Connector Information



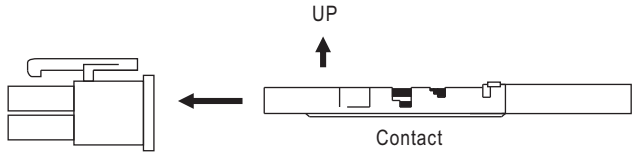
PIN	Power
1	AC24V Live (Black)
2	AC24V Neutral (White)
3	Earth (Green)
4	NA

Assemble the Cable with the Accessory Connector

a. Strip back the cable jacket approx. 3mm and separate the individual conductors.



b. Prepare the individual conductors for clamping. After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



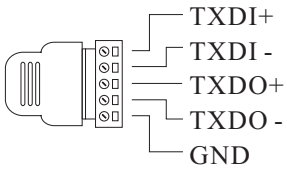
CAUTIONS : CONNECT THIS TO 24V AC CLASS 2 POWER SUPPLY ONLY.

3. RS-485 In/Out Terminal

RS-485 Input (TXDI+, TXDI-) to receiver signal from keyboard, matrix, DVR or multiplexer through twisted pair cable.

RS-485 Output (TXDO+, TXDO-) sending out signal to next fast dome through twisted pair cable.

Transmission Distance: Max. 1 Kilometer



4. Video Out BNC Jack

Video Signal Output CVBS 1.0Vp-p 75Ω BNC

Recommended Data Cable: 5C2V

5. Alarm In/Out Connector

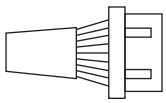
Each fast dome contains 6 alarm inputs and 1 alarm output.

Alarm Input Voltage: 5.6V max.

Alarm Output: 1A 24VDC

Recommended Data Cable: UL26 AWG 80℃ 300V

UL24 AWG 80℃ 300V



Alarm Out:	NO/NC	(Gray)
	COM.	(White)
Alarm In:	GND	(Black)
	IN6	(Red)
	IN5	(Green)
	IN4	(Orange)
	IN3	(Blue)
	IN2	(Yellow)
	IN1	(Violet)

Remark: When using Fast Dome IP Camera, only 3 alarm inputs.

6. Network Connector RJ45 [IPS926X/936X]

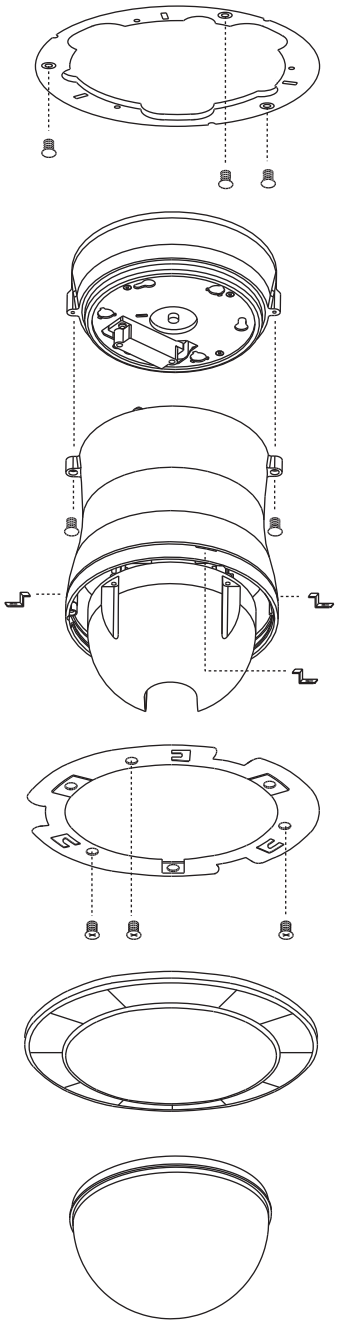
LAN : 10/100Mbps

Recommended Data Cable : CAT5

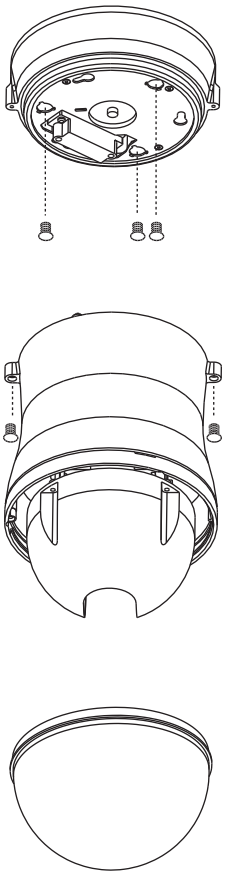
INSTALLATION

Indoor Installation Structural Drawing

Embedded Mounting

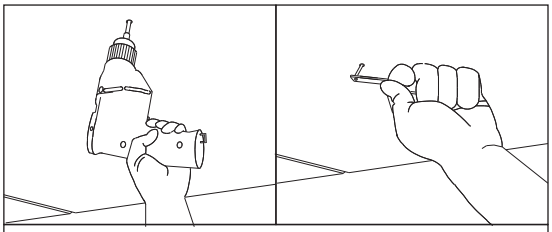


Attached Mounting

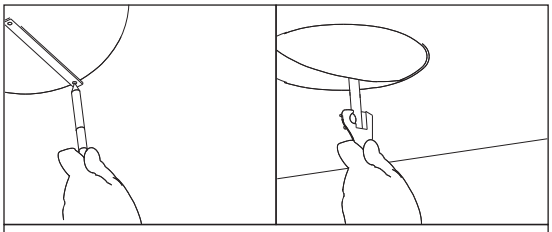


Embedded Mounting (False Ceiling)

Step 1 Ceiling Preparation

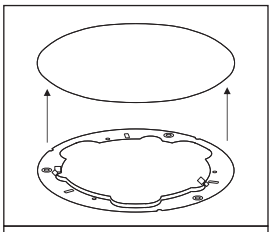


Drill a 3/32" (2.4mm) hole at the center of the chosen area.

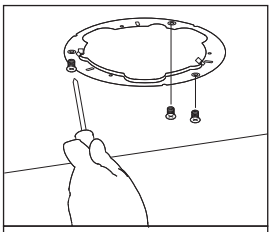


Use a pencil and a compasses to mark a circle 6.7" (170mm) in diameter and cut the circle.

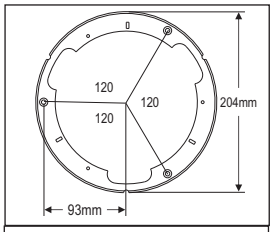
Step 2 The Ceiling Ring



Attach the ring to ceiling

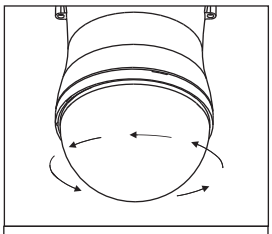


Tighten the three tapping screws into the ceiling or three machine screws with three screw nuts

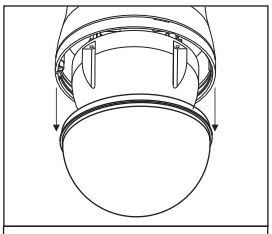


Ring size and screw location

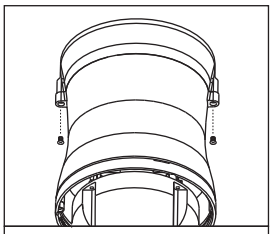
Step 3 Camera Setting



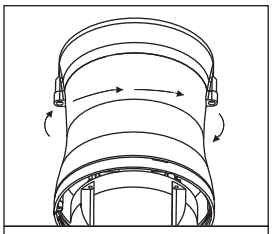
Turn the dome cover counter clockwise



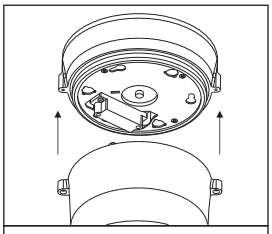
Separate the dome cover from camera



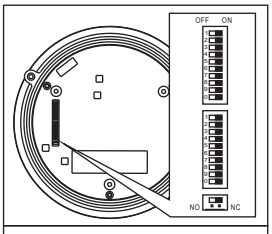
Untighten the two screws from the base



Turn the camera body clockwise

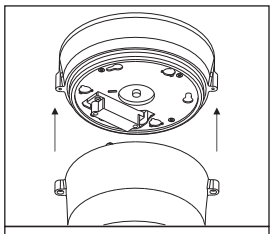


Separate the camera body and base

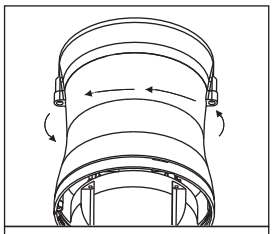


Setting Fast Dome ID, Alarm Out Mode, RS-485 Protocol

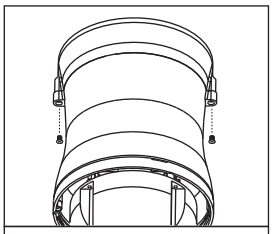
Step 4 Attach the Camera Body and Base



Attach camera body to base
Notice:
position connector is correct or not.

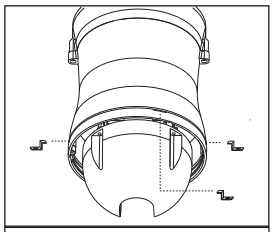


Turn camera body counter clockwise to tight position

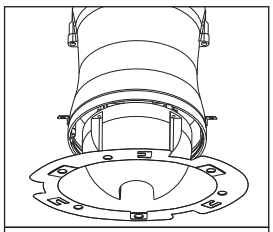


Tighten the two screws to fix the camera body

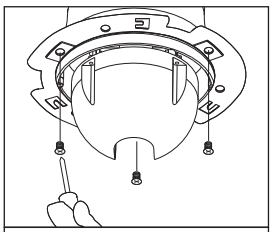
Step 5 The Fix Ring



Put on the three L shape screw nuts

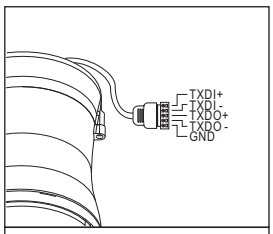


Attach fix ring with screw nuts

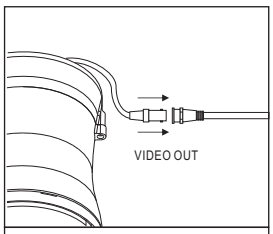


Tighten the three black screws into the screw nuts

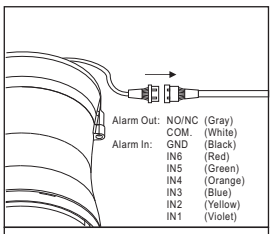
Step 6 Connection



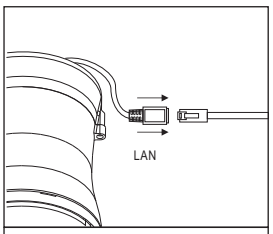
Connect RS-485 cable



Connect video signal cable

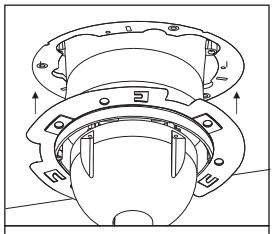


Connect alarm cable

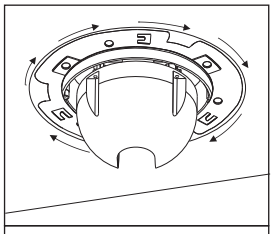


Connect Network cable [Fast Dome IP Camera]

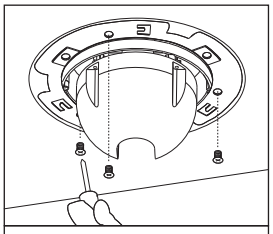
Step 7 Install Camera Body and Decoration Ring and Dome Cover



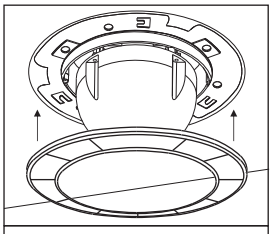
Put camera body and the fix ring into the hole



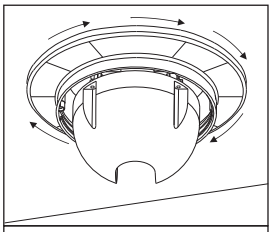
Turn the camera body clockwise to tight position



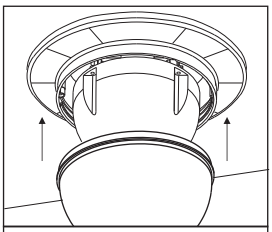
Tighten three black screws



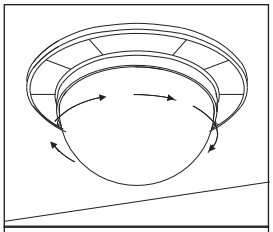
Put on decoration ring



Turn the ring clockwise to tight position



Attach dome cover to camera body

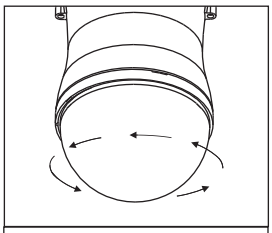


Turn the dome cover clockwise to tight position

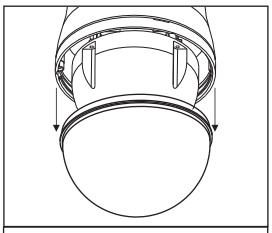
Note : After dome cover is attached, use glass-cleaning cloth to clean dome cover. Unclean dome cover may affect camera performance.

Attached Mounting (Fixed Ceiling)

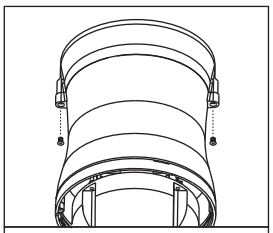
Step 1 Fix The Base



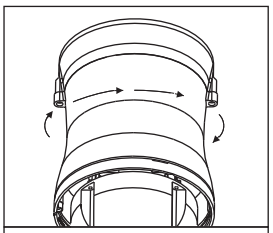
Turn the dome cover counter clockwise



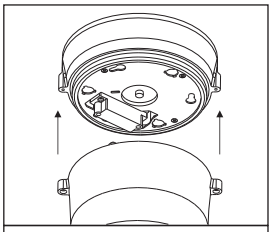
Separate the dome cover from camera



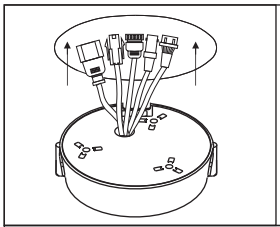
Untighten the two screws from base

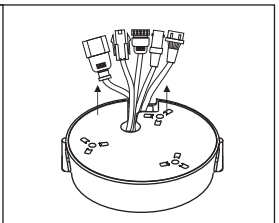


Turn the camera cover clockwise

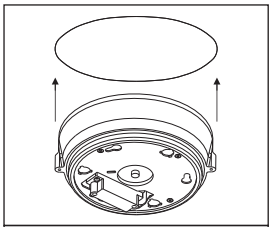


Separate the camera body to the base

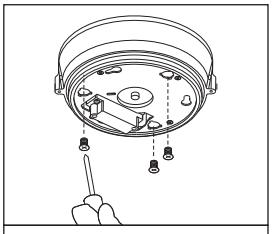




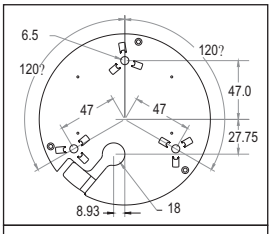
Set all of control cable on middle position and through the hole of ceiling.
Install rubber cover on the cable outlet of base, base, or set control cable on the cable outlet of base.



Attach base to ceiling

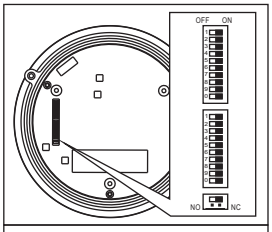


Tighten the three tapping screws into the ceiling



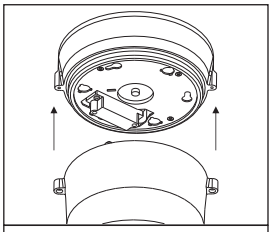
Base size and screw location

Step 2 Camera Setting

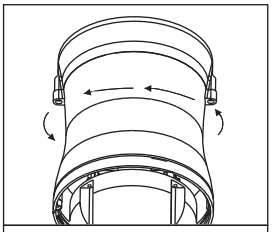


Setting Fast Dome ID,
Alarm Out Mode,
RS-485 Protocol

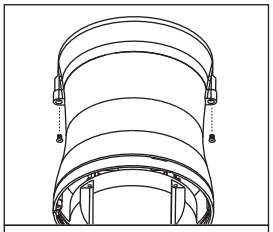
Step 3 Attach the Camera Body and Base



Attach camera body to base
Notice:
position connector is correct or not.

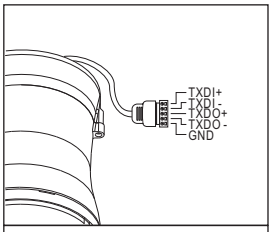


Turn camera body counter clockwise to tight position

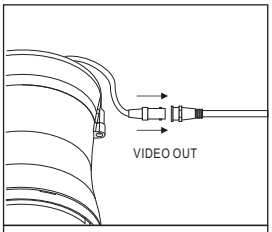


Tighten the two screws to fix the camera body

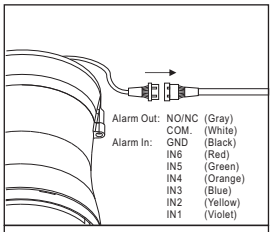
Step 4 Connection



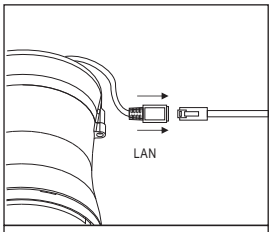
Connect RS-485 cable



Connect video signal cable

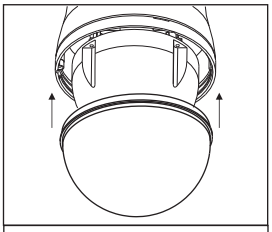


Connect alarm cable

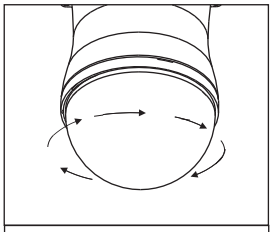


Connect Network cable [Fast Dome IP Camera]

Step 5 Install Dome Cover



Put on dome cover to camera body

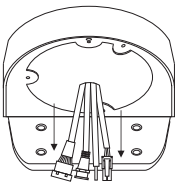


Turn dome cover clockwise to tight position

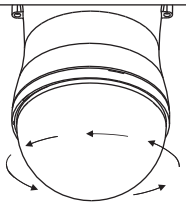
Note : After dome cover is attached, use glass-cleaning cloth to clean dome cover. Unclean dome cover may affect camera performance.

Wall Mounting (Fixed Bracket)

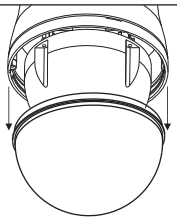
Step 1 Fix The Bracket



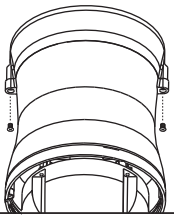
Fix bracket first, and pull control cable and power cable from bracket cable outlet.



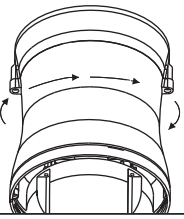
Turn the dome cover counter clockwise



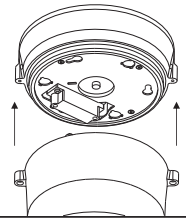
Separate the dome cover from camera



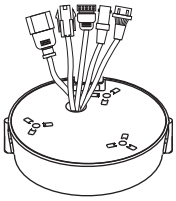
Untighten the two screws from base



Turn the camera cover clockwise

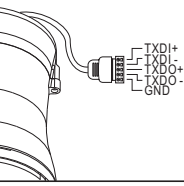


Separate the camera body to the base

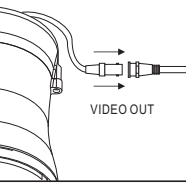


Set all of control cables on the middle position, and install rubber cover on the cable outlet of base

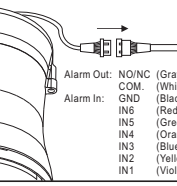
Step 2 Connection



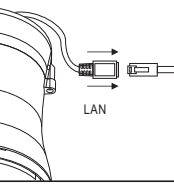
Connect RS-485 cable



Connect video signal cable

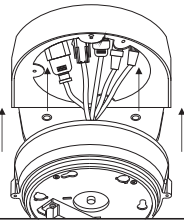


Connect alarm cable

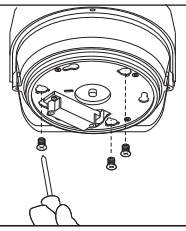


Connect Network cable [Fast Dome IP Camera]

Step 3 Fix The Base

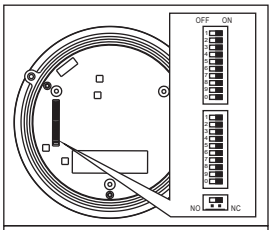


Set base on the installation position of bracket, and arrange all of control cables in the inside bracket



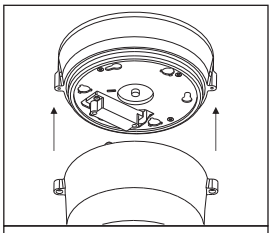
Tighten the three tapping screws into the bracket

Step 4 Camera Setting

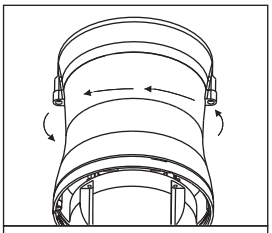


Setting Fast Dome ID,
Alarm Out Mode,
RS-485 Protocol

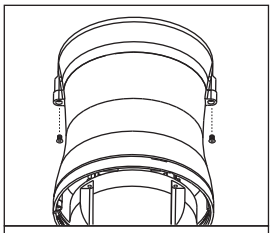
Step 5 Attach the Camera Body and Base



Attach camera body to base
Notice:
position connector is correct or not.

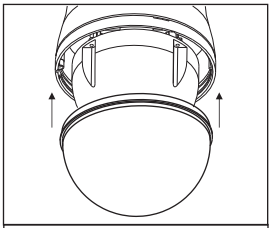


Turn camera body counter clockwise to tight position

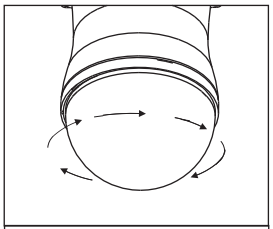


Tighten the two screws to fix the camera body

Step 6 Install Dome Cover



Put on dome cover to camera body



Turn dome cover clockwise to tight position

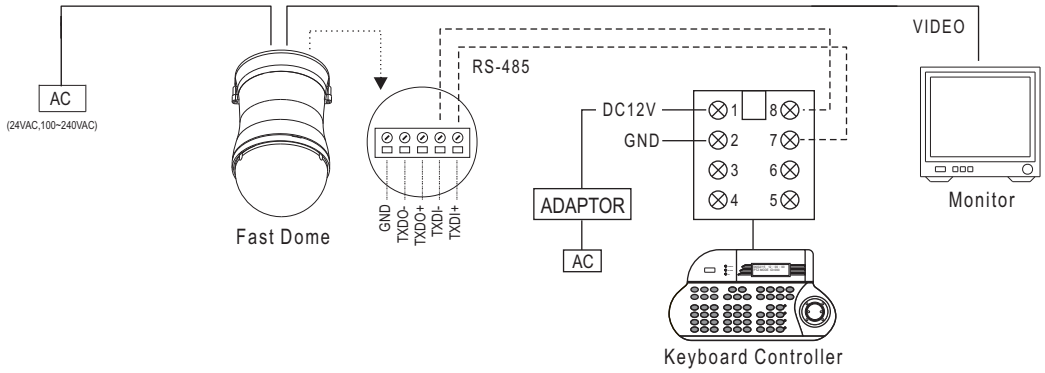
Note : After dome cover is attached, use glass-cleaning cloth to clean dome cover. Unclean dome cover may affect camera performance.

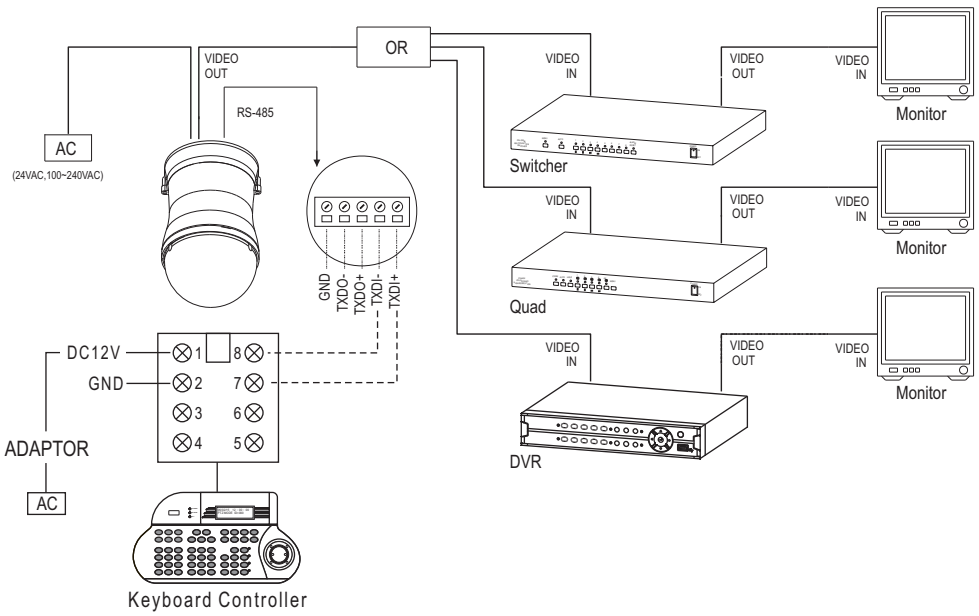
SYSTEM CONFIGURATION

LILIN's integrated Fast Dome Surveillance System is suitable for a wide range of surveillance applications. The system can be as single fast dome with one keyboard or encompassing as 64 domes with comprehensive matrix switching, PC control and even Digital Video Recording.
Such flexibility means future expansion is easily facilitated.

Fast Dome and Keyboard

Single dome configuration: One Fast Dome Camera connects to one PIH-931D/932T.
Telemetry control is sent via twisted pair between Dome and Keyboard.
Video signal from the dome is sent to monitor or multiplexer or quad or switcher.

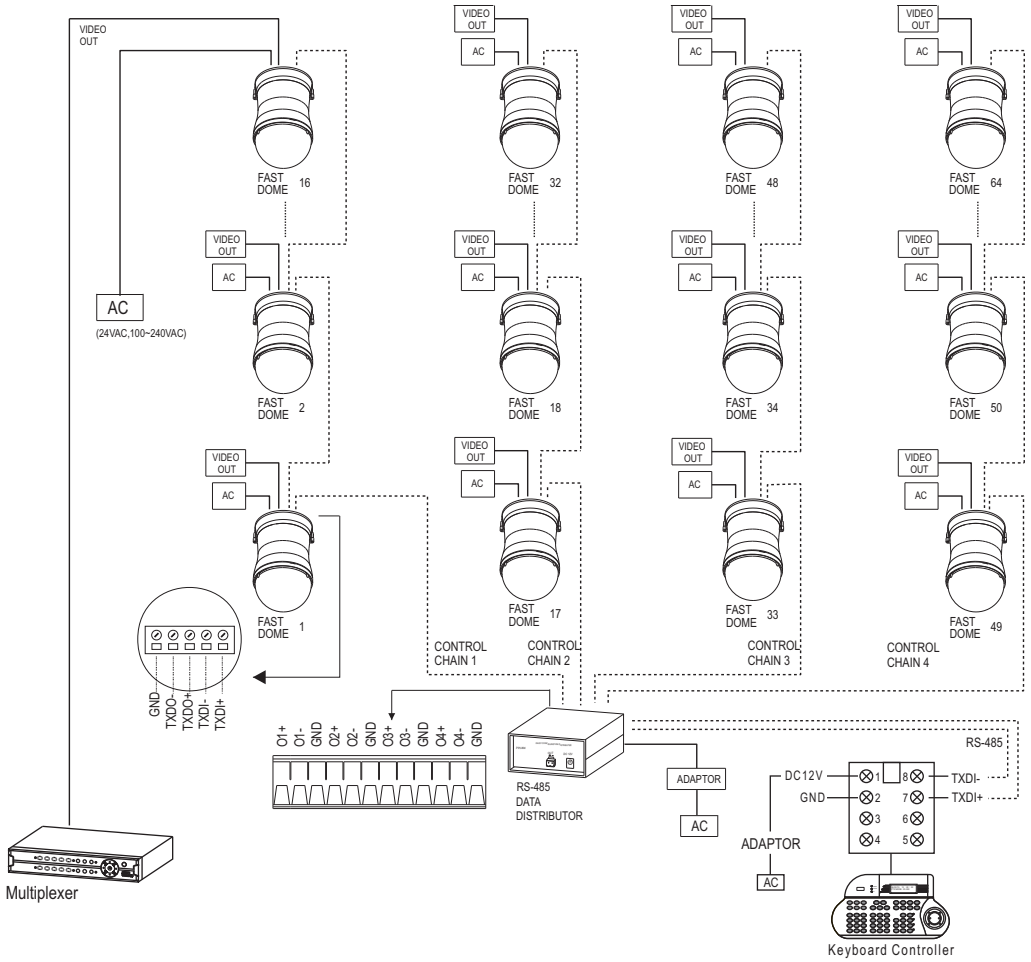




RS-485 Connection

7th pin TXDI+ of Connector Box connects to TXDI+ of RS-485 jack on fast dome.
8th pin TXDI- of Connector Box connects to TXDI- of RS-485 jack on fast dome.

Multiple Domes means that more than one fast dome is linked in the system. Each dome connects to next dome forming a serial linking. Each dome has an individual ID dip switch, which allows the keyboard to identify each fast dome and make command. Sometimes it is more convenient to wire a telemetry system in star configuration rather than daisy chain. To do this a PIH-804Ⅲ data distributor is necessary. It takes an output from a keyboard or a matrix and splits the single data line into 4 separate data lines. One keyboard can control up to 64 camera.



RS-485 Connection Between PIH-804Ⅲ Data Distributor and Fast Dome

1st output TXDI1+ of PIH-804Ⅲ connects to TXDI+ of 1st fast dome and TXDI1- of PIH-804Ⅲ to TXDI-of 1st fast dome.

Linking 2nd Fast Dome

TXDO+ of 1st fast dome connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome.

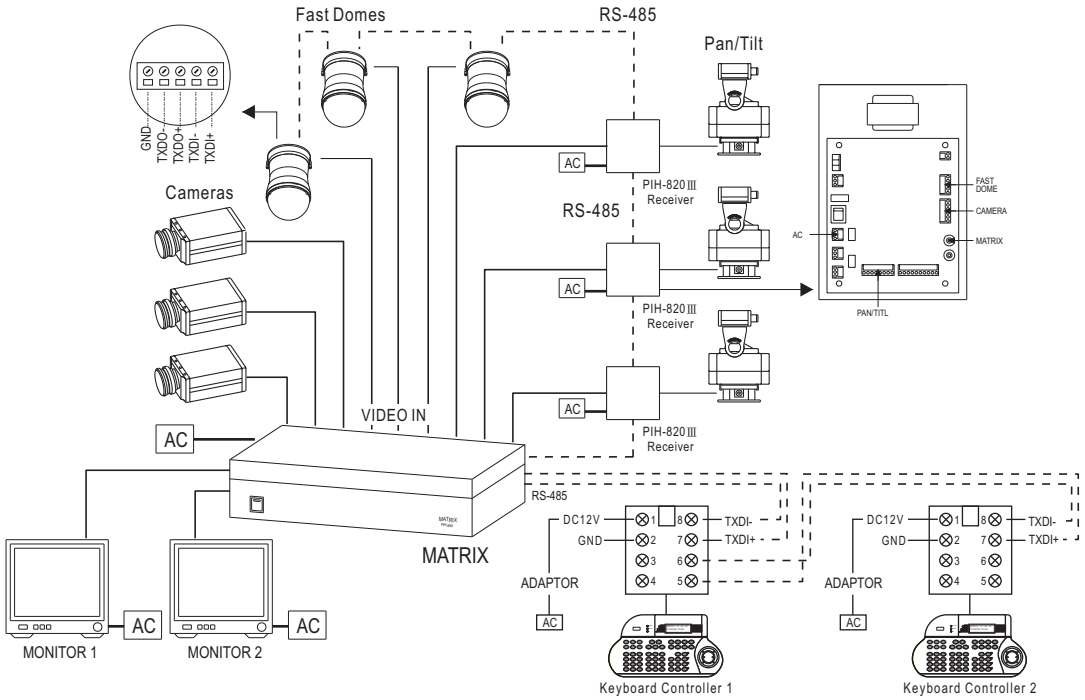
RS-485 Connection Between PIH-804Ⅲ Data Distributor and Keyboard

7th pin TXDI+ of Connector Box connects to TXDO+ on RS-485 OUT jack of PIH-804Ⅲ

8th pin TXDI- of Connector Box connects to TXDO- on RS-485 OUT jack of PIH-804Ⅲ

Fast Dome, Matrix and Keyboard

Matrix System is designed to process multiple video systems and video switching.
Its central process unit (CPU) can manage multiple video signals simultaneously and control other linking system, such as fast dome or PIH-820Ⅲ telemetry receiver.
All telemetry remote control and signal transmissions are through twisted pair. One matrix can manage up to 64 fast domes.
Multiple keyboards can be used for matrix control. 1st keyboard is the master and rests are slaves. Up to 8 keyboards can be used in one system. Each keyboard has a Dip Switch for ID setting.
(Please refer to keyboard's manual for detail)



RS-485 Connection Between Matrix and Fast Dome

TXD+ of receiver jack on matrix connects to TXDI+ of 1st fast dome and TXD- of matrix to TXDI- of 1st fast dome.

Linking 2nd Fast Dome

TXDO+ of 1st dome connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome. 64 fast dome can be linked through the connection as shown.

RS-485 Connection Between Keyboards

5th pin TXDO+ of 1st keyboard's connector box connects to 7th pin TXDI+ of 2nd keyboard's connector box.

6th pin TXDO- of 1st keyboard's connector box connects to 8th pin TXDI- of 2nd keyboard's connector box.

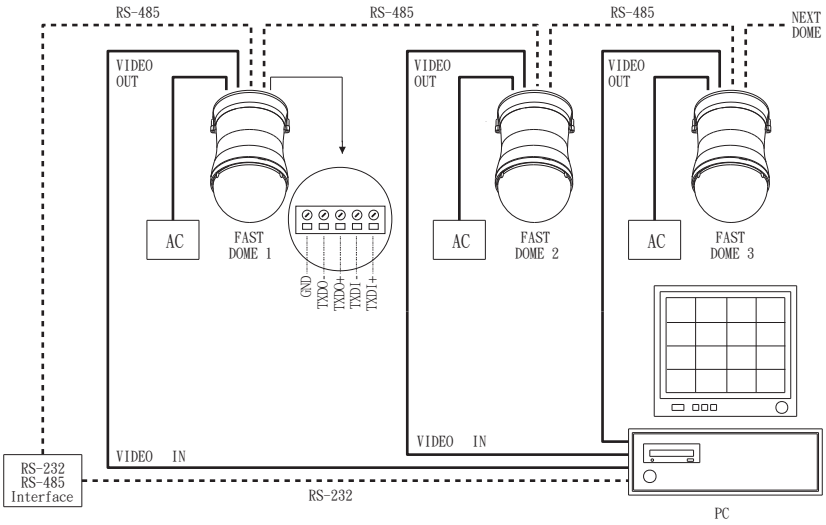
RS-485 Connection Between Keyboard and Matrix

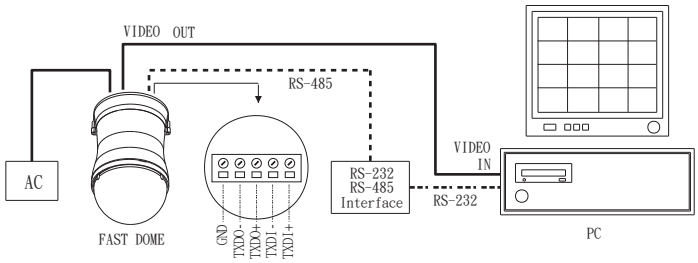
7th pin TXDI+ of 1st keyboard's connector box connects to 1st pin TXD+ of matrix's keyboard jack.

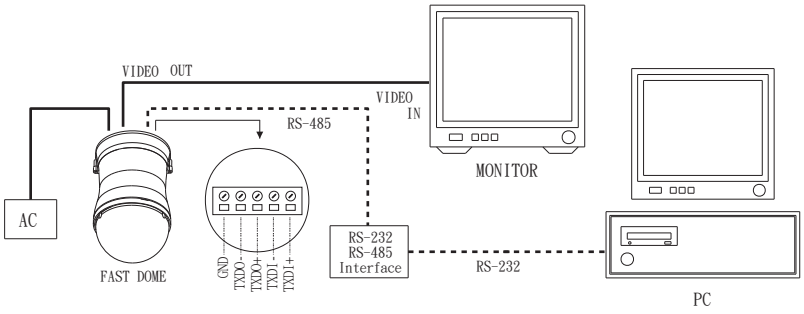
8th pin TXDI- of 1st keyboard's connector box connects to 2nd pin TXD- of matrix's keyboard jack.

Fast Dome with PC Control

PC telemetry remote controls fast dome with standard RS-485 data format (format: N, 8, 1 Baud Rate 9600 bps). The PC control port RS-232 is converted to RS-485 format by interface.
User may use their own software (protocol) or software provided by LILIN to control the dome.
In this system up to 64 fast domes can be linked.







RS-485 Connection Between Fast Dome and Conversion Interface

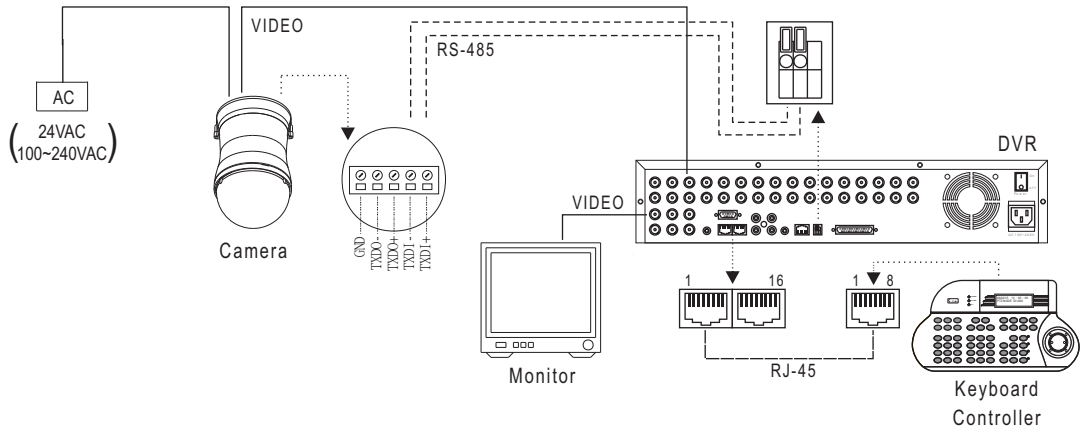
TXD+ of conversion interface RS-485 jack connects to TXDI+ of 1st fast dome and connect TXD- to TXDI-.

Linking 2nd FastDome

TXDO+ of 1st dome RS-485 jack connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome. 64 fast domes can linked through the connection as shown.

Fast Dome, DVR and Keyboard

The DVR System is an advanced digital recording product, with long recording time and easy searching features. Telemetry remote control is twisted pair for data transmission to the fast dome. Fast Dome can be controlled directly from the control panel of the DVR, or from keyboard.
Each DVR (Digital Video Recorder) can manage 16 video signals and via RS-485 ot daisy connection 16 sets of fast dome camera.



RS-485 Connection Between Fast Dome and DVR

TXD+ of DVR RS-485 jack connects to TXDI+ of 1st fast dome and TXD- of DVR to TXDI- of 1st fast dome.

Linking 2nd FastDome

TXDO+ of 1st dome RS-485 jack connects to TXDI+ of 2nd dome and TXDO- of 1st dome to TXDI- of 2nd dome.

RJ-45 Connection Between DVRs

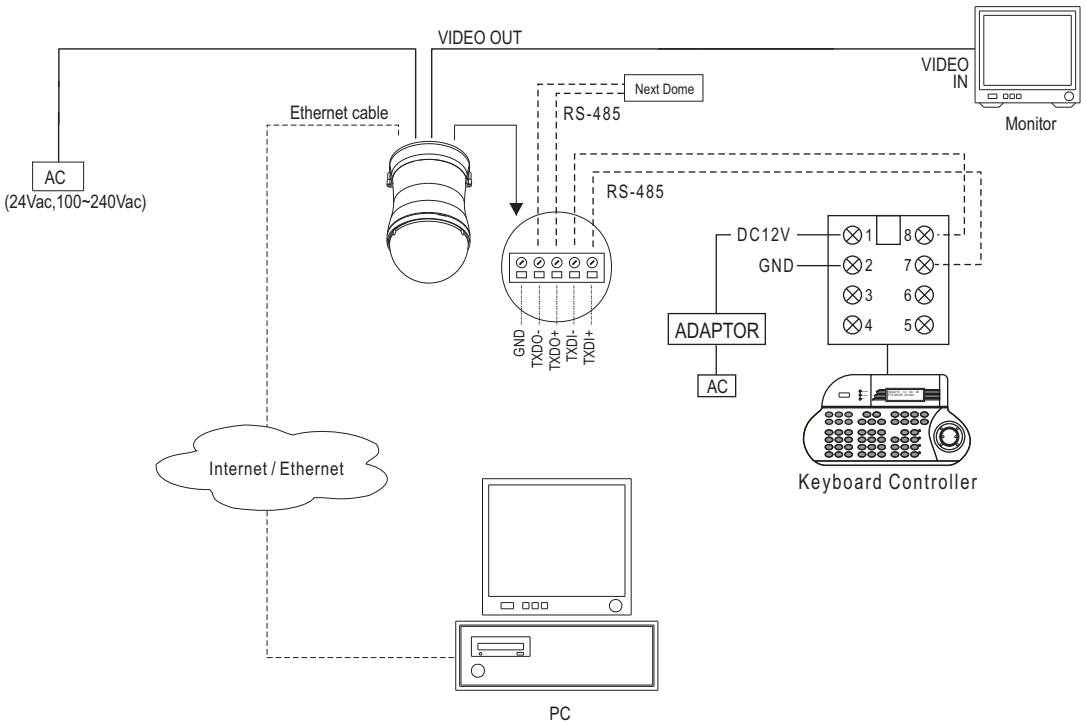
"Keyboard Out" of 1st DVR pass out RJ-45 jack connects to "Keyboard In" of 2nd DVR's RJ-45 jack.

RJ-45 Connection Between DVR and Keyboard

"Keyboard In" of 1st DVR's RJ-45 jack connects to RJ-45 jack of keyboard.

Fast Dome IP Camera with PC Control

The Fast Dome IP Camera can be connected via RJ-45 Ethernet cable that provides both Internet and/ or Intranet access. Multiple Fast Dome IP Cameras can be connected with in a Hub or multiple Hubs. Please consult your network administrator for network architecture and software settings.



RS-485 Connection

7th pin TXDI+ of RS-485 jack at back of the keyboard connects to TXDI+ of RS-485 jack on fast dome.

8th pin TXDI- of RS-485 jack at back of the keyboard connects to TXDI- of RS-485 jack on fast dome.

RJ-45 Connection

Ethernet cable to Fast Dome IP Camera and attach it to the network.

OPERATION

Initial Power Up Inspection

After the power is first applied to a dome it will perform a self-test procedure. This calibrates and checks the basic functions of the dome, control is not possible during this self-test period. Once the camera has stopped moving, it will then be ready to control. If preset positions and tours have been programmed into a dome and the power is turned off, the dome will enter the Auto Scan mode once the power is turned on again (after self-test period). The dome will remain in Auto Scan until an operator cancels it. (For setting Fast Dome IP Camera other features or functions, please refer to IP instruction manual.)

Manual Operation (Pan / Tilt Control)

To control the pan and tilt movement of the dome simply use the joystick on the keyboard; to pan the camera left push the joystick to the left, to tilt down pull the joystick down (towards you). To move the dome faster push the joystick further in the that direction, the joystick is proportional to the speed of the dome; a small movement will move the dome slower.

❶ UP
Push the joystick forward, the camera tilt up.

❷ DOWN
Push the joystick down (towards you), the camera tilt down.

❸ LEFT
Push the joystick left, the camera pan left.

❹ RIGHT
Push the joystick right, the camera pan right.

❺ DIAGONAL
Push the joystick diagonally, the camera moves to that direction (direction ⑤ on figure 1)

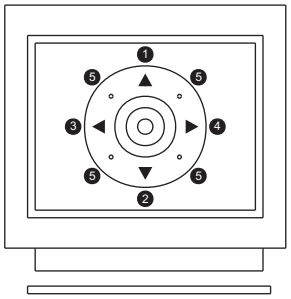


Figure 1
Relationship Between Joystick and Direction

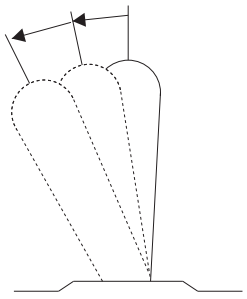


Figure 2
Relationship Between Joystick and Rotation Speed

Fast Dome Selection

To call out a dome controlling or setting

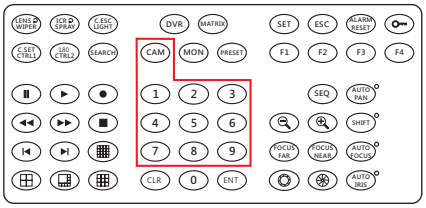
◆ **To select 1st Fast Dome**

Push key (1) followed by (CAM) key.

◆ **To select 64th Fast Dome**

Push key (6) then (4) followed by (CAM) key.

∗ When matrix system is used, select monitor before camera selection. Please refer to matrix system user manual.



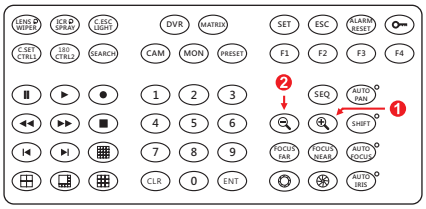
Zoom Lens Control

1. To Zoom In

Push (🔍+) key. The viewing angle becomes narrower and target will become enlarged on the screen. Zooming will stop when the key is released.

2. To Zoom Out

Push (🔍−) key. The viewing angle becomes wider and target will become smaller on the screen. Zooming will stop when the key is released.



Focus Control

The focus function on Fast Dome can be set as Auto Focus or Manual Focus.

1. Manual focus far

Push (FOCUS FAR) key.

The target will become farther. Focusing will stop when the key is released.

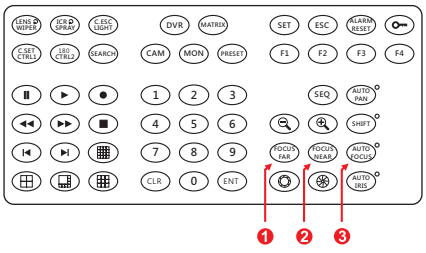
2. Manual focus near

Push (FOCUS NEAR) key.

The target will become nearer. Focusing will stop when the key is released.

3. Auto Focus

Push (AUTO FOCUS) key. The lens will automatically adjust itself for optimum focus.



Iris Control

The purpose of iris control is to adjust brightness on target. It can be set as Auto Iris or Manual Iris.

1. Iris Open

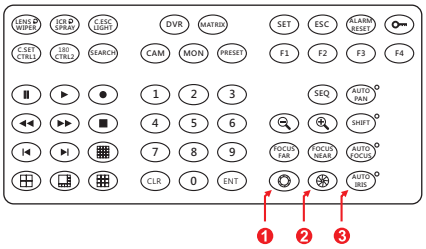
Push key, to open the iris and brighten the picture.
Iris will stop when the key is released.

2. Iris Close

Push key, to open the iris and reduce glare.
Iris will stop when the key is released.

3. Auto Iris

Push AUTO IRIS key, to select the Auto Iris mode.

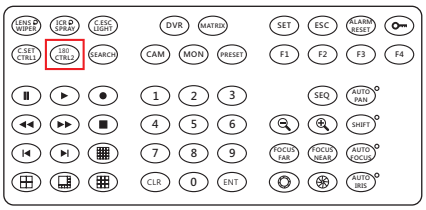


Horizontal 180° Instant Flip

Some times it is hard to use the joystick to control the camera tracking the target directly under the camera. The instant flip key can rotate the camera 180° instantly. This allows the camera continue to track the target passing directly under the camera.
Two ways to operate 180° instant flip:

❶ Push 180 CTRL 2 key on keyboard to flip the camera 180° horizontally.

❷ Push joystick down to bring the camera down to the end, release the joystick and quickly push joystick down twice to flip the camera 180° horizontally.



Preset Positions Setting

Each dome can have 128 individual preset positions. Each preset stores the exact position of the camera and automatic pan, tilt ,zoom, focus and iris setting. Once the data is set, the preset can be recalled for viewing, or the presets can be set for auto pan.

＊ Only the first 16 preset positions of fast dome can be set to auto pan mode and first 6 preset positions are corresponding with the 6 alarm inputs.

❶ Selecting Fast Dome

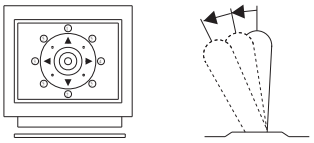
Push key 1 followed by CAM key, confirming that first camera is selected.
Ex. To select 1st fast dome : 1 CAM keys
To select 64th fast dome : 6 4 CAM keys

❷ Selecting Preset Position

Push key 1 followed by PRESET key, confirming that first preset position selected.
Ex. To select the 1st preset position : 1 PRESET keys
To select the 128th preset position : 1 2 8 PRESET keys

❸ Joystick Control

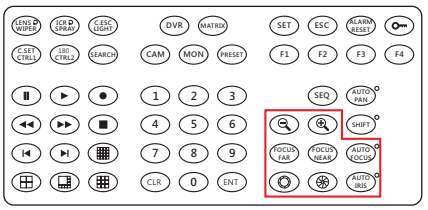
Move the Joystick to bring the camera to the desired view position.



❹ Adjusting Lens

ZOOM IN / OUT, FOCUS NEAR / FAR / AUTO and IRIS O / C / AUTO keys.

When set up preset point, using manual focus will provide both clarity and stability of image.

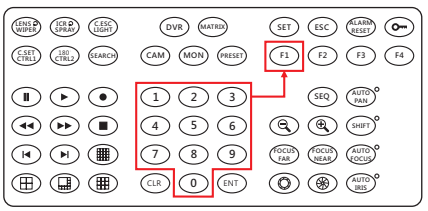


❺ Setting Preset Speed

The speed the dome travels to that preset position can be adjusted between 1° to 255° per second (the factory default is 255°/sec).

To set speed as 10°/sec: Push key (1) (0) followed by (F1) key, two beeps will be heard confirming that speed is set.

Note: Push (F1) key again to confirm speed entered.



❻ Setting Preset Dwell Time

The dwell time means the time user wants to view on certain preset position under Auto Pan.

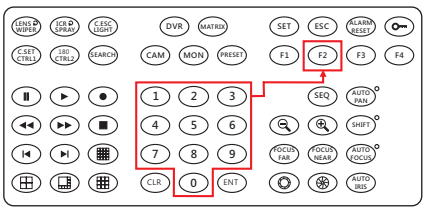
The Preset Dwell Time can be set between 0 ~ 255 seconds. (The factory default is 0 second)

＊ If the dwell is set to 0 second then that position will be omitted from the Auto Scan Tour.

To set dwell to 5 seconds: Push key (5) followed by (F2) key.

Ex. To set dwell to 5 second : (5) (F2) keys

To set dwell to 10 second : (1) (0) (F2) keys

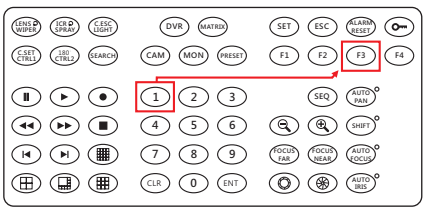


❼ Storing Preset Data

Once the above steps have been completed, the information must be stored or it will not be memorized by the system.

◆ Push key (1) followed by (F3) key, two beeps will be heard confirming that data is stored.

Note : For the first 16 presets on each dome, the above steps must be repeated. For presets 17 ~ 128 there is a default speed and dwell setting so steps 5 and 6 are not required.



Recalling Preset Positions

Once the required preset positions have been stored in a dome, they may be quickly recalled, returning the dome to exact position.

◆ To recall 1st Preset Position: Push key (1) followed by (PRESET) key.
The dome will move to that position in speed of 360°/sec.
Ex. To recall 1st preset position : (1) (PRESET) keys
To recall 128th preset position : (1) (2) (8) (PRESET) keys

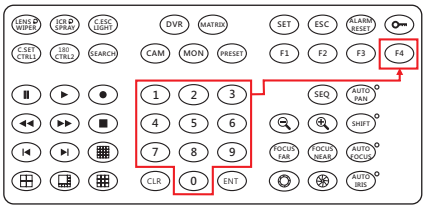
Setting Preset Group

The purpose of setting preset group allows the management of the 16 preset positions before Auto Scanning. The first 16 preset positions of each dome are separated into 4 groups. Preset group must be set for the auto pan reference.

Group 1 includes: 1st 2nd 3rd and 4th preset positions.
Group 2 includes: 5th 6th 7th and 8th preset positions.
Group 3 includes: 9th 10th 11th and 12th preset positions.
Group 4 includes: 13th 14th 15th and 16th preset positions.

◆ To set up group 1: Push key (1) followed by (F4) key.
Ex.

To set Group 1	(1) (F4)
To set Group 2,3	(1) (2) (F4)
To set Group 3,4	(3) (4) (F4)
To set Group 1,2,3	(1) (2) (3) (F4)
To set Group 2,3,4	(2) (3) (4) (F4)
To set Group 1,2,3,4	(1) (2) (3) (4) (F4)



Changing Preset Data

In order to change any preset position from the one stored, the dome must first be sent to that preset position.

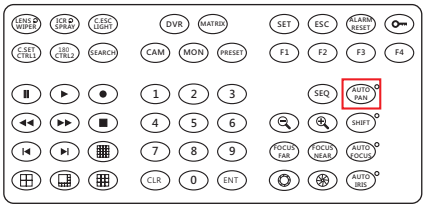
To change the 4th preset position of the Dome number 3, perform the following steps:

❶ Push (3) (CAM) to select Dome 3
❷ Push (4) (PRESET) to go to 4th preset position
❸ Move joystick to bring camera to the desired view position.
❹ Adjusting lens
❺ Setting preset speed
❻ Setting dwell time
❼ Store Data
(Please refer to preset position setting for step ③ ~ ⑦)

Activating Auto Pan

When the Auto Pan function is activated, the fast dome will auto touring the preset groups entered.

- **To activate Auto Pan:**
  Push (AUTO PAN) key, confirming the activation of autopan.
  (Auto Pan Led will be lit.)
- **To stop Auto Pan:**
  Push (AUTO PAN) key again, confirming the stop of autopan.
  (Auto Pan Led will be Off.)



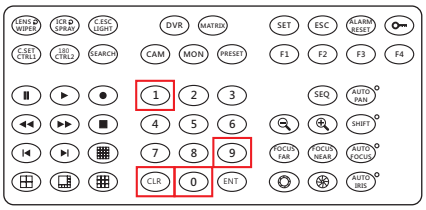
∗ If the AUTO PAN is activated, no other commands can be sent to that dome, but other dome can still be selected and operated manually.

- **To select (call out) another dome while it is under Auto Pan mode:**
  Simply push the numeric key followed by the (CAM) key.
  Push key (2) followed by (CAM) key, confirming the 2nd camera is selected.

Deleting Preset Data

Sometimes it is necessary to delete the stored data. All the data can be cleared from a dome by pressing key (9)(0)(1)(1), followed by the (CLR) key.

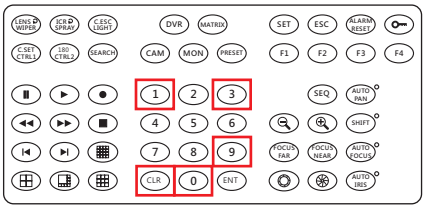
- All 128 preset data will be erased.
- Push (9)(0)(1)(1), followed by (CLR) key.



Reboot System

Sometimes it is necessary to reboot the system

- Push key (9)(0)(1)(3), followed by the (CLR) key. Two beeps will be heard confirming reboot the system.



Alarm Management

The 6 alarm inputs of each fast dome are corresponding with the first 6 preset positions. When an alarm signal is triggered, the dome will go to the relevant position at 360°/sec. Make sure the first 6 preset positions are set to desired alarm areas.
Alarm input can be set to NC (normally close) or NO (normally open) depends on alarm detector.

◆ **Relationship Between Alarm Inputs and First 6 Presets**

- Alarm Input 1 will send the dome to Preset Position 1
- Alarm Input 2 will send the dome to Preset Position 2
- Alarm Input 3 will send the dome to Preset Position 3
- Alarm Input 4 will send the dome to Preset Position 4
- Alarm Input 5 will send the dome to Preset Position 5
- Alarm Input 6 will send the dome to Preset Position 6

Remark: When using Fast Dome IP Camera, only 3 alarm inputs.

◆ **Alarm Output**

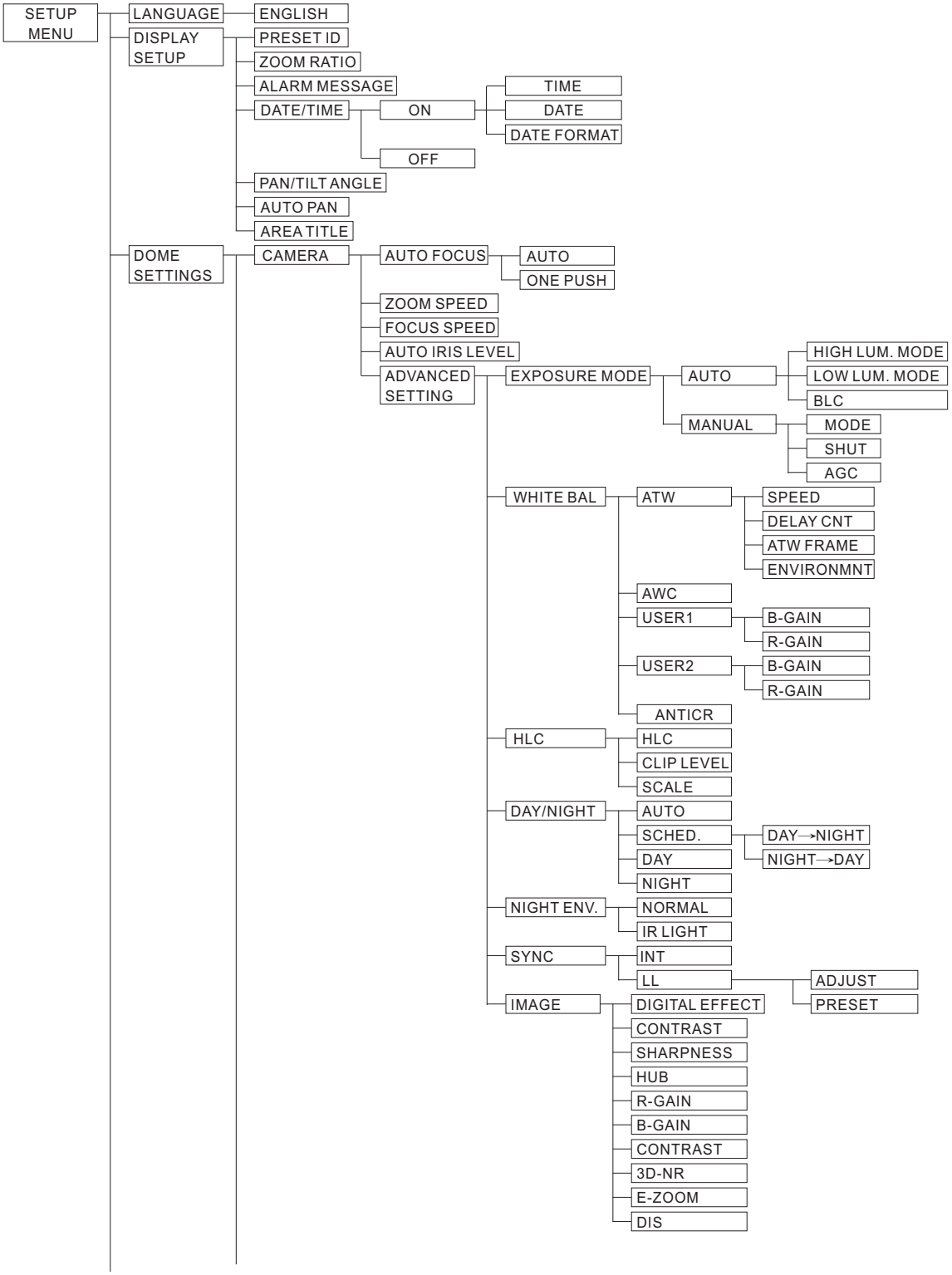
Each fast dome has 1 alarm output. A dip switch can program the alarm output for NO (normally open) or NC (normally close), that can activate the linked devices.

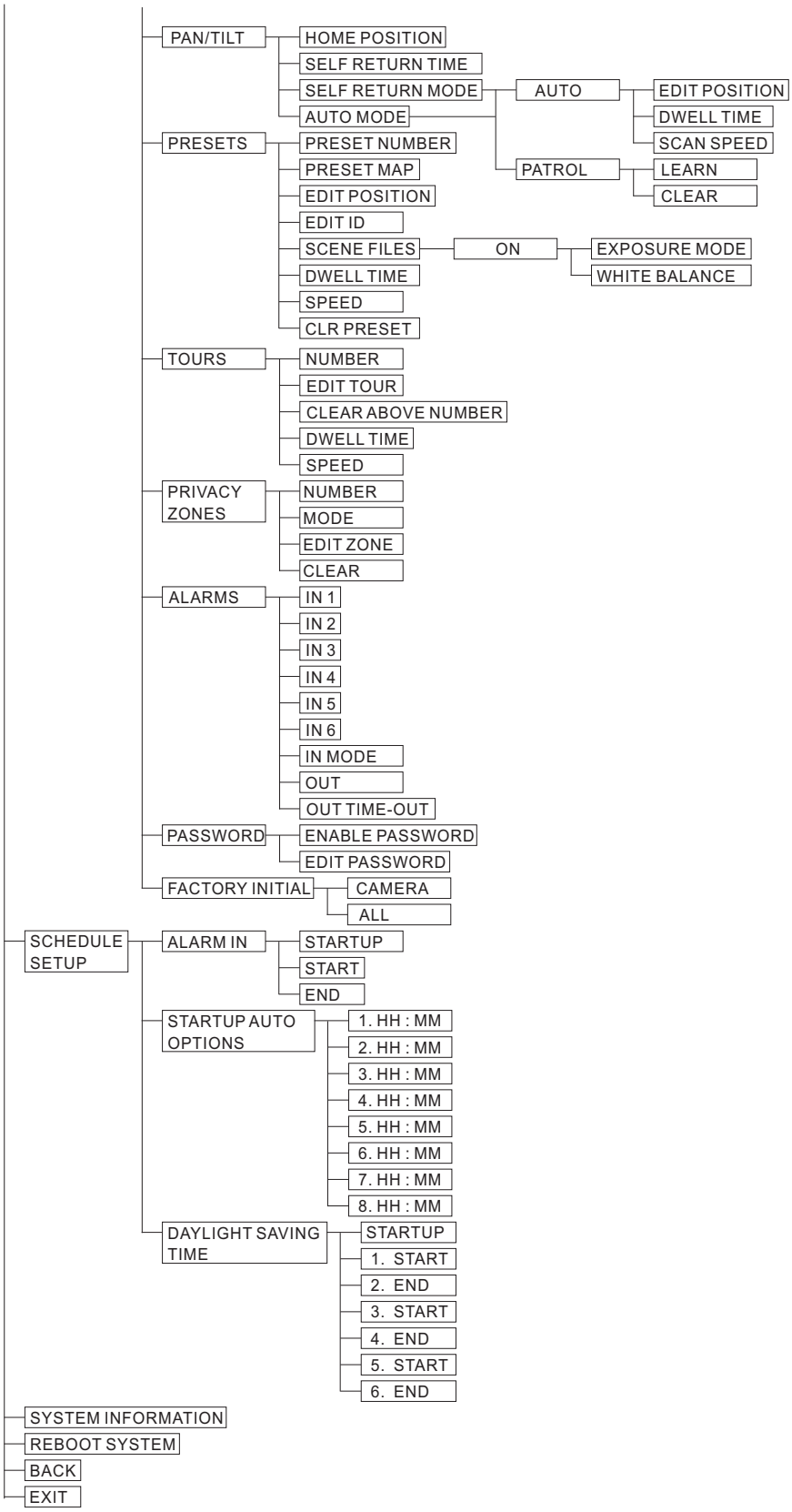
◆ **Alarm Release Setting**

When alarm triggers, disable alarm as follows:

❶ Push the joystick up, down, left, right or adjust the lens to disable the alarm.
❷ Push (ALARM RESET) of the keyboard.
❸ Recall preset position.
❹ Push (AUTO PAN) of the keyboard to start Auto Pan mode.

SETUP MENU TREE



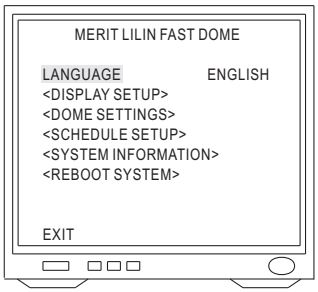

PAN/TILT
HOME POSITION
SELF RETURN TIME
SELF RETURN MODE
AUTO
EDIT POSITION
DWELL TIME
SCAN SPEED
AUTO MODE
PRESETS
PRESET NUMBER
PRESET MAP
PATROL
LEARN
CLEAR
EDIT POSITION
EDIT ID
SCENE FILES
ON
EXPOSURE MODE
WHITE BALANCE
DWELL TIME
SPEED
CLR PRESET
TOURS
NUMBER
EDIT TOUR
CLEAR ABOVE NUMBER
DWELL TIME
SPEED
PRIVACY ZONES
NUMBER
MODE
EDIT ZONE
CLEAR
ALARMS
IN 1
IN 2
IN 3
IN 4
IN 5
IN 6
IN MODE
OUT
OUT TIME-OUT
PASSWORD
ENABLE PASSWORD
EDIT PASSWORD
FACTORY INITIAL
CAMERA
ALL
SCHEDULE SETUP
ALARM IN
STARTUP
START
END
STARTUP AUTO OPTIONS
1. HH : MM
2. HH : MM
3. HH : MM
4. HH : MM
5. HH : MM
6. HH : MM
7. HH : MM
8. HH : MM
DAYLIGHT SAVING TIME
STARTUP
1. START
2. END
3. START
4. END
5. START
6. END
SYSTEM INFORMATION
REBOOT SYSTEM
BACK
EXIT

Fast Dome Camera Function Setup

SP926X/936X & IPS926X/936X & ST926X/936X (build-in 26/36X optical zoom lens) series provide on-screen display (OSD) setup menu, all functions can be selected and set via OSD Setup Menu.

Setup Menu Display

- Press (C.SET CTRL1) key on the keyboard to recall Setup Menu.
- Press (ESC) key to exit setup menu or push joystick down to select <EXIT>, and then press (C.SET CTRL1) key to exit setup menu.



NOTE

Buttons Description		Enter Setup Menu	Exit Setup Menu
MLP1	PIH-931D/932T	C. SET CTRL 1	C. ESC LIGHT
	PIH-800III	CAM SETUP CTRL 1	CAM ESC LIGHT
MLP2	PIH-931D/932T	SET	ESC
	PIH-800III	SETUP	ESC

Language Selection

- Press (C.SET CTRL1) key into Setup Menu.
- Push joystick down to select <LANGUAGE>, and then push joystick left or right to select language.
- Press (ESC) key to exit setup menu or push joystick down to select <EXIT>, and then press (C.SET CTRL1) key to exit setup menu.

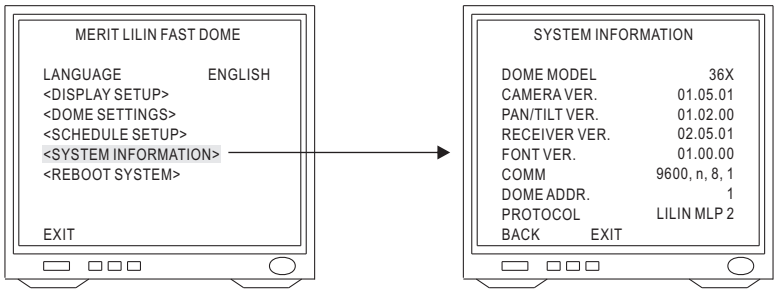
Reboot System

Restart the fast dome system to perform initial setting and operation.

- Press (C.SET CTRL1) key into Setup Menu.
- Push joystick down to select <REBOOT SYSTEM>, and then press (C.SET CTRL1) key to restart the fast dome system.
- Press (ESC) key to exit setup menu or push joystick down to select <EXIT>, and then press (C.SET CTRL1) key to exit setup menu.

Display System Information

- Press C.SET CTRL1 key into Setup Menu.
- Push joystick down to select <SYSTEM INFORMATION>, and then press C.SET CTRL1 key to display current system information.
- Push joystick down to select <BACK>, and then press C.SET CTRL1 key to go back or push joystick down to select <EXIT>, and then press C.SET CTRL1 key to exit setup menu.



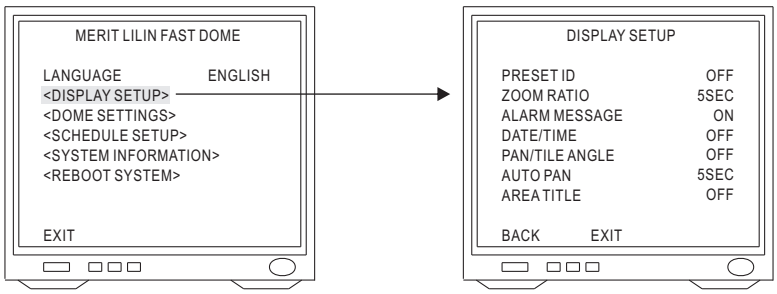
Display system information:

1. Fast dome model number
2. Camera, Pan/Tilt, Receiver version
3. Font of OSD version
4. Protocol rate and format
5. Fast dome ID number
6. Protocol version, LILIN717 (LILIN MLP1), LILIN MLP2

Display Character Setup Menu

1. Display Character Setup Menu

- Press C.SET CTRL1 key into Setup Menu.
- Push joystick down to select <DISPLAY SETUP>, and then press C.SET CTRL1 key to display character setup menu.
- Push joystick down to select <BACK>, and then press C.SET CTRL1 key to go back or push joystick down to select <EXIT>, and then press C.SET CTRL1 key to exit setup menu.



2. Preset ID setting

- Push joystick down to select <PRESET ID>, and then push joystick left or right to make selection:
  OFF : No Preset ID on the monitor screen.
  ON : Preset ID on the monitor screen.
  5~30 sec: Display elapsed time. Preset ID will have been displayed on the monitor screen until elapsed time stops, when Preset ID is recalled.(5, 10, 15, 20, 25, 30sec. can be selected.)

3. Zoom Ratio Setting

● Push joystick down to select <ZOOM RATIO>, and then push joystick left or right to make selection:

OFF : No Zoom Ratio on the monitor screen.

ON : Zoom Ratio on the monitor screen.

5~30 sec : Display elapsed time. Zoom Ratio will have been displayed on the monitor screen until elapsed time stops, when Zoom Ratio is operated.
(5, 10, 15, 20, 25, 30sec. can be selected.)

4. Alarm Message Setting

● Push joystick down to select <ALARM MESSAGE>, and then push joystick left or right to make selection:

OFF : No Alarm Message on the monitor screen.

ON : Alarm Message on the monitor screen.

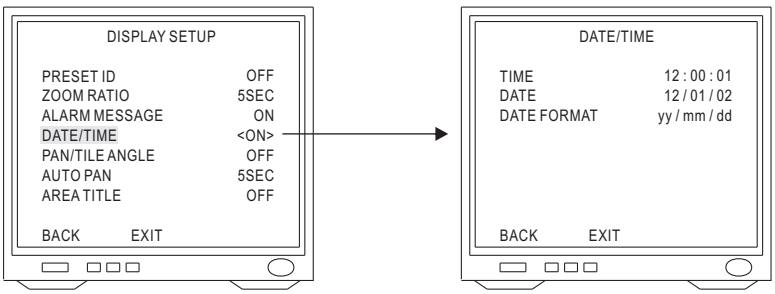
5~30 sec : Display elapsed time. Alarm Message will have been displayed on the monitor screen until elapsed time stops, when Alarm Input is triggered.
(5, 10, 15, 20, 25, 30sec. can be selected.)

5. Date and Time Setting

● Push joystick down to select <DATE/TIME>, and then push joystick left or right to make selection:

OFF : No Date/Time on the monitor screen.

ON : Display Date/Time on the monitor screen. When selection is open, and then press C.SET CTRL1 key, date/time will be set.



(1) Time Adjustment

- Push joystick down to select <TIME>, and then press C.SET CTRL1 key to setup time.
- Push joystick left or right to adjust time, and then press C.SET CTRL1 key to next item of time.

12 : 00 : 01 → C.SET CTRL1 → 12 : 00 : 01 → C.SET CTRL1 → 12 : 00 : 01 → C.SET CTRL1 → 12 : 00 : 01

(2) Date Adjustment

- Push joystick down to select <DATE>, and then press C.SET CTRL1 key to setup date.
- Push joystick left or right to adjust date, and then press C.SET CTRL1 key to next item of date.

12 : 01 : 02 → C.SET CTRL1 → 12 : 01 : 02 → C.SET CTRL1 → 12 : 01 : 02 → C.SET CTRL1 → 12 : 01 : 02

(3) Date Format Setting

- Push joystick down to select <DATE FORMAT>, and then push joystick left or right to adjust format of date.

  yy / mm / dd → mm / dd / yy → dd / mm / yy

6. Pan/Tilt Angle Setting

- Push joystick down to select <PAN/TILT ANGLE>, and then push joystick left or right to select pan/tilt setup:

  OFF : No Pan/Tilt Angle on the monitor screen.

  ON : Pan/Tilt Angle on the monitor screen.

7. Auto Pan Setting

- Push joystick down to select <AUTO PAN>, and then push joystick left or right to select auto pan setup:

  OFF : No Auto Pan mode on the monitor screen.

  ON : Auto Pan mode on the monitor screen.

  5~30 sec : Display elapsed time. Auto pan will have been displayed on the monitor screen until elapsed time stops, when auto pan is operated.
  (5, 10, 15, 20, 25, 30sec. can be selected.)

8. Area Title Setting

The area title function lets you display a direction indicator that appears in the picture to indicate the direction of the location being shown on the screen. Text can also be displayed in the place of the direction indicators, if desired. The direction indicators are N(north), NE(northeast), E(east), SE(south east), S(south), SW(southwest), W(west) and NW(northwest).

- Push joystick down to select <AREA TITLE>, and then push joystick left or right to select area title setup.

  OFF : Turn off display of area title direction indicators and text.

  NESW : Displays direction indicators. Select(NESW) and pressing the C.SET CTRL1 button will display the position(NESW) setting menu. Which you can use for configuring detailed settings.

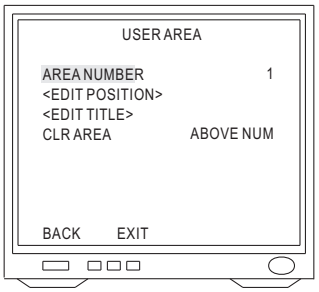
  USER : Display user input text. Selecting(USER) and pressing the C.SET CTRL1 button will display the area title(USER) selection menu, which you can use for configuring detailed settings.

(1) When NESW is selected

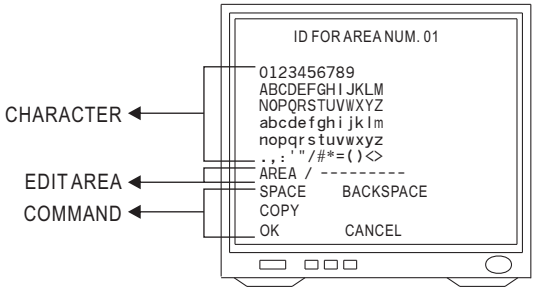
After selecting NESW, you can use the joystick to configure detailed setting. Once you set the northerly(N) direction for camera, all other directions are displayed automatically.

(2) When USER is selected

After selecting USER, you can use the area title USER setting menu to configure detailed settings. You can use following procedure to configure direction settings, and to input text associated with a particular direction indicator.



1. Push joystick down to select <AREA NUMBER>, and then push joystick left or right to select area number. (1~6)
2. Push joystick down to select <EDIT POSITION>, and then press C.SET CTRL1 key into Area Position setting.
   Push joystick left, right, up or down to start position, and , to adjust zoom, then press C.SET CTRL1 key to confirm.
3. Push joystick down to select <EDIT TITLE>, and then press C.SET CTRL1 key into title setup.



(1) New Area Title Editing

- Push joystick down to select character, and press C.SET CTRL1 key to confirm. The character selected will be showed in edit area. If you need space, push joystick down to select <SPACE> and press C.SET CTRL1 key to confirm.
- Press or to switch to next character list.
- Repeat all steps to complete Area Title.

(2) Copy Area Title to Another Area

- Push joystick down to select [EDIT AREA], and push joystick left or right to select first copy of characters.
- Push joystick down to <COPY>, and press C.SET CTRL1 key to confirm. At this time first character of Area ID will be copy to first character position of another Area Title, and press C.SET CTRL1 key to do next copy.
- Push joystick down to <OK>, and press C.SET CTRL1 key for exit. Select another area on the area menu, and get into area title setting. Then push joystick down to [EDIT AREA] and press C.SET CTRL1 key for copy. At this time edit area will show area title that was copied.

(3) Modify Area title

- Push joystick down to select [EDIT AREA] on the area title setting, and push joystick right to select modifiable characters.
- Push joystick down to select new characters, and press C.SET CTRL1 key to chose.

(4) Cancel Area Title

- Push joystick down to <CANCEL>, and then press C.SET CTRL1 key to cancel area title.

(5) Return Preset Menu

- Push joystick down to <OK>, and then press C.SET CTRL1 key to back to user area menu.

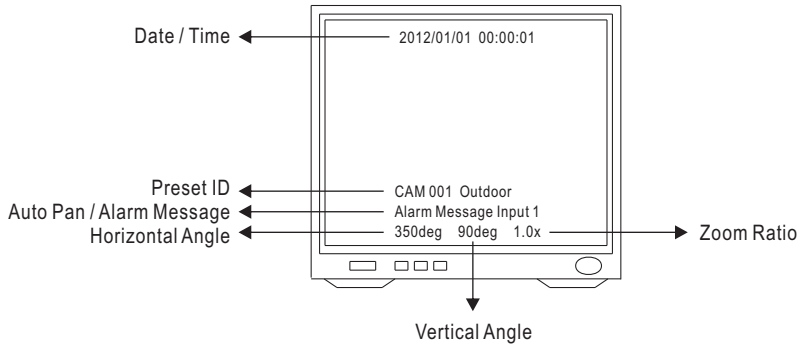
4. Clear Area Title

Push joystick down to select <CLR AREA>, and then push joystick left or right to select <ABOVE NUM> or <ALL>. Then press C.SET CTRL1 key to confirm.

ABOVE NUM : Only clear character of allotted area.

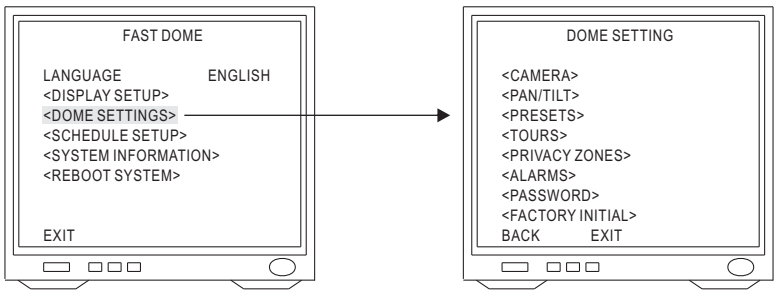
ALL : Clear character off all area.

8. Character Location



Display Dome Function Setup Menu

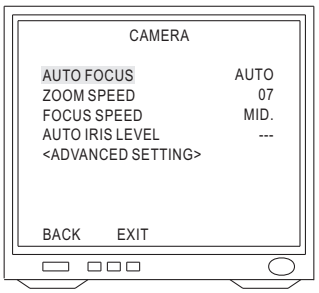
- Press C.SET CTRL1 key into Setup Menu.
- Push joystick down to select <DOME SETTINGS>, and then press C.SET CTRL1 key into dome setting menu.



Camera Setting Menu Display

1. Display the Camera Setting Menu

- After getting in dome setting menu, push joystick down to select <CAMERA>, and then press (C.SET CTRL) key into camera setting menu.



(1) Auto Focus Setting

- Push joystick down to select <AUTO FOCUS>, and then push joystick left or right to select auto focus mode:

  AUTO → ONE PUSH

  Note: When manual focus switched to auto focus or lens zooming stop, then the camera will perform One Push focus with the target image.

(2) Zoom Speed Setting

- Push joystick down to select <ZOOM SPEED>, and then push joystick left or right to adjust zoom speed setting.
  Zoom speed ranges are 00 ~ 07.

(3) Focus Speed Setting

- Push joystick down to select <FOCUS SPEED>, and then push joystick left or right to adjust focus speed setting.

  SLOW → MID. → FAST

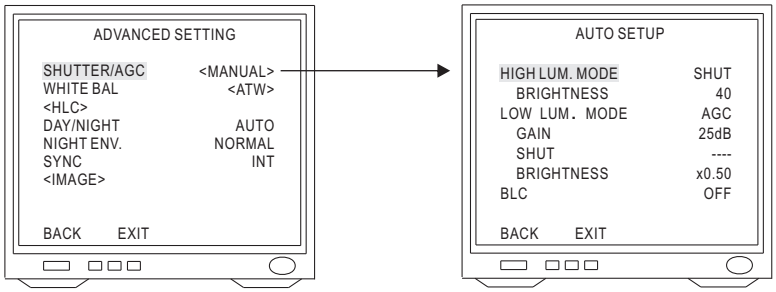
(4) Auto Iris Setting

- Push joystick down to select <AUTO IRIS LEVEL>, and then push joystick left or right to adjust auto iris level.
  Auto iris levels are 00 ~ 15.

  Note: The <SHUTTER/AGC> option needs to be set to MANUAL.

2. Advanced Setting

- After getting in camera setting menu, push joystick down to select <ADVANCED SETTING>, and then press (C.SET CTRL) key into advanced setting.



(1) SHUTTER/AGC Setting

- Push joystick down to select <SHUTTER/AGC>, and then push joystick left or right to setup auto mode or manual mode.

1. AUTO EXPOSURE SETUP:

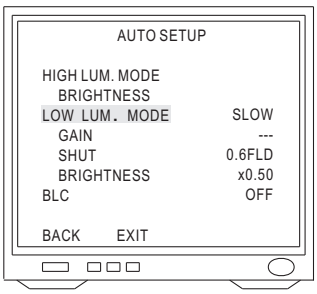
1-1. High Luminance Mode:

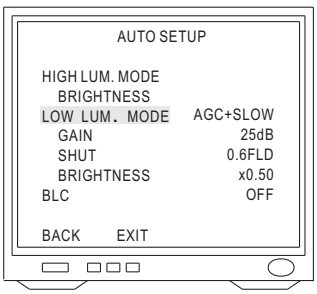
- Push joystick down to select <HIGH LUM. MODE>, and then push joystick left or right to select SHUT or WDR+SHUT mode.
- BRIGHTNESS:
  Push joystick down to select <BRIGHTNESS>, and then push joystick left or right to adjust light level.
  Brightness levels are 0 ~ 127.

1-2. Low Luminance Mode:

- Push joystick down to select <LOW LUM. MODE>, and then push joystick left or right to make selection.

  ↱ AGC → SLOW → AGC+SLOW → OFF ↰





1-2-1. AGC: Auto Gain Control.

- GAIN: Push joystick down to select <GAIN>, and then push joystick left or right to make selection. (Gain Control ranges are 20dB ~ 36dB.)
- SHUT: No adjustment when in AGC mode.

1-2-2. SLOW: Slow Shutter Mode.

- GAIN: No adjustment when in SLOW mode.
- SHUT: Push joystick down to select <SHUT>, and then push joystick left or right to make selection. (Shut control ranges are 05 ~ 15FLD.)

1-2-3. AGC-SLOW: AGC+SLOW Mode.

GAIN: Push joystick down to select <GAIN>, and then push joystick left or right to make selection. (Gain Control ranges are 20dB ~ 36dB.)

SHUT: Push joystick down to select <SHUT>, and then push joystick left or right to make selection. (Shut control ranges are 05 ~ 15 FLD.)

1-2-4. OFF

● BRIGHTNESS:

Push joystick down to select <BRIGHTNESS>, and then push joystick left or right to adjust brightness level of darker part.

▶ x0.25 → x0.50 → x0.75 → x1.00

1-3. BLC Setting:

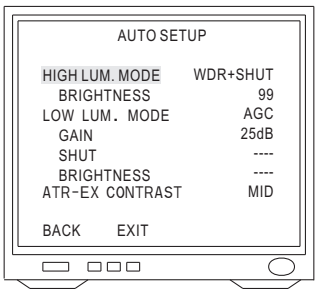
When "AUTO" is selected, the brightness gain is automatically controlled for backlight compensation in response to the light intensity detection window.

● Push joystick down to select <BLC>, and then push joystick left or right to select "AUTO" or "OFF".

Note: The backlight compensation function setting is available only when high luminance mode is set to electronic shutter(HIGH LUM. MODE=SHUT).

1-4. ATR-EX Contrast: Adaptive Tone Reproduction - EX panded

The ATR-EX function provides gradation compensation to improve the contrast. The Loss of dark detail and overexposure improve.



● Push joystick down to select <ATR-EX CONTRAST>, and then push joystick left or right to make selection.

▶ LOW → MIDLOW → MID → MIDHIGH → HIGH

Note: The ATR-EX function setting is available only when high luminance mode is set to wide dynamic range(HIGH LUM. MODE=WDR+SHUT).

2. MANUAL EXPOSURE SETUP:

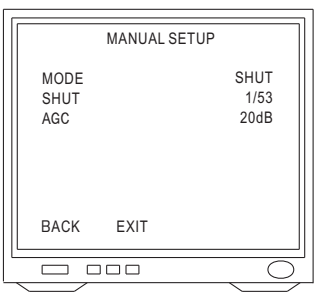
Push joystick down to select <MODE>, and then push joystick left or right to select SHUT mode or WDR+SHUT mode.

2-1. SHUT Mode:

This mode can set a fixed shutter speed with iris to exhibit image effect.

● Push joystick down to select <SHUT>, and then push joystick left or right to make selection.

▶ 1/53(63) → 1/120(100) → 1/250 → 1/500
1/10000 ← 1/4000 ← 1/2000 ← 1/1000 ◀

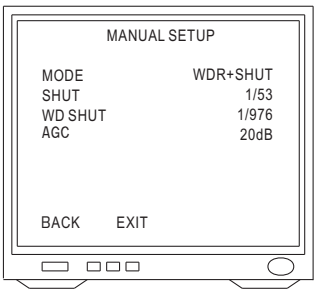


2-2. WDR+SHUT Mode:

This mode can set a fixed WDR and shutter speed with iris to exhibit image effect.

- Push joystick down to select <SHUT>, and then push joystick left or right to make selection.

  1/53(63) → 1/120(100) → 1/250 → 1/500
  1/10000 ← 1/4000 ← 1/2000 ← 1/1000



- Push joystick down to select <WD SHUT>, and then push joystick left or right to make selection.

  1/976(1351) → 1/2000 → 1/4000 → 1/6000
  1/25000 ← 1/20000 ← 1/15000 ← 1/10000

2-3. AGC

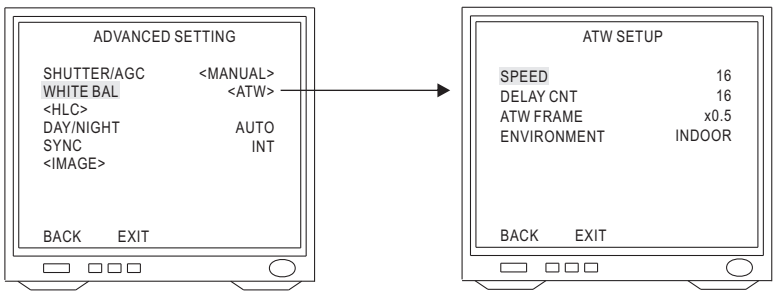
- Push joystick down to select <AGC>, and then push joystick left or right to make selection.

  10dB → 20dB → 25dB → 30dB

(2) WHITE BALANCE Setting

- Push joystick down to select <WHITE BAL>, and then push joystick left or right to select white balance mode.

  ATW → AWC → USER1 → USER2 → ANTICR



1. ATW (Auto Trace White Balance) SETUP:

Auto Tracing White Balance, suitable for 1800 ~ 10500K color temperature environment.

1-1. SPEED:

- Push joystick down to select <SPEED>, and then push joystick left or right to make selection.

  ATW speed ranges are 0 ~ 255 (fast ~ slow).

1-2. DELAY CNT:

- Push joystick down to select <DELAY CNT>, and then push joystick left or right to make selection.

  ATW delay time ranges are 0 ~ 255 (short ~ long).

1-3. ATW FRAME:

- Push joystick down to select <ATW FRAME>, and then push joystick left or right to make selection.

  ↻ X0.5 → X1.0 → X1.5 → X2.0

1-4. ENVIRONMENT:

- Push joystick down to select <ENVIRONMENT>, and then push joystick left or right to select INDOOR mode or OUTDOOR mode.
  ATW delay time ranges are 0 ~ 255 (short ~ long).

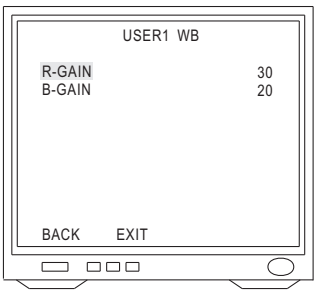
Note: ① In indoor mode the color temperature is fixed at approximately 3200K.
② In outdoor mode the color temperature is fixed at approximately 6300K.

2. AWC (Auto White balance Control):
Auto White Balance Control mode, suitable for any color temperature environment.

Note: This function adjusts the white balance regardless of the subject conditions. Pull-in control is exercised at all times independently of the pull-in frame which was set by the pre-white balance adjustment.

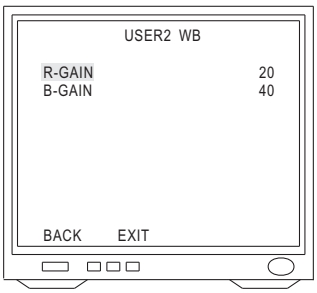
3. USER1:
Manual White Balance mode 1, suitable for 1800 ~ 10500K color temperature environment.

- Select <USER1>, and press C.SET CTRL1 key into USER1 WB adjustment image.
  Push joystick down to select <R-GAIN>, and then push joystick left or right to adjust white balance to lower color temperature, and push joystick down to select <B-GAIN>, and then push joystick left or right to adjust white balance to higher color temperature.
- Confirm color temperature, and then press C.SET CTRL1 key to record data in the memory.



4. USER2:
Manual White Balance mode 2, suitable for 1800 ~ 10500K color temperature environment.

- Select <USER2>, and press C.SET CTRL1 key into USER2 WB adjustment image.
  Push joystick down to select <R-GAIN>, and then push joystick left or right to adjust white balance to lower color temperature, and push joystick down to select <B-GAIN>, and then push joystick left or right to adjust white balance to higher color temperature.
- Confirm color temperature, and then press C.SET CTRL1 key to record data in the memory.



5. ANTICR:

This mode suppresses the color rolling which arises when there are slight deviations between blinking frequency of non-inverter fluorescent lights and the drive frequency of the image sensor devices.

Note: Color rolling suppression (HIGH LUM. MODE = SHUT).

Pull-in control is exercised at all times independently of the pull-in frame which was set by the pre-white balance adjustment.

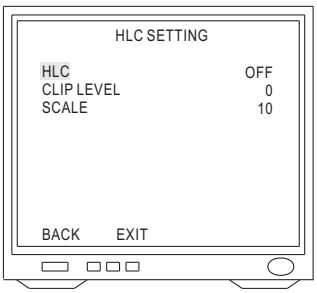
(3) HLC Setting (High Light Compensation):

- Push joystick down to select <HLC>, and then press C.SET CTRL1 key into HLC setting menu.

1. HLC (High Light Compensation):

- Push joystick down to select <HLC>, and then push joystick left or right to make selection.

  ↱ AUTO → OFF ┐



2. CLIP LEVEL:

- Push joystick down to select <CLIP LEVEL>, and then push joystick left or right to make selection.

  Clip level ranges are 0 ~ 255 (Black ~ White).

3. SCALE:

- Push joystick down to select <SCALE>, and then push joystick left or right to make selection.

  Scale control ranges are 0 ~ 14 (Low ~ High).

(4) Day/Night Setting

- Push joystick down to select <DAY/NIGHT>, and then push joystick left or right to select mode.

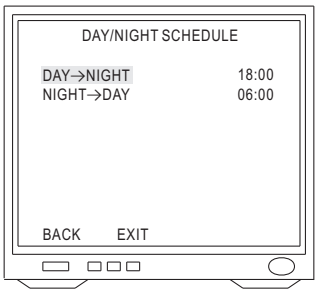
  ↱ AUTO → SCHED. → DAY → NIGHT ┐

☞ AUTO: When light level is over 10 lux, camera switches DAY automatically to produce color image. When light drops below 5 lux, camera switches NIGHT automatically to produce monochrome image. Under monochrome mode, sensitivity is increased to 0.01 lux and can be used with IR illuminators.

☞ SCHED.: DAY/NIGHT switches automatically between Day mode and Night mode by schedule of time setting.

- When selection is <SCHED.>, press C.SET CTRL1 key into DAY/NIGHT Setting menu.
- Push joystick down to select <DAY→NIGHT>, and then press C.SET CTRL1 key into time setting. Push joystick left or right to select time of DAY→NIGHT. Then press C.SET CTRL1 key again to next item.

  18 : 00 → C.SET CTRL1 → 18 : 00 → C.SET CTRL1 → 18 : 00



- Push joystick down to select <NIGHT→DAY>, and then press (C.SET CTRL1) key into time setting. Push joystick left or right to select time of NIGHT→DAY. Then press (C.SET CTRL1) key again to next item.
  06 : 00 → (C.SET CTRL1) → 06 : 00 → (C.SET CTRL1) → 06 : 00

☞ DAY: Set to DAY mode and always produce constant color image.
☞ NIGHT: Set to NIGHT mode and always produce constant monochrome image.

(5) Night Environment Setting

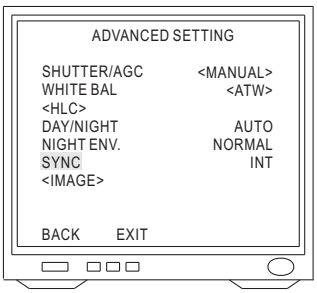
- Push joystick down to select <NIGHT ENV.>, and then move joystick left or right to select <NORMAL> mode or <IR LIGHT> mode.

Note：NORMAL: suitable in mostly night scene mode.
IR LIGHT: suitable in infrared (IR) illuminated night scene mode, can increase the images under infrared lighting.

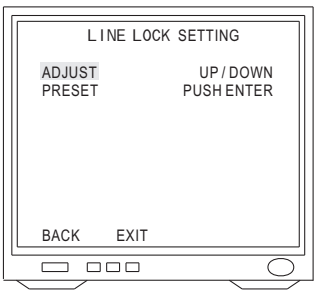
(6) Synchronization Mode Setting

- Push joystick down to select <SYNC>, and then move joystick left or right to select <INT> mode or <LL> mode.

☞ INT : Use synchronization signal of internal camera.
☞ LL : Synchronize synchronization signal of camera and AC signal of external power.

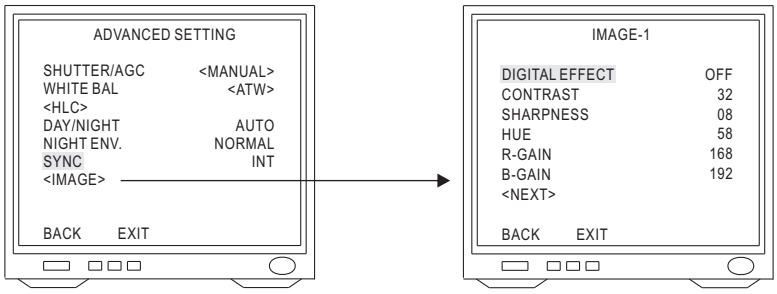


- Select <LL>, and press (C.SET CTRL1) key into Line Lock setup menu.
  1. ADJUST:
     Push joystick down to select <ADJUST>, and then move joystick left or right to adjust LL phase.
  2. PRESET:
     Push joystick down to select <PRESET>, and then press (C.SET CTRL1) key to preset LL phase.



(7) Image Setting

- After getting in advanced setting menu, push joystick down to select <IMAGE>, and then press (C.SET CTRL1) key into image setting menu.



1. DIGITAL EFFECT:

   The flip function enables the analogue output's image to flip from top/bottom, left/ right or to spin 180°.

   ● Push joystick down to select <DIGITAL EFFECT>, and then push joystick left or right to select mode.

   ┌→ OFF → V-FLIP → H-FLIP → HV-FLIP ┐

2. CONTRAST:

   ● Push joystick down to select <CONTRAST>, and then push joystick left or right to adjust contrast setting.

   Contrast control ranges are 0 ~ 255.

3. SHARPNESS:

   ● Push joystick down to select <SHARPNESS>, and then push joystick left or right to adjust sharpness setting.

   Sharpness control ranges are 0 ~ 15.

4. HUE:

   ● Push joystick down to select <HUE>, and then push joystick left or right to adjust hue setting.

   HUE control ranges are 0 ~ 100.

5. R-GAIN:

   Able to control Red Gain.

   ● Push joystick down to select <R-GAIN>, and then push joystick left or right to adjust R-gain setting.

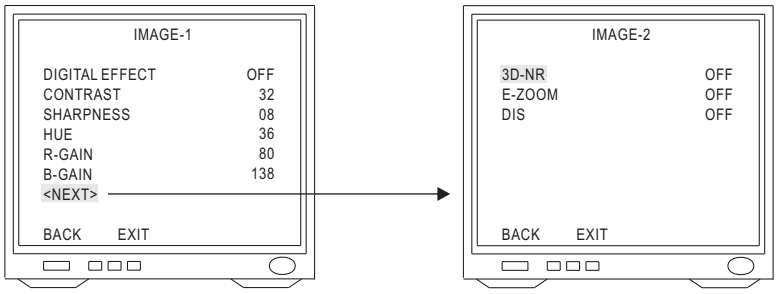
   R-gain control ranges are 0 ~ 255.

6. B-GAIN:

   Able to control Blue Gain.

   ● Push joystick down to select <B-GAIN>, and then push joystick left or right to adjust B-gain setting.

   B-gain control ranges are 0 ~ 255.



7. 3D-NR (3D Noise Reduction):
   - Push joystick down to select <3D-NR>, and then push joystick left or right to select "ON" or "OFF" mode.

8. E-ZOOM:
   - Push joystick down to select <E-ZOOM>, and then push joystick left or right to select "ON" or "OFF" mode.

   ON: 256x electronic zoom is enabled with the zoom switch on the controller.

   OFF: The electronic zoom function is disabled.

   Note: When the electronic digital zoom function is set to On(E-ZOOM = ON), e-zoom will start once lens reach maximum optical zoom in.

9. DIS (Digital Image Stabilizer):
   - Push joystick down to select <DIS>, and then push joystick left or right to select "ON" or "OFF" mode.

   Note: If a camera shake or vibrate and the DIS is set to ON, it will continue to show stable image or vibration is reduced.

Pan/Tilt Setting Menu

1. Display the Pan/Tilt Setting Menu

- After getting in dome setting menu, push joystick down to select <PAN/TILT>, and then press (C.SET CTRL1) key into pan/tilt setting menu.

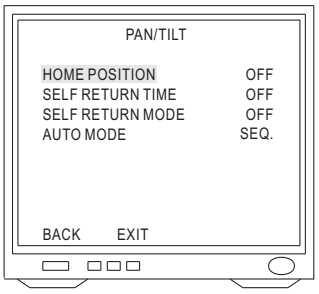
2. Home Position Setting

- Push joystick down to select <HOME POSITION>, and then push joystick left or right to select home position.

  OFF: NO action.

  1 ~ 128: Home positions are preset position from fast dome.

  Note: When keyboard control isn't used, "Return Mode" is set for "HOME" and "Return Time" is over, "Return Mode" function will be started.



3. Self Return Time Setting

● Push joystick down to select <SELF RETURN TIME>, and then push joystick left or right to select return time:

OFF → 3sec → 4sec → ..... → 9sec → 10sec → 20sec → 30sec → 40sec → 50sec
60min ← 30min ← 20min ← 10min ← 5min ← 3min ← 2min ← 1min

Note: When keyboard control isn't used, "Return Time" is also over, "Return Mode" function will be started.

4. Self Return Mode Setting

● Push joystick down to select <SELF RETURN MODE>, and then push joystick left or right to select return mode.

OFF → HOME → SCAN → SEQ. → TOUR1 → TOUR2 → PATROL → TRACK

OFF: NO action.
HOME: Perform return home position mode.
SCAN: Perform auto scan mode.
SEQ.: Perform preset group mode.
TOUR1: Perform tour1 list mode.
TOUR2: Perform tour2 list mode.
PATROL: Perform memory patrol mode.
TRACK: Perform human tracking mode.
(The tracking functions are only for tracking models － ST926X/936X)
Note: When keyboard control isn't used and "Return Time" is also over, "Return Mode" function will be started.

5. Auto Mode Setting

● Push joystick down to select <AUTO MODE>, and then push joystick left or right to select mode.

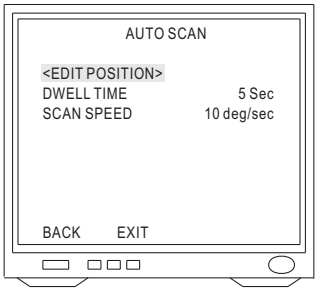
OFF → SCAN → SEQ. → TOUR1 → TOUR2 → PATROL → TRACK

OFF: NO action.
SCAN: Perform auto scan mode.
SEQ.: Perform preset group mode.
TOUR1: Perform tour1 list mode.
TOUR2: Perform tour2 list mode.
PATROL: Perform memory patrol mode.
TRACK: Perform human tracking mode.
(The tracking functions are only for tracking models － ST926X/936X)

Note: 1. Press (AUTO PAN) key on the keyboard to perform Auto mode function.
2. On tracking mode, once the object move out the traceable or discriminable area, the fast dome camera will back to the preset 1 to continue doing tracking function after 10 sec..

6. Auto Scan Mode Setting

- Push joystick down to select <SELF RET. MODE> or <AUTO MODE>, and then push joystick left or right to select <AUTO>, then press C.SET CTRL1 key into auto scan mode setting.



(1) Position of Auto Pan Setting

- Push joystick down to select <EDIT POSITION>, and then press C.SET CTRL1 key into setting menu.
- Push joystick left, right, up or down to select start position, and then press ZOOM+, ZOOM-, FOCUS FAR, FOCUS NEAR, IRIS+, IRIS- to adjust zoom, focus, iris, then press C.SET CTRL1 key to confirm.
- Push joystick left, or right to select end position, and then press C.SET CTRL1 key to confirm.

(2) Dwell Time Setting

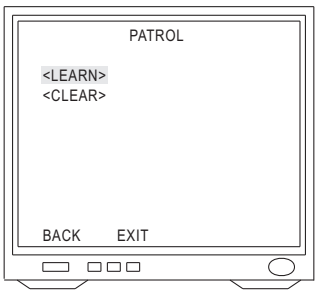
- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select dwell time. (1 ~ 255 sec)

(3) Scan Speed Setting

- Push joystick down to select <SCAN SPEED>, and then push joystick left or right to select scan speed. (1 ~ 40 deg/sec)

7. Patrol Mode Setting

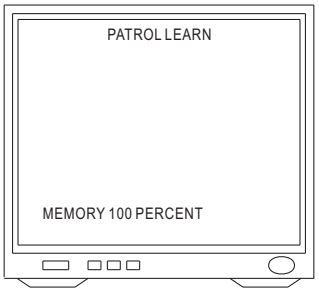
- Push joystick down to select <SELF RET. MODE> or <AUTO MODE>, and then push joystick left or right to select <PATROL>, then press C.SET CTRL1 key to enter patrol mode setting menu.



(1) Patrol Learn Setting

- Push joystick down to select <LEARN>, and then press C.SET CTRL1 key into setting menu.
- Control joystick or press lens control key to start patrol learn mode. (Count down time from 100% ~ 1%)
- Press C.SET CTRL1 key to end patrol learn mode.

Note: Patrol mode can record all action of keyboard, and when Auto Pan Mode is selected, camera will automatically move according to keyboard's action stored in memory.



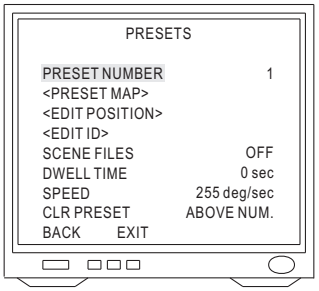
(2) Clear Memory of Patrol

- Push joystick down to select <CLEAR>, and then press C.SET CTRL1 key to clear all memory of patrol.

Preset Function Setting Menu

1. Display the Preset Setting Menu

- After getting in dome setting menu, push joystick down to select <PRESETS>, and then press C.SET CTRL1 key into presets setting menu.



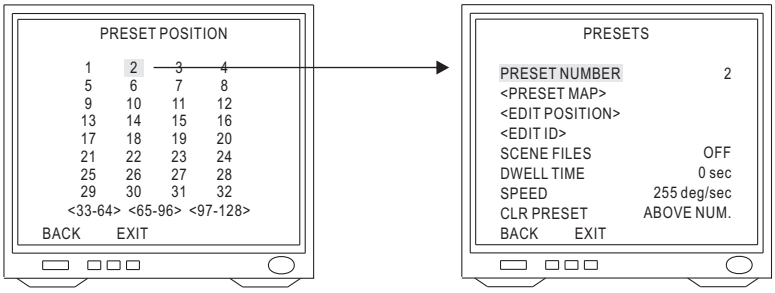
2. Select Preset Numbers

(1) Select number by PRESET NUMBER

- Push joystick down to select <PRESET NUMBER>, and then push joystick left or right to select preset number. (1 ~ 128)

(2) Select number by PRESET MAP

- Push joystick down to select <PRESET MAP>, and then press C.SET CTRL1 key into preset map.
- Push joystick left, right, up or down to select preset number, and then press C.SET CTRL1 key into preset setting menu.
- If need to select preset numbers 33~64, push joystick down to <33~64>, and then press C.SET CTRL1 key into preset numbers 33~64.

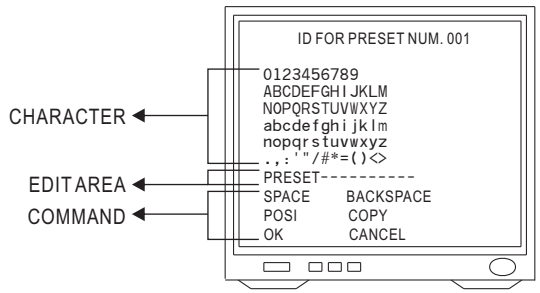


3. Preset Position Setting

- Push joystick down to select <EDIT POSITION>, and then press C.SET CTRL1 key into preset position setting.
- Push joystick left, right, up, or down to start position, and then press ZOOM+, ZOOM-, FOCUS FAR, FOCUS NEAR, IRIS+, IRIS- to adjust zoom, focus, iris, then press C.SET CTRL1 key to confirm.

4. Preset ID Setting

- Push joystick down to select <EDIT ID>, and then press C.SET CTRL1 key into preset ID setup.



(1) New Preset ID Editing

- Push joystick down to select character, and press C.SET CTRL1 key to confirm. The character selected will be showed in edit area. If you need space, push joystick down to select <SPACE> and press C.SET CTRL1 key to confirm.
- Press IRIS+ or IRIS- to switch to next character list.
- Repeat all steps to complete preset ID.

(2) Copy preset ID to Another Preset

- Push joystick down to select [EDIT AREA], and push joystick left or right to select first copy of characters.
- Push joystick down to <COPY>, and press C.SET CTRL1 key to confirm. At this time first character of preset ID will be copy to first character position of another preset ID, and press C.SET CTRL1 key to do next copy.
- Push joystick down to <OK>, and press C.SET CTRL1 key for exit. Select another preset on the preset menu, and get into preset ID setting. Then push joystick down to [EDIT AREA] and press C.SET CTRL1 key for copy. At this time edit area will show preset ID that was copied.

(3) Modify Preset ID

- Push joystick down to select [EDIT AREA] on the preset ID setting, and push joystick right to select modifiable characters.
- Push joystick down to select new characters, and press C.SET CTRL1 key to chose.

(4) Cancel Preset ID

- Push joystick down to <CANCEL>, and then press C.SET CTRL1 key to cancel preset ID.

(5) Preset ID Position Setting

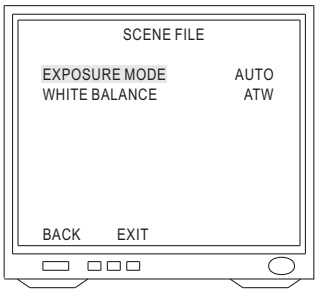
- Push joystick down to <POSI>, and then press C.SET CTRL1 key to get in.
- Push joystick to move preset ID to needful position of frame, and then push C.SET CTRL1 key to confirm.

(6) Return Preset Menu

- Push joystick down to <OK>, and then press C.SET CTRL1 key to back to preset menu.

5. Scene File of Preset Setting

- Push joystick down to select <SCENE FILES>, and then push joystick left or right to select scene file mode. (OFF or ON)
- Select <ON>, press C.SET CTRL1 key into scene file of preset menu.



☞ EXPOSURE MODE: AUTO / MANUAL

☞ WHITE BALANCE: ATW/ AWC/ USER1/ USER2/ ANTICR

Note: When scene file of preset is "ON", it will be part of preset parameters.

6. Dwell Time Setting

- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select needful dwell time. (1 ~ 255 sec)

Note: Only preset No.1~16 can set dwell time, because group of auto pan can only edit preset No.1~16. Other preset numbers can't set dwell time.

7. Speed Setting

- Push joystick down to select <SPEED>, and then push joystick left or right to select speed of preset. (1 ~ 255 deg/sec)

Note: Only preset No.1~16 can set speed, because group of auto pan can only edit preset No. 1~16. Other preset numbers can't set speed.

8. Cancel Preset

- Push joystick down to select <CLR PRESET>, and then push joystick left or right to select <ABOVE NUM> or <ALL>. Then press C.SET CTRL1 key to confirm.

ABOVE NUM.: Only cancel parameter of allotted preset

ALL: Cancel parameters of all presets (1~128)

Note : When clear the setting value of preset, the name of preset will be set PRESET XXX. (XXX: 1~128)

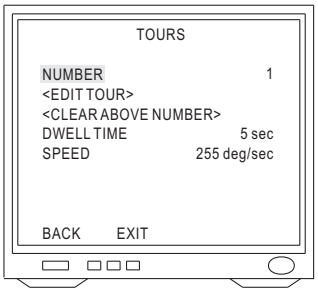
Tour Function Setting Menu

1. Display the Tour Setting Menu

- After getting in dome setting menu, push joystick down to select <TOURS>, and then press C.SET CTRL1 key into tours setting menu.

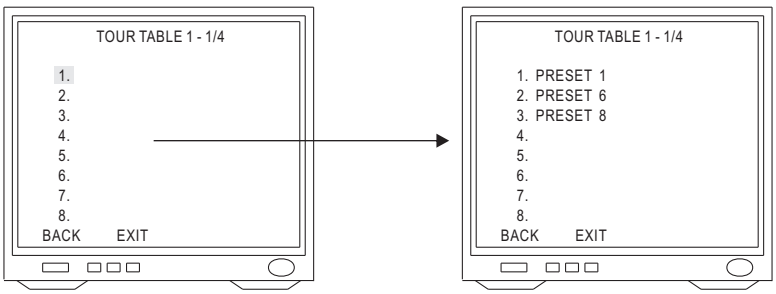
2. Tour Number Selection

- Push joystick down to select <NUMBER>, and then push joystick left or right to select Tour1 or 2.



3. Edit Tour

- Push joystick down to select <EDIT TOUR>, and then press C.SET CTRL1 key into edit tour setting.
- Push joystick up or down to select number. When joystick down to last line, push joystick down again to get in next table of page. Each tour table can edit 32 presets.
- Push joystick left or right to select preset. (1~128)
- Press C.SET CTRL1 key to confirm, and push joystick to select <BACK>, then press C.SET CTRL1 key again to back to tours setting, or push joystick to select <EXIT>, and press C.SET CTRL1 key to exit setting menu.



4. Cancel Tour

- Push joystick down to select <CLEAR ABOVE NUMBER>, and then press C.SET CTRL1 key to cancel tour.

5. Dwell Time Setting

- Push joystick down to select <DWELL TIME>, and then push joystick left or right to select dwell time of tour. (1~255 sec)

  Note: When Self Return Mode or Auto Mode is Tour, dwell time of Auto Pan will be dwell time setting of tour.

6. Speed Setting

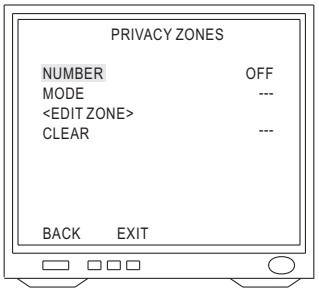
- Push joystick down to select <SPEED>, and then push joystick left or right to select preset speed. (1~255 deg/sec)

  Note: When Self Return Mode or Auto Mode is Tour, speed of Auto Pan will be speed setting of tour.

Privacy Zones Setting Menu

1. Display the Privacy Zones Setting Menu

- After getting in dome setting menu, push joystick down to select <PRIVACY ZONES>, and then press C.SET CTRL1 key into privacy zones setting menu.



2. Privacy Zones Number Setting

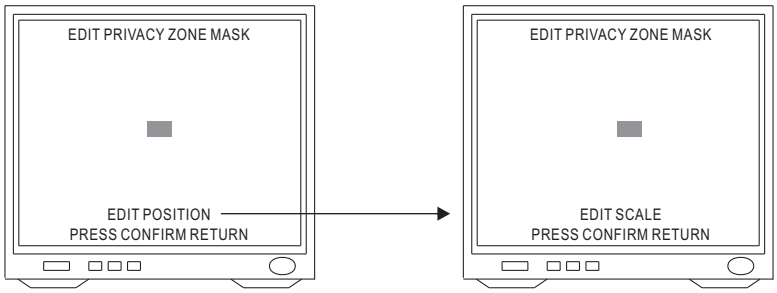
- Push joystick down to select <NUMBER>, and then push joystick left or right to select number. (1~8)

  Note: If privacy zones is "OFF", privacy zones setting won't be edited.

3. Edit Privacy Zones

- Push joystick down to select <EDIT ZONE>, and then press C.SET CTRL1 key into Edit Zone mode. Also middle of monitor will display privacy zone mask area.
- Push joystick left or right to adjust privacy mask position.
- Adjust optical zoom lens and auto focus lens, and then press C.SET CTRL1 key to confirm and get into privacy zone mask area for editing.
- Press ◎ key, and then push joystick left, right, up, or down to extend privacy zone mask area.
- Press ✳ key, and then push joystick left, right, up, or down to reduce privacy zone mask area.
- After completing setting, press C.SET CTRL1 key to confirm and back to privacy zones setting menu.

  Note: Optical lens can just adjust 1X to 10X in edit zone mode.



4. Cancel Privacy Zone Mask

- Push joystick down to select <CLEAR>, and then push joystick left or right to select <ABOVE NUM.> or <ALL>. Then press C.SET CTRL1 key to confirm.

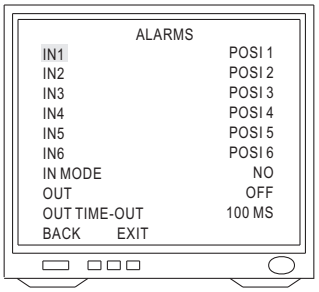
  ABOVE NUM.: Only cancel parameter of allotted privacy zone.

  ALL: Cancel parameters of all privacy zone. (1~8)

Alarms Setting Menu

1. Display the Alarms Setting Menu

- After getting in dome setting menu, push joystick down to select <ALARMS>, and then press (C.SET CTRL1) key into alarms setting.



2. Connection Function of Alarm Input Setting

- Push joystick down to select <IN1> to <IN6>, and then push joystick left or right to select the connection function:

OFF → POSI → SCAN → SEQ. → TOUR1 → TOUR2 → PATROL → TRACK

OFF: NO action.
POSI: Alarm corresponding preset positions mode.
SCAN: Perform auto scan mode.
SEQ.: Perform preset group mode.
TOUR1: Perform tour1 list mode.
TOUR2: Perform tour2 list mode.
PATROL: Perform memory patrol mode.
TRACK: Perform human tracking mode.
(The tracking functions are only for tracking models － ST926X/936X)

Note: 1. When alarm input is tracking mode, if alarm happen, the fast dome camera will implement the <IN 1> ~ <IN 6>, and then start the tracking function.
2. On tracking mode, once the object move out the traceable or discriminable area, the fast dome camera will back to the alarm corresponding preset positions 1~6 to continue doing tracking function after 10 sec..

3. Input of Alarm Mode Setting

- Push joystick down to select <IN MODE>, and then push joystick left or right to select <NO> or <NC>.

NO mode: Contact of input alarm is normally open. If contact is short, alarm will be triggered.
NC mode: Contact of input alarm is normally short. If contact is open, alarm will be triggered.

4. Alarm Output Control Setting

- Push joystick down to select <OUT>, and then push joystick left or right to select alarm output mode:

OFF → IN 1 → IN 2 → IN 3 → IN 4 → IN 5 → IN 6 → ANY

OFF: NO action.
IN 1: Only alarm input 1 will be start.
IN 2: Only alarm input 2 will be start.
IN 3: Only alarm input 3 will be start.
IN 4: Only alarm input 4 will be start.
IN 5: Only alarm input 5 will be start.
IN 6: Only alarm input 6 will be start.
ANY: All of alarm input <1~6> will be start.

Remark: When using Fast Dome IP Camera, only 3 alarm(in1~3) inputs.

5. Alarm Output Return Time Setting

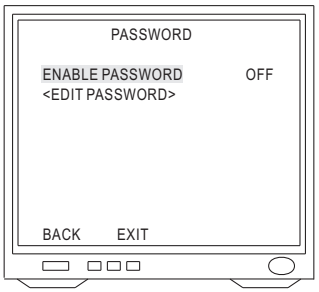
- Push joystick down to select <OUT TIME-OUT>, and then push joystick left or right to select return time of alarm output:

100MS → 200MS → 300MS → 400MS → 500MS → 1000MS
5000MS ← 4000MS ← 3000MS ← 2000MS

Password Function Menu (Fast Dome IP Camera not support)

1. Display the Password Setting Menu

- After getting in dome setting menu, push joystick down to select <PASSWORD>, and then press C.SET CTRL1 key into password function menu.



2. Password Setting

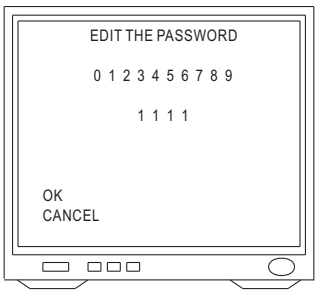
- Push joystick down to select <ENABLE PASSWORD>, and then push joystick left or right to select <ON> or <OFF>.

3. Edit Password Setting

- Push joystick down to select <EDIT PASSWORD>, and then press C.SET CTRL1 key into edit password setting.
- Push joystick left or right to select number 1~9, and then press C.SET CTRL1 key to confirm. The number that is selected will be displayed on the edit column.
- Repeat above steps until password setting has been completed.

- Push joystick down to select <OK>, and then press C.SET CTRL key to confirm and back to password function menu, or push joystick down to select <CANCEL>, and then press C.SET CTRL key to cancel password. These numbers of Edit column will be reset to "1111".

  Note: When edit password setting and camera recording function are simultaneously performed, please stop recording function first; otherwise frame of password setting will be recorded, too.



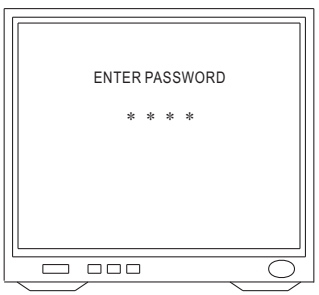
4. Modify Password

- To modify password after editing password completed, please get in <EDIT PASSWORD> again to edit.
- If password function is ON, previous passwords have to enter on the setting menu first, and then do modifying password.

5. Input Password

- After password function is ON, press C.SET CTRL key to display frame of input password on the screen.
- When protocol is MLP1, push joystick up or down to select number 0~9 and press key to confirm. Select numbers will become to "*".
- Repeat above steps until passwords have been completed. If password is correct, setting menu will be displayed.
- When protocol is MLP2, press number 0 ~ 9 key on the keyboard to input, and then press ENT key to confirm. If password is correct, setting menu will be displayed.

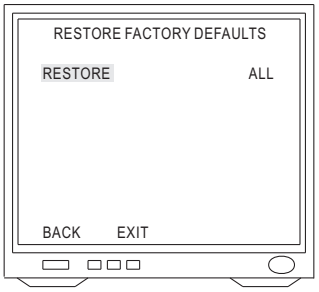
  Note: If not enter password within 10 sec or input password is wrong, "Invalid password" will be show on the screen. Primary password is "1111".



Restore Factory Defaults

1. Display the Restore Function Initialization Menu

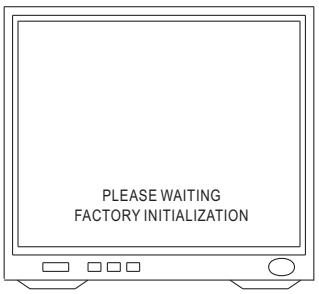
- After getting in dome setting menu, push joystick down to select <FACTORY INITIAL>, and then press (C.SET CTRL1) key into factory initial setting.



2. Factory Initial for All

- Push joystick down to select <RESTORE>, and then push joystick left or right to select <ALL>.
- Press (C.SET CTRL1) key to confirm, and "Are you sure continue" will be displayed on the screen.
- Press (C.SET CTRL1) key again, and then to do factory initialization for all.

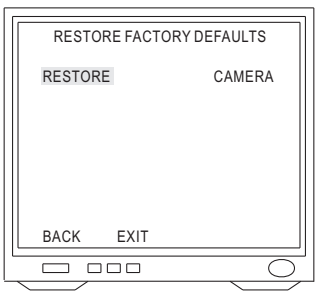
Note: "PLEASE WAITING FACTORY INITIALIZATION"will show on the screen after confirmation.



3. Factory Initial for Camera

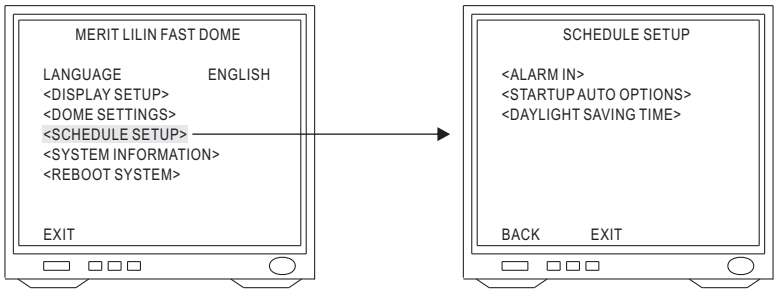
- Push joystick down to select <RESTORE>, and then push joystick left or right to select <CAMERA>.
- Press (C.SET CTRL1) key to confirm, and "Are you sure continue" will display on the screen.
- Press (C.SET CTRL1) key again, and then to do factory initialization for camera.

Note: Check again. If not press (C.SET CTRL1) key to confirm within 3 sec, this command will be canceled.



Schedule Setup Menu

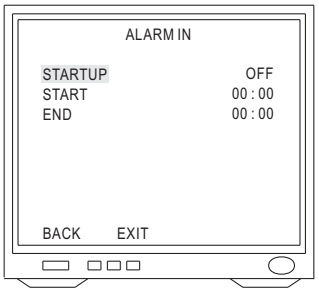
- Press (C.SET CTRL1) key into setup menu.
- Push joystick down to select <SCHEDULE SETUP>, and then press (C.SET CTRL1) key into schedule setting.



Alarm Input Schedule Setting Menu

1. Display the Alarm Input Schedule Setting Menu

- After getting into schedule setting menu, push joystick down to select <ALARM IN>, and then press (C.SET CTRL1) key into alarm input schedule setting menu.



2. Start Alarm Input Schedule Setting

- Push joystick down to select <STARTUP>, and then push joystick left or right to select <ON> or <OFF>.

  OFF: Alarm input schedule function is OFF, alarm input trigger will not be limited by schedule time.

  ON: Alarm input schedule function is ON, alarm input trigger will be limited by schedule time.

3. Start Time Setting

- Push joystick down to select <START>, and then press (C.SET CTRL1) key into time setting. Then push joystick left or right to select start time and press (C.SET CTRL1) key for next item.

  18 : 00 → (C.SET CTRL1) → 18 : 00 → (C.SET CTRL1) → 18 : 00

  Note: When alarm input schedule function is ON and start time is also beginning, alarm input trigger will be performed.

4. End Time Setting

- Push joystick down to select <END>, and then press C.SET CTRL1 key into time setting. Then push joystick left or right to select end time and press C.SET CTRL1 key for next item.

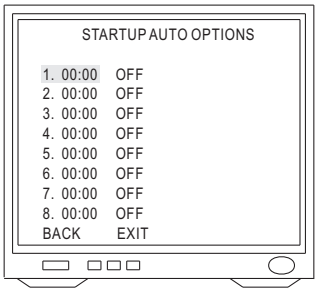
  08 : 00 → C.SET CTRL1 → 08 : 00 → C.SET CTRL1 → 08 : 00

  Note: When alarm input schedule function is ON and end time is also arrived, alarm input trigger will be stopped.

Startup Auto Options Menu

1. Display the Startup Auto Options Setting Menu

- After getting into schedule setting menu, push joystick down to select <STARTUP AUTO OPTIONS>, and then press C.SET CTRL1 key into startup auto options setting menu.



2. Schedule Time Setting

- Push joystick down to item 1 to 8, and then press C.SET CTRL1 key into time setting and push joystick left or right to select time. Then press C.SET CTRL1 key to next item.

  01 : 00 → C.SET CTRL1 → 01 : 00 → C.SET CTRL1 → 01 : 00

3. Auto Options Setting

- Push joystick down to item 1 to 8 and complete time setting, and then get into auto setting. Then push joystick left or right to select auto mode and press C.SET CTRL1 key to confirm.

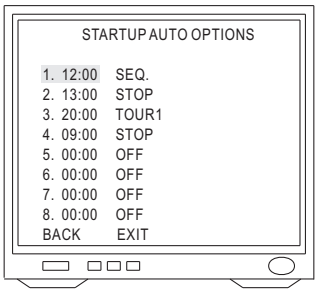
  → OFF → STOP → SCAN → SEQ. → TOUR1 → TOUR2 → PATROL → TRACK

  OFF: NO action
  STOP: Stop the auto mode.
  SCAN: Perform auto scan mode.
  SEQ.: Perform preset group mode.
  TOUR1: Perform tour1 list mode.
  TOUR2: Perform tour2 list mode.
  PATROL: Perform memory patrol mode.
  TRACK: Perform human tracking mode.
  (The tracking functions are only for tracking models － ST926X/936X)

  Note: 1. When start time is beginning, auto setting mode will be start.
  2. While schedule is performing, if power supply occurs that power is failed and then restored, schedule won't be continue to perform until next schedule time starts.
  3. While schedule is STOP mode, if camera is set for "self return mode" and "self return time" is also arrived, camera will be performed "self return mode" until next schedule time starts.

Example:

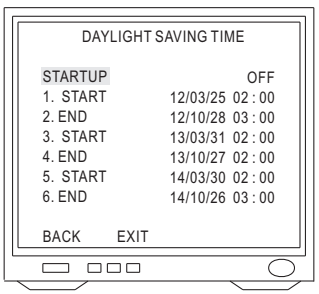
1. 12:00, perform SEQ. Mode
2. 13:00, STOP (If "self return mode" is home, "home position setting" is 1, and "self return time" is 10 min, camera will be performed "self return mode" function and recall preset position 1 by 13:10.)
3. 20:00, perform TOUR1 mode
4. 09:00, STOP (perform "self return mode" at 09:10)



Daylight Saving Time Menu

1. Display the Daylight Saving Time Setting Menu

- After getting into schedule setting menu, push joystick down to select <DAYLIGHT SAVING TIME>, and then press (C.SET CTRL1) key into daylight saving time setting menu.



2. Start Daylight Saving Time Function Setting

- Push joystick down to select <STARTUP>, and then push joystick left or right to select <ON> or <OFF>.

3. Start Time Setting

- Push joystick down to select <START>, and press (C.SET CTRL1) key into setting mode, and then push joystick left or right to select start time. Then press (C.SET CTRL1) key for next item.
  12 / 03 / 25 → (C.SET CTRL1) → 12 / 03 / 25 → (C.SET CTRL1) → 12 / 03 / 25 → (C.SET CTRL1) → 02 : 00 → (C.SET CTRL1) → 14 : 00 → (C.SET CTRL1) → 12 / 03 / 25 02 : 00

4. End Time Setting

- Push joystick down to select <END>, and press (C.SET CTRL1) key into setting mode, and then push joystick left or right to select end time. Then press (C.SET CTRL1) key for next item.
  12 / 10 / 28 → (C.SET CTRL1) → 12 / 10 / 28 → (C.SET CTRL1) → 12 / 10 / 28 → (C.SET CTRL1) → 03 : 00 → (C.SET CTRL1) → 03 : 00 → (C.SET CTRL1) → 12 / 10 / 28 03 : 00

SPECIFICATION

Operational

Manual Pan / Tilt Speed	0.15° ~ 120°/sec (8 stages)
Preset Position Pan / Tilt Speed	1° ~ 255°/sec
Preset Position Dwell Time	1 ~ 255 sec
Recall Preset Position Pan / Tilt Speed	360°/sec
180° Instant Flip Rotation Speed	360°/sec
Pan Rotation	360° Continuous
Tilt Rotation	-6° ~ +96°
Pan / Tilt Accuracy	± 0.25
Preset Position	128 preset positions (memory)
Preset Group	4 Group
	(Corresponding with first 16 presets)
Address Setting	1 ~ 64 ID setting (Protocol is MLP1)
	1 ~ 256 ID setting (Protocol is MLP2)

Camera

Image Device	1/4 Inch Interline Transfer CCD
Horizontal & Vertical Pixel	976 x 494 (NTSC)
	976 x 582 (PAL)
Scanning System	2:1 Interlace
Horizontal Resolution	700 TV Lines (Monochrome)
	650 TV Lines (Color)
Minimum Illumination	0.05Lux at F1.4 (Monochrome)
	0.1Lux at F1.4 (Color)
S / N Ratio	>50dB (AGC OFF)
Synchronization	Internal / Line Lock
Horizontal & Vertical Synchronization	15.734KHz/59.94Hz (NTSC)
	15.625KHz/50Hz (PAL)
Auto Gain Control	0 ~ 37 dB
Back Light Compensation	ON / OFF
White Balance	2 Auto mode / 2 Manual mode / Anti-CR mode
Video Output	CVBS 1.0Vp-p / 75Ω BNC

Optical Lens

- 26X Lens

Focal Length	f = 3.2 ~ 83.2mm
Aperture Max	F1.6 (wide) ~ F3.8 (telephoto)
View of Angle	W: 74.8°(D) 61.2°(H) 46.5°(V)
	T : 3.1°(D) 2.5°(H) 1.8°(V)

- 36X Lens

Focal Length	f = 3.3 ~ 119mm
Aperture Max	F1.4 (wide) ~ F4.2 (telephoto)
View of Angle	W: 72.5°(D) 60.1°(H) 46.3°(V)
	T : 2.13°(D) 1.47°(H) 1.20°(V)
	2 Auto mode / Manual
Focus Control	Auto / Manual
Iris Control	Manual Control
Zoom In / Out	±5%
Zoom In / Out Accuracy	

Electrical

Power Supply	24VAC or 100VAC ~ 240VAC (Option)
Power Consumption	13W [SP926X/936X]
	16W [IPS926X/936X]
	15W [ST926X/936X]
Control Interface	RS-485 (1 Input / 1 Output)
RS-485 Voltage	5.6V
Alarm Input	6 Inputs (Pull up)
	3 Inputs (Pull up) [IPS926X/936X]
Alarm Input Voltage	5.6V
Alarm Output	1 Output (NC or NO mode)
Alarm Output Voltage	1A 24VDC

Environmental

Operation Temperature	-10°C ~ +50°C
Operation Humidity	0% ~ 90%

Mechanical

Height	245mm (9.65")
Diameter	155mm (6.10")
Weight	2300g [SP926X/936X]
	[ST926X/936X]
	2400g [IPS926X/936X]

APPENDIX A

Quick Reference Table

Function		Operation
Pan / Tilt Control	To Tilt Up	Push Joystick Forward
	To Tilt Down	Push Joystick Down
	To Pan Left	Push Joystick Left
	To Pan Right	Push Joystick Right
Dome Selection		Numeric Key + CAM
Zoom In		ZOOM IN
Zoom Out		ZOOM OUT
Manually Bring The Object Farther		FOCUS FAR (Auto Focus LED off)
Manually Bring The Object Closer		FOCUS NEAR (Auto Focus LED off)
Auto Focus		AUTO FOCUS (Auto Focus LED on)
Open Iris		IRIS O (Auto Iris LED off)
Close Iris		IRIS C (Auto Iris LED off)
Auto Iris		AUTO IRIS (Auto Iris LED on)
180° Horizontal Instant Flip		180° REV
Set or Recall Preset Position		Numeric Key + PRESET (128 preset position)
Set Preset Speed		Numeric Key + F1 (1° ~ 255°/sec)
Set Preset Dwell		Numeric Key + F2 (0 ~ 255 sec)
Store Preset Data		1 + F3
Set Preset Group		Numeric 1,2,3,4 + F4 (4 Group)
Single Preset Position Saving		SHIFT + Numeric Keys + PRESET + ENT
Single Preset Position Delete		SHIFT + Numeric Keys + PRESET + CLR
Activate Auto Pan		AUTO PAN (Auto Pan LED on)
Stop Auto Pan		AUTO PAN (Auto Pan LED off)
Delete 128 Preset position Data		9 0 1 1 + CLR
Reboot System		9 0 1 3 + CLR
Reset Alarm		ALARM RESET
Select Return Time		5 1 + F4
Select Return Mode		5 2 + F4
Select Auto Mode		5 3 + F4
Activate Patrol Learn Mode		5 4 + F4
Stop patrol Learn Mode		5 5 + F4
Stop Password		1 + KEY LOCK
Activate Password		2 + KEY LOCK
Edit Password		3 + KEY LOCK

APPENDIX B

Trouble Shooting

1. No Power

1-1. Check power input connection

1-2. Check connection between camera body and upper base (AC24V Model)

2. No Video

2-1. Check camera video output on camera

2-2. Check cable (damaged cable)

2-3. Check video input connection on monitor

2-4. Check connection between camera body and upper base (AC24V Model)

3. No Telemetry

3-1. Check camera ID switch setting

3-2. Check RS-485 cable IN / OUT connection on camera

3-3. Check RS-485 cable IN / OUT connection on keyboard

3-4. Check if the fast dome is under Auto Pan mode Please deactivate the Auto Pan

3-5. Check if alarm is triggered, Cancel triggered alarm

4. Poor Focusing

4-1. Dusts on dome cover or housing cover. Clean the cover with cotton cloth

Installation Kit

Power Cable x 1

PELCO OPERATION

RS-485 Protocol Setting and DIP SWITCH Selection

● RS-485 Terminal Resistance Setting (PELCO D/P for parallel system)
In parallel system, MUST turn the resistance of the first and last terminal to ON position, and the resistance of nodes in-between to OFF position. This will insure the transmission interface in best condition.

DIP SWITCH	1	2
Fast Dome of the first and last terminal	ON	ON
Fast Dome of nodes in-between	OFF	OFF

● RS-485 Transmission Mode Selection

DIP SWITCH	3
2-Line HALF DUPLEX (HALF)	OFF
4-Line HALF DUPLEX (FULL)	ON

● Transmission Rate Selection

BAUD RATE SELECTION		
DIP SWITCH	4	5
2400 bps	ON	ON
4800 bps	OFF	ON
9600 bps	ON	OFF
19200 bps	OFF	OFF

● Protocol Selection

PROTOCOL SELECTION				
DIP SWITCH	6	7	8	9
PELCO D	ON	OFF	ON	ON
PELCO P	OFF	OFF	ON	ON

● RS-485 Interface ON/OFF Setting

DIP SWITCH	1	2	3	4	5	6	7	8	9	10
PELCO D	▲	▲	▲	ON	ON	ON	OFF	ON	ON	OFF
PELCO P	▲	▲	▲	▲	▲	OFF	OFF	ON	ON	OFF

▲ Please refer to the above instruction

● PELCO D Camera ID Switch Setting

DIP SWITCH	1	2	3	4	5	6	7	8	9	10
CAMERA ID 1	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 2	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 3	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 4	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 5	OFF	ON	OFF	ON	ON	ON	ON	ON	ON	ON
⋮										
CAMERA ID 253	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON
CAMERA ID 254	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	ON

● PELCO P Camera ID Switch Setting

DIP SWITCH	1	2	3	4	5	6	7	8	9	10
CAMERA ID 1	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 2	OFF	ON	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 3	ON	OFF	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 4	OFF	OFF	ON	ON	ON	ON	ON	ON	ON	ON
CAMERA ID 5	ON	ON	OFF	ON	ON	ON	ON	ON	ON	ON
⋮										
CAMERA ID 31	ON	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON
CAMERA ID 32	OFF	OFF	OFF	OFF	OFF	ON	ON	ON	ON	ON

OPERATION

PELCO D MPT9500 Keyboard to Control Fast Dome Camera:

1. First enter the CAMERA ID to be called: [Number] + [RECV ADDRS]

2. MANUAL OPERATION

Joystick Control: Move the Joystick to bring the PTZ to desired view position.

ZOOM Control:

Push [ZOOM WIDE]: Zoom out(View angle becomes wider), stops when the key released.

Push [ZOOM TELE]: Zoom in(View angle becomes narrower), stops when the key released.

FOCUS Control:

Push [FOCUS NEAR]: The target will become nearer. Focusing stops when the key released.

Push [FOCUS FAR]: The target will become farer. Focusing stops when the key released.

IRIS Control:

Push [IRIS OPEN]: Open the iris and brighten the picture. Iris will stop when the key released.

Push [IRIS CLOSE]: Close the iris and reduce glare. Iris will stop when the key released.

3. RETURNING TO A PRESET
   Push [Preset position number + PRESET GO], PTZ will move to the preset position.

4. SETTING A PRESET:
   Push [Preset position number + PRESET SET], PTZ will store the current position and lens condition into memory.

5. Startup Auto-Pan:
   Push [PAN AUTO] to execute auto mode item.

6. STOP Auto-Pan:
   Move [JOYSTICK] to stop Auto-Pan function or push [MANU PAN].

7. MENU MODE:
   Push [Number 95 + PRESET SET] to enter PTZ menu to do the setting.
   Move the joystick “up” and “down” to selection function. Move the joystick “right” and “left” to change the settings. Push [IRIS OPEN] in menu homepage to store the setting changes or continue to another page. Push [IRIS CLOSE] in menu homepage to leave the settings.

8. Other settings please refer to LILIN instruction manual.

PELCO D/P FUNCTION TABLE

Function	Operation
	Keyboard
PELCO D Set or Recall Preset Position (1~32)	Number + PRESET
PELCO P Set or Recall Preset Position (1~32/ 41~90/ 106~128)	Number + PRESET
180° Horizontal Instant Flip	Number 33 + PRESET
Return Home Position	Number 34 + PRESET
Perform Auto Scan mode (SCAN)	Number 35 + PRESET
Perform Auto Preset group mode (SEQ.)	Number 36 + PRESET
Perform Auto Tour1 list mode (TOUR 1)	Number 37 + PRESET
Perform Auto Tour2 list mode (TOUR 2)	Number 38 + PRESET
Perform Auto Memory Patrol mode (PATROL)	Number 39 + PRESET
Perform Auto Human Tracking mode (TRACK)	Number 40 + PRESET
Reset Alarm	Number 91 + PRESET
Activate Patrol Learn Mode	Number 92 + PRESET
Stop Patrol Learn Mode	Number 93 + PRESET
Reboot the System	Number 94 + PRESET
Enter Setting Menu Mode	Number 95 + PRESET
Stop Auto Pan mode	Number 96 + PRESET
Start Auto Pan mode	Number 99 + PRESET
Exit Setting Menu mode	Number 100 + PRESET
Into Auto Scan Setting Menu	Number 101 + PRESET
Into Preset Setting Menu	Number 102 + PRESET
Into Tour Setting Menu	Number 103 + PRESET
Into Patrol Setting Menu	Number 104 + PRESET
Into Track Setting Menu	Number 105 + PRESET

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