PTZ-A10X

CCTV PTZ Camera
with 12x Optical Zoom (Sony Zoom Module)
3 OSD - CAMERA SETUP > WB SETUP

1 ZOOM CAMERA SETUP
Setup the general functions of zoom camera module.

- FOCUS MODE: AUTO / MANUAL / SEMIAUTO
- DIGITAL ZOOM: ON / OFF
- FLICKERLESS: ON / OFF
- WHITE BALANCE SETUP: <AUTO EXPOSURE SETUP>

BACK EXIT

Press Near/Enter Key

2 WB SETUP
**WB MODE:** AUTO
- RED-ADJUST: - - -
- BLUE-ADJUST: - - -

BACK EXIT

Press Near Key, Joystick Down

3 WB SETUP
**WB MODE:** MANUAL
- RED-ADJUST: 0 0
- BLUE-ADJUST: 4 0

BACK EXIT

Press Near/Enter Key

4 WB SETUP
**WB MODE:** MANUAL
- RED-ADJUST: 0 0
- BLUE-ADJUST: 4 0

BACK EXIT

Joystick Down

5 WB SETUP
**WB MODE:** MANUAL
- RED-ADJUST: 0 0
- BLUE-ADJUST: 4 0

BACK EXIT

- AUTO: Camera perform white balance automatically.
- MANUAL: R/B gain level can be set up manually.
- ATW: Auto White Balance is performed in the wider range of color temperature than that of the "AUTO" mode.
- AWC: When right direction key is clicked, one time white balance is performed for current illumination condition and the value is kept.
- INDOOR: WB will be done under assumption of Indoor illumination.
- OUTDOOR: WB will be done under assumption of Sun light.

RED ADJUST 0 - 255
BLUE ADJUST 0 - 255
### 3 OSD - CAMERA SETUP > AE SETUP

#### 1 ZOOM CAMERA SETUP
- **FOCUS MODE**: SEMIAUTO
- **DIGITAL ZOOM**: ON
- **IMAGE FLIP**: OFF
- **FLICKERLESS**: OFF
- **<WHITE BALANCE SETUP>**: 
- **<AUTO EXPOSURE SETUP>**: 
- **BACK**: EXIT

Press Near/Enter Key

#### 2 AE SETUP

<table>
<thead>
<tr>
<th>Setting</th>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDR/BLC</td>
<td>ALL OFF / WDR ON / BLC ON</td>
<td>Sets the backlight compensation.</td>
</tr>
<tr>
<td>DAY/NIGHT</td>
<td>AUTO / DAY / NIGHT</td>
<td>'AUTO' exchanges day/night.</td>
</tr>
<tr>
<td>AE MODE</td>
<td>AUTO / MANUAL / IRIS / SHUTTER / BRIGHT</td>
<td>- AUTO: Full auto mode for AE function</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- MANUAL: In manual mode, 'IRIS', 'GAIN', 'SHUTTER SPEED' can be changed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>in this mode.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- IRIS: Iris priority mode. You can change iris while others are adjusted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>automatically.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- SHUTTER: Shutter priority mode. Shutter speed can be changed while</td>
</tr>
<tr>
<td></td>
<td></td>
<td>while others are adjusted automatically.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- BRIGHT: In this mode, you can assign AE value in terms of brightness.</td>
</tr>
<tr>
<td>IRIS LEVEL</td>
<td>CLOSE / F1.6 / F2 / F2.4 / F2.8 / F3.4 / F4 /</td>
<td>Works when 'AE MODE' is 'MANUAL' or 'IRIS' mode.</td>
</tr>
<tr>
<td></td>
<td>F4.8 / F5.6 / F6.8 / F8 / F9.8 / F11 / F14 /</td>
<td></td>
</tr>
<tr>
<td></td>
<td>F16 / F19 / F22 / F28 (16 steps)</td>
<td></td>
</tr>
<tr>
<td>GAIN LEVEL</td>
<td>-3 / 0 / 2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 /18 /</td>
<td>Enhances image brightness automatically in case that luminance</td>
</tr>
<tr>
<td></td>
<td>20 / 22 / 24 / 26 / 28dB (16 steps)</td>
<td>level of image signal is too low.</td>
</tr>
<tr>
<td>SHUTTER SPD</td>
<td>x64 / x32 / x16 / x8 / x4 / x2 / 1/60 / 1/90 /</td>
<td>Works when 'AE MODE' is 'MANUAL'.</td>
</tr>
<tr>
<td></td>
<td>1/100 / 1/125 / 1/180 / 1/250 / 1/350 / 1/500 /</td>
<td>Enhances image brightness automatically in case that luminance</td>
</tr>
<tr>
<td></td>
<td>1/725 / 1/1000 / 1/1500 / 1/2000 / 1/3000 / 1/4000 / 1/6000 / 1/10000 (22 steps)</td>
<td>level of image signal is too low.</td>
</tr>
<tr>
<td>BRIGHTNESS</td>
<td>0~31 (32 steps)</td>
<td>Works when 'AE MODE' is 'BRIGHT'. Adjusts brightness of images. Iris,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shutter speed and gain are adjusted automatically in correspondence with</td>
</tr>
<tr>
<td></td>
<td></td>
<td>this value.</td>
</tr>
<tr>
<td>SENS-UP</td>
<td>OFF / x2 / x4 / x8 / x16 / x32 / x64 / x128 /</td>
<td>Works when 'AE MODE' is 'BRIGHT'.</td>
</tr>
<tr>
<td></td>
<td>x256 / x512</td>
<td>Adjusts brightness of images. Iris, Shutter speed and gain are adjusted</td>
</tr>
<tr>
<td></td>
<td></td>
<td>automatically in correspondence with this value.</td>
</tr>
</tbody>
</table>

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SPECIAL

Sets the special function related to the image.

DNR
OFF / AUTO / MANUAL (1–10)
If reduces the noise caused by AGC action. If set to AUTO or MANUAL, the noise will be reduced but the ghost effect on moving objects will be increased.

DETAIL
0 ~ 15
Selects if the sub screen will be displayed. Sub screen will be displayed on the bottom of the right side. Even though the main image enables the digital zoom, the sub screen will only display with maximum optical zoom.

HR (High Resolution)
ON / OFF
This mode enhances edges and produces higher definition images.

HLC
ON / OFF
Part where becomes brightness more than the standard value is automatically hid by mask on the video.
OSD - SYSTEM SETUP

1. SYSTEM SETUP
- <RELAY TYPE>
  Start RELAY TYPE setup.

- <PASSWORD>
  Start PASSWORD setup.

- <SET HOME POSITION>
  Starts SET HOME POSITION setup. See the screen 4 below.

- <SET NORTH DIRECTION>
  Starts SET NORTH DIRECTION setup.

   LANGUAGE: ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH / ITALIANO / РУССКИЙ / PORTUGUÊS

   You can select your preferred Language of OSD display from 7 choices. After selecting a language, press near or enter key.

   - <FAN HEATER SETUP>
     Moves to FAN HEATER SETUP screen.
     - This setup is only applicable for a fan/heater model.

   - <PROTOCOL/BAUD RATE>
     Moves to PROTOCOL/BAUD RATE screen.

2. RELAY TYPE SETUP

   RELAY 1: NORMAL OPEN (N.O) / NORMAL CLOSE (N.C)
   Contacts type of 4ch. Relay out are defined.

3. EDIT PASSWORD

   - Sets the 4 characters long password. If this function is set to 'ENABLE', the password is required whenever you enter OSD menu.
   - The default password is '4321' and the master password is 'a -> g'.

4. SET HOME POSITION

   Home position means the origin of pan angle calculation. The value of pan angle displayed on the screen is based on this home position. Home is not effective to tilt angle.

   By using joystick, move the camera to the desired position and press near key.

   If you change the location of the home position, all horizontal location of functions such as preset, scan, pattern, group and privacy zone mask will be shifted based on the changed home position.

   If there are no setup for those functions like preset, pattern, scan, group camera will automatically move to home position after rebooting.

   If power up action is set to be on, camera will continue the function which is executed last after rebooting. Set Home Position?

   - When you replace the camera block or the orientation of camera is changed due to maintenance operations, it is very difficult to maintain the same pan orientation. Therefore, all function data maintain on pan orientation such as preset, scan, pattern, group and privacy zone mask are not useful any more accordingly.

   However, even in this case, you can reuse the data if you redefine set home position on the previous home position.
OSD - SYSTEM SETUP

5 SET NORTH DIRECTION
By using joystick, move the camera to the desired north position and press enter (near/save). The direction will be dislocated in the screen.

Direction will be displayed from:
N(North) / S(South) / E(East) / W(West) / NE(Northeast) / NW(Northwest) / SE(Southeast) / SW(Southwest).

6 FAN HEATER SETUP
Sets the fan/heater enabled/disabled according to the temperature.

This menu will be displayed only for fan/heater model.

FAN RUN TEMP 20C ~ 80C (68F ~ 178F)
Above this temperature, the blower fan will start automatically.

HEATER RUN TEMP -10C ~ 20C (14F ~ 68F)
Below this temperature, the heater will be turned on automatically.

7 PROTOCOL/BAUDRATE
After installing the camera, you should set the communication protocol and baudrate.

Press the Near/Enter Key

BAUDRATE 2400 / 4800 / 9600 / 19200 / 38400
Select the appropriate baud rate.
SYSTEM INITIALIZE

CLEAR ALL DATA  YES / NO
Deletes all configuration data such as display, camera, motion setup and so on.

CLR DISPLAY SET  YES / NO
Initializes display configuration.

CLR CAMERA SET  YES / NO
Initializes camera configuration.

CLR MOTION SET  YES / NO
Initializes motion configuration.

CLR FUNCTION SET  YES / NO
Deletes preset, scan, pattern, group and schedule data.

REBOOT CAMERA  YES / NO
Reboots zoom camera module.

REBOOT SYSTEM  YES / NO
Reboots speed dome camera.

Initial Configuration Table

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Value</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera ID</td>
<td>ON</td>
<td>Display</td>
</tr>
<tr>
<td>PTZ Information</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Action Title</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Preset Label</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Alarm I/O</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Date/Time</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Privacy Zone</td>
<td>Undefined</td>
<td></td>
</tr>
<tr>
<td>Preset Lock</td>
<td>OFF</td>
<td>Motion</td>
</tr>
<tr>
<td>Power Up Action</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Auto Flip</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Jog Max Speed</td>
<td>140/sec</td>
<td></td>
</tr>
<tr>
<td>Jog Direction</td>
<td>NORMAL</td>
<td></td>
</tr>
<tr>
<td>Freeze In Preset</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Park Action</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Preset 1~255</td>
<td>Undefined</td>
<td>Function</td>
</tr>
<tr>
<td>Scan 1~8</td>
<td>Undefined</td>
<td></td>
</tr>
<tr>
<td>Pattern 1~4</td>
<td>Undefined</td>
<td></td>
</tr>
<tr>
<td>Group 1~8</td>
<td>Undefined</td>
<td></td>
</tr>
<tr>
<td>Schedule 1~7</td>
<td>Undefined</td>
<td></td>
</tr>
<tr>
<td>Focus Mode</td>
<td>AUTO</td>
<td>Camera</td>
</tr>
<tr>
<td>Digital Zoom</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Image Flip</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Flickerless</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>White Balance</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>WDR/BLC</td>
<td>ALL OFF</td>
<td></td>
</tr>
<tr>
<td>Day/Night</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>AE Mode</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Iris Level</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Gain Level</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Brightness</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Sens-up</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>DNR</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Detail</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>HR</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>HLC</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Relay Type</td>
<td>Normal Open</td>
<td>System</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
<td></td>
</tr>
<tr>
<td>Fan Run Temp</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Heater Run Temp</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Protocol</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Baud Rate</td>
<td>2400</td>
<td></td>
</tr>
</tbody>
</table>
Specifications - Dimensions of Option Brackets

1. Wall Mount Bracket
   - Unit: mm
   - Dimensions:
     - Width: 276.2 mm
     - Height: 188.7 mm
     - Depth: 141.5 mm

2. Ceiling Mount Bracket
   - Unit: mm
   - Dimensions:
     - Width: 355.5 mm
     - Height: 83 mm
     - Depth: 141.5 mm
4 Specifications - Dimensions of Option Brackets

3. Flush Mount Bracket

Unit: mm

4. Sun Shield Mount Bracket

Unit: mm
## Specifications

### Camera

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Device</td>
<td>1/4&quot; SONY Super HAD II Double Scan CCD</td>
</tr>
<tr>
<td>Effective Pixel</td>
<td>NTSC : 1028(H) x 508(V), PAL : 1028(H) x 596(V)</td>
</tr>
<tr>
<td>H. Resolution</td>
<td>Color: 600 TV Line, B/W: 650TV Line</td>
</tr>
<tr>
<td>Zoom</td>
<td>12x Optical Zoom &amp; x32 Digital Zoom</td>
</tr>
<tr>
<td>Lens</td>
<td>f = 1.6(wide) ~ 2.7(tele), 3.8(Wide) ~45.6 (Tele)</td>
</tr>
<tr>
<td>Min. Illuminance</td>
<td>Color: 0.5 Lux (DSS Off), 0.001 Lux (DSS On), 0.0004 Lux (DSS ON)</td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>NTSC : 1/60<del>100,000 sec, PAL : 1/50</del>100,000 sec</td>
</tr>
<tr>
<td>Day &amp; Night</td>
<td>Auto / Day / Night (ICR)</td>
</tr>
<tr>
<td>Focus</td>
<td>Auto / Manual / Semi-auto</td>
</tr>
<tr>
<td>White Balance</td>
<td>Auto / Manual / ATW / AWC / Outdoor / Indoor</td>
</tr>
<tr>
<td>AGC</td>
<td>Auto / Manual / Max Gain Limit</td>
</tr>
<tr>
<td>WDR</td>
<td>On / Off</td>
</tr>
<tr>
<td>DNR</td>
<td>On / Off</td>
</tr>
<tr>
<td>Other Functions</td>
<td>System Image Flip by Installation Type</td>
</tr>
</tbody>
</table>

### Pan/Tilt

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Range</td>
<td>360 (Endless)</td>
</tr>
<tr>
<td>Tilt Range</td>
<td>180(Auto-Flip On), 90(Auto-Flip Off)</td>
</tr>
<tr>
<td>Pan/Tilt Speed</td>
<td>Preset: 360</td>
</tr>
<tr>
<td></td>
<td>Scan: 1 ~ 180/sec.</td>
</tr>
<tr>
<td></td>
<td>Manual: 0.05 ~ 360/sec. (Zoom Proportional)</td>
</tr>
<tr>
<td>Preset</td>
<td>127 Presets with Labels</td>
</tr>
<tr>
<td>Pattern</td>
<td>4 Patterns</td>
</tr>
<tr>
<td>Scan</td>
<td>8 Scans</td>
</tr>
<tr>
<td>Group</td>
<td>8 Groups (Max. 20 Entities per Group)</td>
</tr>
<tr>
<td>Other Functions</td>
<td>Image Auto Flip, Auto Parking, Power-up Action &amp; etc.</td>
</tr>
</tbody>
</table>

### General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Out</td>
<td>BNC (VBS 1.0 V)</td>
</tr>
<tr>
<td>Sensor In/Out</td>
<td>Built-in 2 Input / 1 Output</td>
</tr>
<tr>
<td>Material</td>
<td>Body: Aluminum Die-casting, Clear Bubble: Polycarbonate</td>
</tr>
<tr>
<td>Approvals</td>
<td>FCC, CE, IP66, RoHS</td>
</tr>
<tr>
<td>Power</td>
<td>Dual Voltage: DC 12V / AC 24V / 10W</td>
</tr>
<tr>
<td>Housing</td>
<td>Vandal Proof Structure, White Pearl Color</td>
</tr>
<tr>
<td>Weight</td>
<td>Net: 1.9 Kg, Package: 3 Kg</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-10 ~ 50 C (14 ~ 122 F)</td>
</tr>
</tbody>
</table>

### With Sunshield Mount Type (Heater Model)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Weather Proof, Vandal Proof Structure, White Pearl Color</td>
</tr>
<tr>
<td>Weight</td>
<td>Net: 2.5 Kg, Package: 3.5 Kg</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-45 ~ 50 C (-49 ~ 122 F)</td>
</tr>
</tbody>
</table>
CAUTION

RISK OF ELECTRIC SHOCK.
DO NOT OPEN.

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

WARNING

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

Precaution

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

WARNING

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

2. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.

3. Incorrectly connecting the power supply or replacing battery may cause explosion, fire, electric shock, or damage to the product.

4. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause abnormal heat generation or fire.

5. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.

6. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.

7. Do not place conductive objects (e.g. screwdrivers, coins, metal things, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.

8. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.

9. If any unusual smell or smoke come from the unit, stop using the product. In such case, immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.

10. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.

11. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.
Important Safety Instructions

1. Read these instructions.- All these safety and operating instructions should be read before the product is operated.

2. Keep these instructions.- The safety, operating and use instructions should be retained for future reference.

3. Heed all warnings.- All warnings on the product and in the operating instructions should be adhered to.

4. Follow all instructions.- All operating and use instructions should be followed.

5. Do not use this apparatus near water.- For example: near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement; near a swimming pool; etc.

6. Clean only with dry cloth.- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.- Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from over-heating. The openings should never be blocked by placing the product on bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.

8. Do not install near any heat sources such as radiators, heat registers, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
Disposal of Your Old Appliance

1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.

2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated by the government or the local authorities.

3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.

4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
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   20 MOTION SETUP
   21 FUNCTION SETUP > PRESET SETUP
   22 FUNCTION SETUP > SCAN SETUP
   23 FUNCTION SETUP > PATTERN SETUP
   24 FUNCTION SETUP > GROUP SETUP
   25 FUNCTION SETUP > SCHEDULE SETUP
   26 CAMERA SETUP > WHITE BALANCE SETUP
   27 CAMERA SETUP > AUTO EXPOSURE SETUP
   28 CAMERA SETUP > SPECIAL
   29 SYSTEM SETUP
   30 SYSTEM INITIALIZE

4. Specifications
   35 Dimension
   36 Dimensions of Option Brackets
   38 Specification
To install the camera with the ceiling mount bracket,

1. **Main Body**
   - Camera module, BNC video cable, screws, terminal block slot are included.

2. **Ceiling Mount Bracket**
   - It is used when installing the camera on to the ceiling or bracket.
   - To install the camera with the ceiling mount bracket, the bracket needs to be separated from the main body, then needs to be re-assembled the bracket and the main body according to the order.

3. **Screw & Plastic Anchor**
   - Screws are used to fix the ceiling mount bracket to the ceiling or bracket.
   - Plastic anchors are used to tighten the screws to the hole by inserting them into the holes in advance.

4. **Terminal Block**
   - Power, video, RS-485 and alarm input/output cables are connected through the terminal blocks to the camera.

5. **Torx Wrench**
   - It is used to screw/unscrew the fixed lock-up screws on the main body.

6. **Rubber Gasket**
   - It is installed between the ceiling mount bracket and wall/ceiling or other mount bracket to prevent the water leakage.

7. **Template Sheet**
   - It is used to decide accurate installation location.

8. **Quick Manual**
   - It gives a concise explanation of the installation of the camera.

- Please check if all the camera and accessories are included in the package.
1 Dome Cover
- Protects the camera module from outside environment.
- Do not detach protection film from the dome cover before finishing all installation processes to protect dome cover from scratches or dust.

2 Lockup Screw
Fits main body to the ceiling mount bracket.

3 Fan
Fan for temperature control.

4 BNC Video Cable
Main video output cable.

5 9P Terminal Block Slot
9P terminal block that is connected with cables is inserted in this slot.

6 LED & Reset Button
LED for active(yellow light), power(red light) status and Reset button for reset camera.

7 ID Setup Switch
Specify the camera ID.

8 Mounting Hole
This is used to attach the ceiling mount bracket to the ceiling.

9 ¼" Pipe Mounting Hole
- This is used to pass the cables to the cameras.
- When water protection is needed, connect the ¼" pipe through this hole, then pass the cables through the pipe.
Installation -
Installation Using Ceiling Mount Bracket

1. Drilling the Hole on the Ceiling
2. Fixing the Ceiling Mount Bracket
3. Connecting the Cables and the Terminal Block
4. Fixing the Main Body
5. Detaching the Protection Film

1. Disassemble the main body with the ceiling mount before installation the camera.
2. Drilling a Hole on the Ceiling
   Using provided template sheet, drill a hole (30mm diameter) on the ceiling panel to pass cables.
3. Fixing the Ceiling Mount Bracket
   Pass the cables through the ¾"pipe hole, and screw the ceiling mount bracket to the ceiling.
4. Rubber Gasket
   - Before installing the gasket, the hole in the center is to be cut by knife when only necessary.
   - When installing gasket, the protrusion of the gasket should be matched with the groove joint of the bottom of the ceiling mount bracket.
5. Connecting the Cables and the Terminal Block
   Connect the cables to the terminal block and then put the terminal block in the slot of the main body. (See the section Terminal Block for details.)
6. Fixing the Main Body
   Screw the main body to the ceiling mount bracket by screwing 4 lock-up screws.
7. Detaching the Protection Film
   Detach the protection film from the dome cover after finishing all installation.
Installation - Installation Using Pendant Mount Bracket (Option)

1. Installing on the Concrete Ceiling

1.1 Drilling the Hole on the Ceiling and Fixing the Anchor Bolts
To install the pendant mount bracket, drill four holes (6mm diameter/50mm depth) on the ceiling and insert the anchor bolts into the hole.

1.2 Fixing the Pendant Mount Bracket
1. There is a hole (20mm diameter) on the pipe of the bracket to pass the cables.
2. On the fixed anchor bolts, attach the rubber gasket and screw the pendant mount bracket.

1.3 To pass cables to upside of pendant, drill a hole (30mm diameter) on the ceiling.

1.4 Pass the cables into the pendant mount bracket, and screw the pendant mount bracket to the ceiling.

2. Connecting the Cables to the Terminal Block
See the section ‘Cabling the Terminal Block’ for details.

3. Connecting the Terminal Block
Put the terminal block connected to the cables in the slot of the main body.

4. Fixing the Main Body
Screw the main body to the ceiling mount bracket by screwing 4 lock-up screws.

5. Detaching the Protection Film
Detach the protection film from the dome cover after finishing all installation.
Installation - Installation Using Wall Mount Bracket (Option)

1. Installing on the Concrete Wall

1 Drilling the Hole on the Wall and Fixing the Anchor Bolts

To install the wall mount bracket, drill four holes (8mm diameter/50mm depth) on the wall and insert the anchor bolts into the hole.

2 Fixing the Wall Mount Bracket

1. There is a hole (20mm diameter) on the pipe of the bracket to pass the cables.
2. On the fixed anchor bolts, attach the rubber gasket and screw the wall mount bracket.

2 Drilling a Hole on the Wall

To pass cables to the wall, drill a hole (30mm diameter) on the wall.

3 Fixing the Wall Mount Bracket

Pass the cables into the wall mount bracket, and screw the wall mount bracket to the wall.

3 Connecting the Cables to the Terminal Block

See the section 'Cabling the Terminal Block' for details.

4 Connecting the Terminal Block

Put the terminal block connected to the cables in the slot of the main body.

5 Fixing the Main Body

Screw the main body to the ceiling mount bracket by screwing 4 lock-up screws.

6 Detaching the Protection Film

Detach the protection film from the dome cover after finishing all installation.
Installation -
Installation Using Flush Mount Bracket (Option)

1. Drilling the Hole on the Ceiling
   To pass main body through the ceiling, drill a hole (70mm diameter) on the ceiling.

2. Fix the Flush Mount Ring Bracket to the Main Body
   Fix the flush mount ring bracket to the main body using torx screws.

3. Fix the flush mount ring bracket with main body to the ceiling
   Fix the flush mount ring bracket to the ceiling using torx screws.

4. Snap the plastic ring Cover into the flush mount
ID number of camera is set using binary number. The example is shown below.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>8</th>
<th>16</th>
<th>32</th>
<th>64</th>
<th>128</th>
</tr>
</thead>
<tbody>
<tr>
<td>ex) ID=5</td>
<td>on</td>
<td>off</td>
<td>on</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>ex) ID=10</td>
<td>off</td>
<td>on</td>
<td>off</td>
<td>on</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
</tbody>
</table>

- If you want to control a certain camera, you must match the camera ID with 'CAM ID', setting of DVR or keyboard controller.
- ID number of the camera is set using binary number.
- The range of ID is 0~255.
- Factory default of camera ID is 1.
- Camera ID will be effective without rebooting the camera.
2 Installation - Terminal Block

1. Alarm Output
   - It connects to the alarm lights, siren or lamps, and it is activated according to the OSD menu setting.
   - There are 1 Alarm Output and it is relay contact type. Therefore, you do not have to care about polarity, AC/DC, and isolations between channels. Care must be taken for the power capacity of relay contact type.
   - The sensor types are normal open and normal close.

2. Alarm Input / Sensor
   - It connects to IR sensor, IRDA sensor or door switch. If the sensor is activated, it can activate to move camera to the specific angle and to connect the alarm device.
   - A cable of the sensor should connect to input 1 or 2, and the other should be connected to 'COM' slot.
   - The sensor types are normal open and normal close.

<Inside of terminal block: Activation type of alarm in/out N.O. / N.C.>

3. Power
   - Please check the correct rated power.
   - The rated power is marked on the bottom of the camera.

<table>
<thead>
<tr>
<th>Camera Type</th>
<th>Rated Power</th>
<th>Power Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>None Heater Model</td>
<td></td>
<td>10W</td>
</tr>
</tbody>
</table>

4. RS-485 Communication (Keyboard Controller/DVR)
   For PTZ control, connect this line to keyboard and DVR. To control multiple cameras at the same time, RS-485 communication lines of them are connected in parallel as shown below.
3 OSD - Check Points before Operation

Check Points before Operation
1. Before power is applied, please check the cables carefully.
2. The camera ID of the controller must be identical to that of the target camera. The camera ID can be checked by reading DIP switch of the camera.
3. If your controller supports multi-protocols, the protocol must be changed to match to that of the camera.
4. If you changed camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
5. Since the operation method can be different for each controller available, refer to the manual for your controller if camera can not be controlled properly.

1 Preset and Pattern Function Pre-check
- Check how to operate preset and pattern funcbn with keyboard controller/DVR in advance to operate camera function fully when using keyboard controller/DVR.
- If keyboard controller/DVR has no pattern key or fution, use shortcut keys with preset numbers. For more information, refer to ‘Reserved Preset’ below.

2 Reserved Preset
Some preset numbers are reserved to special functions.

<table>
<thead>
<tr>
<th>Preset key</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 95</td>
<td>Enters into OSD menu</td>
</tr>
<tr>
<td>+ 131~134</td>
<td>Runs pattern function 1 ~ 4</td>
</tr>
<tr>
<td>+ 141~148</td>
<td>Runs scan function 1 ~ 8</td>
</tr>
<tr>
<td>+ 151~158</td>
<td>Runs group function 1 ~ 8</td>
</tr>
<tr>
<td>+ 161</td>
<td>Sets relay output to OFF</td>
</tr>
<tr>
<td>+ 161</td>
<td>Sets relay output to ON</td>
</tr>
<tr>
<td>+ 165</td>
<td>Sets auto calibration to ON</td>
</tr>
<tr>
<td>+ 166</td>
<td>Sets auto calibration to OFF</td>
</tr>
<tr>
<td>+ 167</td>
<td>Sets proportional jog ON</td>
</tr>
<tr>
<td>+ 167</td>
<td>Sets proportional jog OFF</td>
</tr>
<tr>
<td>+ 170</td>
<td>Sets camera BLC mode to OFF</td>
</tr>
<tr>
<td>+ 171</td>
<td>Sets camera BLC mode to HIGH</td>
</tr>
<tr>
<td>+ 174</td>
<td>Sets camera focus mode to AUTO</td>
</tr>
<tr>
<td>+ 175</td>
<td>Sets camera focus mode to MANUAL</td>
</tr>
<tr>
<td>+ 176</td>
<td>Sets camera focus mode to SEMI-AUTO</td>
</tr>
<tr>
<td>+ 177</td>
<td>Sets day &amp; night mode to AUTO1</td>
</tr>
<tr>
<td>+ 178</td>
<td>Sets day &amp; night mode to NIGHT</td>
</tr>
<tr>
<td>+ 179</td>
<td>Sets day &amp; night mode to DAY</td>
</tr>
<tr>
<td>+ 190</td>
<td>Sets OSD display mode to AUTO (Except privacy mask)</td>
</tr>
<tr>
<td>+ 191</td>
<td>Sets OSD display mode to OFF (Except privacy mask)</td>
</tr>
<tr>
<td>+ 192</td>
<td>Sets OSD display mode to ON (Except privacy mask)</td>
</tr>
<tr>
<td>+ 193</td>
<td>Sets all privacy mask display to OFF</td>
</tr>
<tr>
<td>+ 194</td>
<td>Sets all privacy mask display to ON</td>
</tr>
<tr>
<td>+ 195</td>
<td>Sets fan/heater to ON (Turning off after 5 min, turn to auto mode)</td>
</tr>
<tr>
<td>+ 196</td>
<td>Sets fan/heater to OFF (After turning off, turn to manual mode)</td>
</tr>
<tr>
<td>+ 197</td>
<td>Fan ON(Turning off after 5 min, turn to auto mode)</td>
</tr>
<tr>
<td>+ 198</td>
<td>Fan OFF(After turning off, turn to manual mode)</td>
</tr>
<tr>
<td>+ 200</td>
<td>Sets digital zoom to ON</td>
</tr>
<tr>
<td>+ 201</td>
<td>Sets digital zoom to OFF</td>
</tr>
</tbody>
</table>
3 OSD - Aux Functions

1. Preset
   - Max. 255 positions can be stored as preset positions.
   - The preset number can be assigned from 1 to 255.
   - See the section ‘ROOT MENU>FUNCTION SETUP>PRESET SETUP’ for more detailed information.

   1. Set Preset
      Method 1) Use keyboard controller:
      Refer to keyboard controller manual.
      Method 2) Use OSD menu.

   2. Run Preset
      Method 1) Use keyboard controller:
      Preset key+Number key(1~255)

   3. Delete Preset
      To delete preset, use OSD menu.

2. Scan
   - By using scan function, you can make camera to move between 2 preset positions repeatedly.
   - See the section ‘ROOT MENU>FUNCTION SETUP>SCAN SETUP’ for more detailed information.

   1. Set Scan
      To set scan, use OSD menu.

   2. Run Scan
      Method) Pattern key + Scan number(1~8) + 10
      Ex) Run scan 2 = Pattern key + [12] + Enter key

   3. Delete Scan
      To delete scan, use OSD menu.

3. Pattern
   - Pattern function is that a camera memorizes the path (mostly curve path) by joystick of controller for assigned time and revives the path exactly as it memorized.
   - See the section ‘ROOT MENU>FUNCTION SETUP>PATTERN SETUP’ for more detailed information.

   1. Set Pattern
      To set pattern, use OSD menu.

   2. Run Pattern
      Method 1) Pattern key + Pattern number(1~4) + Enter key
      Ex) Run pattern 2 = Pattern key + [2] + Enter key

   3. Delete Pattern
      To delete pattern, use OSD menu.

   When the pattern is saved/executed, the pan/tilt is operated with ‘AUTO FLIP-OFF’.

4. Group
   - The group function allows running sequence of presets, pattern and/or scans.
   - See the section ‘ROOT MENU>FUNCTION SETUP>GROUP SETUP’ for more detailed information.

   1. Set Group
      To set group, use OSD menu.

   2. Run Group
      Method) Pattern key + [Group number(1~8) + 20]
      Ex) Run group 2 = Pattern key + [22] + Enter key

   3. Delete Group
      To delete group, use OSD menu.

5. Schedule
   - The schedule function allows running an appropriate function like preset, scan, group, pattern, home move at the designated day and time.
   - See the section ‘ROOT MENU>FUNCTION SETUP>SCHEDULE SETUP’ for more detailed information.
3. OSD - OSD Information

1. Preset Label
   - The label stored for specific preset.
   - See the section 'ROOT MENU>FUNCTION SETUP>PRESET SETUP>LABEL'.

2. Date / Time
   - Shows the current date/time.
   - See the section 5 'Setup - Date/Time Setup'.

3. Image Flip
   - Shows that images are currently reversed by auto flip function.
   - See the section 'ROOM MENU>CAMERA SETUP>IMAGE FLIP'.

4. Camera ID
   - The current camera ID(Address).
   - See the section 'ROOT MENU>SYSTEM INFORMATION'.

5. Action Title
   - Following are possible action titles and their meaning:

<table>
<thead>
<tr>
<th>Action Title</th>
<th>Means</th>
</tr>
</thead>
<tbody>
<tr>
<td>SET PRESET 123</td>
<td>Means to store preset 123.</td>
</tr>
<tr>
<td>PRESET 123</td>
<td>Means it reached preset 123.</td>
</tr>
<tr>
<td>PATTERN 1</td>
<td>Means the camera is running pattern 1.</td>
</tr>
<tr>
<td>SCN 1/PRESET 123</td>
<td>Means the camera is running scan 1.</td>
</tr>
<tr>
<td>RANGE OVER</td>
<td>Means the action received is not within the range supported.</td>
</tr>
<tr>
<td>UNDEFINED</td>
<td>Means the action received is not defined.</td>
</tr>
</tbody>
</table>

6. Temperature
   - Current temperature: Boxed 'C' and 'F' means celsius and fahrenheit respectively.
   - See the section 'ROOM MENU>DISPLAY SETUP>TEMPERATURE'.

7. Alarm Input Information
   - This information shows current state of alarm input. If an input is on state it will show the number of input. If an input is off state, '-' will be displayed.

8. Relay Out Information
   - This information shows the current state of relay out. If the output is on state it will show the number of output. If an output is off state, '-' will be displayed.

9. Compass Direction
   - Shows the current compass direction of the camera.
   - The direction is shown as N(North), S(South), E(East), W(West), NE(Northeast), NW(Northwest), SE(Southeast), SW(Southwest).
   - See the section 'ROOT MENU>SYSTEM SETUP>SET NORTH DIRECTION'.

10. Zoom Magnification
    - Shows the current zoom magnification.

11. Tilt Angle in Degree
    - Shows the current tilt(0 ~ 180) angle.

12. Pan Angle in Degree
    - Shows the current pan(0 ~ 359) angle.
This page explains how to operate the OSD menu using keyboard controller. If there are no keys or functions described below, refer the manual of the keyboard controller.

1. Move the Cursor Up/Down to Choose Menu
   To move from items to item in the menu, move the joystick up/down.

2. Shift to the Sub Menu of the Chosen Menu
   For all menu level, to go into sub menu, press near/enter key.

3. Choose the Value
   To change the value, press near/enter key to move the cursor to the value.

4. Change the Value
   Move the joystick up/down to change the value.

5. Move to the Previous Screen
   Press near key to save values and press far key to cancel values, then go to the previous screen.
ROOT MENU
To enter this screen, enter 'Preset key + 95'.

SYSTEM INFORMATION
Shows information and current configuration.

DISPLAY SETUP
Enable/Disable of OSD display on main screen.

MOTION SETUP
Setup for motion related settings.

FUNCTION SETUP
Setup for various functions such as preset, scan, pattern, group and schedule.

CAMERA SETUP
Configure camera related functions and data.

SYSTEM SETUP
Configure for basic system setup.

SYSTEM INITIALIZE
Initializes system configuration and sets all data to factory default configuration.

EXIT
To escape from the OSD setting, go to exit.

SYSTEM INFORMATION
FIRMWARE VER
Shows the current firmware version.

COLOR SYSTEM
Shows the current analog video system.

PROTOCOL
Shows the current PTZ control protocol.

BAUD RATE
Shows the current baud rate of the PTZ control.

ADDRESS
Shows the current camera ID of the PTZ control.
3 OSD - DISPLAY SETUP

1 DISPLAY SETUP
This menu defines enable/disable of OSD display on main screen. If an item is set to be 'AUTO', the item is displayed only when the value of it is changed.

<table>
<thead>
<tr>
<th>O D S - D I S P L A Y S E T U P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMERA ID</td>
</tr>
<tr>
<td>PTZ INFORMATION</td>
</tr>
<tr>
<td>ACTION TITLE</td>
</tr>
<tr>
<td>PRESET LABEL</td>
</tr>
<tr>
<td>ALARM I/O</td>
</tr>
<tr>
<td>DATE/TIME</td>
</tr>
<tr>
<td>TEMPERATURE</td>
</tr>
</tbody>
</table>

2 PRIVACY ZONE
- Selects area in image to mask.

<table>
<thead>
<tr>
<th>M A S K N O .</th>
<th>1 – 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select mask number. If the selected mask has data already, camera moves as it was set. Otherwise, 'UNDEFINED' will be displayed under 'MASK NO.'</td>
<td></td>
</tr>
</tbody>
</table>

3 DISPLAY
Sets if the camera makes mask shows or not on images.

<table>
<thead>
<tr>
<th>C L E A R</th>
<th>C A N C E L / O K</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deletes data in the selected mask no.</td>
<td></td>
</tr>
</tbody>
</table>

4 EDIT MASK
- Move to Target Position
Move camera to area to mask. Then the menu to adjust mask size will be displayed.
- If the tilt angle is located in the range between 90 to 90, you cannot set up privacy zone mask.
- If tilt angle over 90 (image flipped region) is designated, camera will automatically move to identical position by changing tilt angle less than 90 and moving pan angle 180 relatively.

5 EDIT MASK
- Color Change & Adjust Mask Size
Adjust mask size. Use joystick or arrow buttons to adjust mask size.
- Zoom In/Out: Change Color of Mask.
- Move Joystick Left/Right(←→): Adjust Mask Width.

6 PRIVACY ZONE
- <EDIT MASK>
Moves to setup the mask no.
MOTION SETUP
Setup the general functions of pan/tilt motions.

PRESET LOCK  ON / OFF
If motion lock is set to on, it is impossible to set up and delete preset, scan, pattern and group. It is possible only to run those functions. To set up and delete these functions, enter into OSD menu.

PWR UP ACTION  ON / OFF
This function enables to resume the last action executed before power down. Most of actions such as preset, pattern, scan and group are available for this function but jog actions are not available to resume.

AUTO FLIP  ON / OFF
In case that tilt angle arrives at the top of tilt orbit (90), zoom module camera keep moving to opposite tilt direction (180) to keep tracing targets. As soon as zoom module camera passes through the top of tilt direction[90], images should be reversed automatically and appears in screen. If this function is set to ‘OFF’, tilt movement range is 0 ~ 90.

JOG MAX SPEED  2/SEC ~ 200/SEC
Sets maximum jog speed. Jog speed is inversely proportional to zoom magnification. As zoom magnification goes up, pan/tilt speed goes down.

JOG DIRECTION  INVERSE / NORMAL
If you set this to ‘NORMAL’, the view in the screen is moving same direction with jog tilting. If ‘INVERSE’ is selected, the view in the screen is moving reversely.

FRZ IN PRESET  ON / OFF
At start point of preset movement, camera starts freezing the image of start point. Camera keeps displaying the image of start point during preset movement and does not display the images which camera gets during preset movement. As soon as camera stops at preset end point, camera starts displaying live images which it gets at preset end point. This function availability should be different by models.

PARKING ACTION SETUP
If ‘PARK ENABLE’ is set to ‘ON’, camera runs assigned function automatically if there is no PTZ command during assigned ‘WAIT TIME’.

PARK ENABLE  ON / OFF

WAIT TIME  00:00:05 ~ 04:00:00
The time is displayed with "hh:mm:ss" format and you can change this by 1 sec. unit.
1. To place the cursor on the time marked as below, press near key.
   [00:1 0:00]
2. Move joystick Left/Right to adjust hours, minutes and seconds.
3. Move joystick Up/Down to select the digit.
4. By pressing near key, save current setting.

PARKING ACTION  HOME / PRESET 1~128 (95 excepted) / SCAN 1~8 / PATTERN 1~4 / GROUP 1~8
Ex) If ‘HOME’ is selected for park action, camera will move to home position when there is no PTZ command during the assigned ‘WAIT TIME’.

Press Near/Enter Key
FUNCTION SETUP
Configure 5 special functions with this menu.

PRESET SETUP - Undefined
127 presets from the number 1 to 128 can be assigned excluding preset 95 reserved for menu.

PRESET NO.  1 ~ 128 (95 excepted)
If a selected preset is already defined, camera moves to pre-defined position and preset characteristics such as label and relay outputs show on monitor. (Refer screen 4) If a selected preset is not defined, 'UNDEFINED' shows on monitor.

<EDIT SCENE>
Redefine the current preset scene position (i.e. PTZ).

EDIT SCENE
1. Using joystick, move camera to the desired position.
2. By pressing near key, save the current PTZ data.
3. Press far key to cancel.

PRESET SETUP
If the preset is defined, the information will be shown on the OSD menu with the setting, and the alarm device (if defined) will be activated.

PRESET NO.  1 ~ 128 (95 excepted)

<EDIT SCENE>

<LABEL>
Edits Label to show on monitor when preset runs. Max. 10 alphabets are allowed.

CAM ADJUST    GENERAL / SPECIAL
-WB(White Balance) and AE(Auto Exposure) can be set up independently for each preset.
- GENERAL: WB or AE can be set up totally and simultaneously for all presets in ROOT MENU > CAMERA SETUP menu.
- SPECIAL: WB or AE can be set up independently or separately for each preset in each preset setup menu.
- Each special WB/AE value should be activated correspondingly when camera arrives at each preset location. During jog operation, general WB/AE value should be applied.
- All special WB/AE value should not be changed although general WB/AE value is changed. If 'SPECIAL' is selected, the menu to set WB/AE is shown on monitor.

ALARM OUT    1 / 1
Relay output can be linked with preset run. '-' means off, '1' means on.
3 OSD - FUNCTION SETUP > PRESET SETUP

1 PRESET SETUP
   PRESET NO. 1
   <EDIT SCENE> •<LABEL> CLR PRESET CAM ADJUST ALARM OUT BACK EXIT

Press Near/Enter Key

2 LABEL
   - Edits label to show on monitor when camera arrives at preset.

3 LABEL
   PRESET1
   - [ ] 234567890 OK CANCEL
   A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
   < > / : . *

Press Near/Enter Key

3 LABEL
   PRESET1
   [SKY ] 234567890 OK CANCEL
   A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
   < > / : . *

Press Near/Enter Key

3 LABEL
   - Complete Editing
   If you complete the label editing, move cursor to 'OK' and press near key to save completed label. To abort current change, move cursor to 'CANCEL' and press near key.

1 PRESET SETUP
   PRESET NO. 1
   <EDIT SCENE> <LABEL> CLR PRESET CAM ADJUST <SPECIAL> ALARM OUT BACK EXIT

Press Near/Enter Key

2 CAM ADJUST
   - Edits label to show on monitor when the camera arrives at presets.

   <WHITE BALANCE SETUP>
   See the section 'ROOT MENU'>CAMERA SETUP'>WB SETUP'.

   <AUTO EXPOSURE SETUP>
   See the section 'ROOT MENU'>CAMERA SETUP'>AE SETUP'.

   BACK EXIT
2 SCAN SETUP

By using the scan function, you can make the camera to move between 2 preset positions repeatedly.

When the scan function runs, the camera moves from the preset assigned as the 1st point to the preset assigned as the 2nd point in CW(Clockwise) direction. Then the camera moves from the preset assigned as the 2nd point to the preset assigned as the 1st point in CCW(Counterclockwise) direction.

In case that the preset assigned as the 1st point is same as the preset assigned as the 2nd point, the camera turns on its axis by 360 in CW direction and then it turns on its axis by 360 in CCW direction.

Scan No. 1 ~ 8
Selects the scan number to edit. If a selected scan has not defined, ‘NOT USED’ is displayed in 1st position and 2nd position.

1st POS. / 2nd POS. PRESET 1 ~ 128 (95 excepted) / NOT USED
Set up the 2 position for scan function. If a selected preset is not defined, ‘UNDEFINED’ will be displayed as shown below.

Scan Setup

Scan No. 1
1st POS. PRESET 1
2nd POS. NOT USED
Scan Speed UNDEFINED

Scan Speed 1/SEC ~ 180/SEC
Sets the scan speed.

Clear Scan CANCEL / OK
Deletes the current scan data.
3  OSD - FUNCTION SETUP > PATTERN SETUP

1. FUNCTION SETUP
   - <PRESET SETUP>
   - <SCAN SETUP>
   - <PATTERN SETUP>
   - <GROUP SETUP>
   - <SCHEDULE SETUP>

   BACK EXIT

   Press Near/Enter Key

2. PATTERN SETUP
   Pattern function is that a camera memorizes the path (mostly curve path) by joystick of controller for assigned time and revives the path exactly as it memorized.

   4 patterns are available and max. 1000 communication commands can be stored in a pattern.

   PATTERN NO. 1 ~ 4
   Select pattern number to edit. If a selected pattern number is not defined, 'UNDEFINED' will be displayed under selected pattern number.

   CLR PATTERN CANCEL / OK
   Deletes data in the current pattern.

   <EDIT PATTERN>
   Starts editing pattern.

3. EDIT PATTERN - Select the Position
   1. By using joystick, move to the start position with appropriate zoom.
   2. To start the pattern recording, press near or enter key.
   3. To exit this menu, press far key.

4. EDIT PATTERN - Records
   1. Move the camera with joystick of the controller or run preset function to memorize the path (mostly curve path) in a selected pattern.
   2. The total memory size and the rest memory size is displayed in the form of bar.
   3. To save data and exit, press near key.
   4. To cancel recording and delete the recorded data, press far key.

5. EDIT PATTERN
   Record the Path of the Pattern by Camera Control

   [NEAR:SAVE / FAR:DELETE] 0/0/x1/E
3 OSD - FUNCTION SETUP > GROUP SETUP

1 FUNCTION SETUP
- <PRESET SETUP>
- <SCAN SETUP>
- <PATTERN SETUP>
- <GROUP SETUP>
- <SCHEDULE SETUP>

BACK EXIT

2 GROUP SETUP SCREEN
The group function allows running sequence of presets, pattern and/or scans. Max. 8 group can be stored. Each group can have max. 20 action entities which can be preset, pattern or scan. Preset speed can be set up and the repeat number of pattern & scan can be set up in group setup. Dwell time between actions can be set up also.

GROUP NO. 1 ~ 8
Selects group number to edit. If a selected group number is not defined, ‘UNDEFINED’ will be displayed under the selected group number.

CLEAR GROUP CANCEL / OK
Deletes data in the current group.

<EDIT GROUP>
Starts editing group.

3 EDIT GROUP - Initial Screen
Press near or enter key in ‘NO’ list to start group setup.

ACTION NO. NONE / PRESET 1~128 (95 excluded) / PATTERN 1~4 / SCAN 1~8

Dwell Time 00:03 ~ 04:00 (min:sec)
Sets dwell time between function by moving joystick up/down.

OPT PRESET: 2~360 / PATTERN & SCAN: 1~255
It represents preset speed (2~360) when preset is selected. It should be the number of repetition (1~255) when pattern or scan is selected for ‘ACTION’.

4 EDIT GROUP – Select Function Sequence
Note that max. 20 functions are allowed in a group. Move cursor up/down and press near or enter key to set up.

5 EDIT GROUP - Assign Function
Set up ‘ACTION’, ‘DWELL’ and ‘OPT’. Note that selected item is displayed in reverse. Move cursor left/right to select items and move cursor up/down to change each value.
3 **FUNCTION SETUP > GROUP SETUP**

**EDIT GROUP - Selects Function Sequence**
After finishing setting up an 'ACTION', press near or enter key to one-upper-level menu. Move cursor up/down to select 'ACTION NO.' and repeat to step 4 ~ step 6 to edit the selected group.

**EDIT GROUP - Saves the Setting**
After finishing setting up all actions, press far key to exit. Then cursor should be moved to 'SAVE'. Press near or enter key to save the data.

1. **EDIT GROUP**
   - NO. ACTION NO. DWELL OPT
     1. PATTERN 1 00.0 3 1
     2. NONE
     3. NONE
     4. NONE
     5. NONE
   - SAVE [\+ MOVE CURSOR]
   - CANCEL [\+ CHANGEVAL]

2. **EDIT GROUP**
   - NO. ACTION NO. DWELL OPT
     1. PATTERN 1 00.0 3 1
     2. NONE
     3. NONE
     4. NONE
     5. NONE
   - SAVE [NEAR : EDITACT]
   - CANCEL [FAR : EDITEND]

3. Press Near/Enter Key

4. Press Far Key
3 OSD - FUNCTION SETUP > SCHEDULE SETUP

1. FUNCTION SETUP
   - <PRESET SETUP>
   - <SCAN SETUP>
   - <PATTERN SETUP>
   - <GROUP SETUP>
   - <SCHEDULE SETUP>

   BACK
   EXIT

2. SCHEDULE SETUP SCREEN
   The schedule function allows running an appropriate function like preset, scan, pattern, group, home move at designated day and time.

   EX) If you setup a rule ‘Tuesday at 9:00AM’ and Preset 1(say main gate), the camera will move to main gate every Tuesday at 9:00 AM. If you choose weekday, camera will move to main gate everyday except weekend.

   It is noted that due to the real time clock (ROOT MENU> SYSTEM SETUP>DATA/TIME SETUP), the time data will be kept regardless of blackout. The initial time and day setup is essential to proper schedule function.

   MASTER ENABLE
   ON / OFF
   Decide whether schedule function is active or not.

   DAY
   UNDEFINED / ALL / WKD / SUN ~ MON
   Set the day for scheduling.
   - Undefined: Inactivate
   - All: Applies to every day
   - WKD: Applies to every day except Saturday and Sunday
   - SUN-MON: Applies to designated day only

   TIME
   00:00 ~ 23:59 (hour:min)
   Set the time.

   ACT NO
   HOM(HOME) / PRS(Preset) 1~128 (95 excepted) / SCN(Scan) 1~8 / PTN(Pattern) 1~4 / GRO(Group) 1~8
   Set the function and no.

   ON
   ON / OFF
   Decide to make this rule effective or not.

3-5 SCHEDULE SETUP - Assign Value
   Each field (DAY, TIME, ACT, NO., ON) can be selected by Left/Right keys and the values in the field are changed using Up/Down keys.
The second rule means camera will move to preset 12 position at 7:00 on every wednesday.

- If there are rules conflicts to each other, the higher number is the higher priority has.
- If you assign undefined function, there will be no action.
- Using reserved preset, you can make various schedules. For example, PRS125 and PRS124 are DAY and NIGHT mode respectively. (Refer to Reserved Preset list in this manual.)
3 CAMERASETUP > WB SETUP

1. **ZOOMCAMERA SETUP**
   - Setup the general functions of zoom camera module.
   - **FOCUS MODE** AUTO / MANUAL / SEMIAUTO
     - Sets the camera focus mode.
     - SEMIAUTO: This mode exchanges the focus mode automatically between manual focus mode and auto focus mode. Manual focus mode activates in preset operation and auto focus mode activates when jog operation starts.
     - MANUAL: With manual mode at resets, focus data is memorized in each preset in advance and camera calls focus data in correspondence with presets as soon as camera arrives at a preset.
   - **DIGITAL ZOOM** ON / OFF
     - Sets digital zoom function to 'ON' or 'OFF'. If this is set to 'OFF', optical zoom function runs but zoom function stops at the end of optical zoom magnification.
   - **IMAGE FLICKER** ON / OFF
     - Sets if the image should be reversed or not.
   - **FLICKERLESS** ON / OFF
     - Turns on or off the flickerless function. In this function, AE mode becomes shutter priority mode and shutter speed value will be fixed to 1/100 sec.
   - **<WHITE BALANCE SETUP>**
     - Starts 'WHITE BALANCE SETUP' setup screen.
   - **<AUTO EXPOSURE SETUP>**
     - Starts 'AUTO EXPOSURE SETUP' setup screen.
   - **<SPECIAL>**
     - Starts 'SPECIAL' setup screen.

2. **WB SETUP**
   - **WB MODE** AUTO / MANUAL / ATW / AWC / OUTDOOR / INDOOR
     - AUTO: Camera performs white balance automatically.
     - Manual: R/B gain level can be set up manually.
     - ATW: Auto White Balance is performed in the wider range of color temperature than that of the 'AUTO' mode.
     - AWC: When right direction key is clicked, one time white balance is performed for current illumination condition and the value is kept.
     - INDOOR: WB will be done under assumption of Indoor illumination.
     - OUTDOOR: WB will be done under assumption of Sun light.
   - **RED ADJUST** 0 – 255
   - **BLUE ADJUST** 0 – 255
### ZOOM CAMERA SETUP
- FOCUS MODE: SEMIAUTO
- DIGITAL ZOOM: ON
- IMAGE FLIP: OFF
- FLICKERLESS: OFF
- <WHITE BALANCE SETUP>
- <AUTO EXPOSURE SETUP>
- <SPECIAL>

### AE SETUP

<table>
<thead>
<tr>
<th>Setting</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>WDR/BLC</td>
<td>ALL OFF / WDR ON / BLC ON</td>
</tr>
<tr>
<td>DAY/NIGHT</td>
<td>AUTO / DAY / NIGHT&lt;br&gt;‘AUTO’ exchanges day/night.</td>
</tr>
<tr>
<td>AE MODE</td>
<td>AUTO / MANUAL / IRIS / SHUTTER / BRIGHT</td>
</tr>
<tr>
<td>IRIS LEVEL</td>
<td>CLOSE / F1.6 / F2 / F2.4 / F2.8 / F3.4 / F4 / F4.8 / F5.6 / F6.8 / F8 / F9.8 / F11 / F14 / F16 / F19 / F22 / F28 (18 steps)</td>
</tr>
<tr>
<td>GAIN LEVEL</td>
<td>-3 / 0 / 2 / 4 / 6 / 8 / 10 / 12 / 14 / 16 / 18 / 20 / 22 / 24 / 26 / 28dB (16 steps)</td>
</tr>
<tr>
<td>SHUTTER SPD</td>
<td>x64 / x32 / x16 / x8 / x4 / x2 / 1/60 / 1/90 / 1/100 / 1/125 / 1/180 / 1/250 / 1/350 / 1/500 / 1/725 / 1/1000 / 1/1500 / 1/2000 / 1/3000 / 1/4000 / 1/6000 / 1/10000 (22 steps)</td>
</tr>
<tr>
<td>BRIGHTNESS</td>
<td>0~31 (32 steps)</td>
</tr>
<tr>
<td>SENS-UP</td>
<td>OFF / x2 / x4 / x8 / x16 / x32 / x64 / x128 / x256 / x512</td>
</tr>
</tbody>
</table>

Press Near/Enter Key

30

OSD - CAMERA SETUP > AE SETUP
SPECIAL

Sets the special function related to the image.

<table>
<thead>
<tr>
<th>DNR</th>
<th>OFF / AUTO / MANUAL (1–10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detail</td>
<td>0 ~ 15</td>
</tr>
<tr>
<td>HR (High Resolution)</td>
<td>ON / OFF</td>
</tr>
<tr>
<td>HLC</td>
<td>ON / OFF</td>
</tr>
</tbody>
</table>

- If reduces the noise caused by AGC action. If set to AUTO or MANUAL, the noise will be reduced but the ghost effect on moving objects will be increased.
- Selects if the sub screen will be displayed. Sub screen will be displayed on the bottom of the right side. Even though the main image enables the digital zoom, the sub screen will only display with maximum optical zoom.
- This mode enhances edges and produces higher definition images.
- Part where becomes brightness more than the standard value is automatically hid by mask on the video.
3 OSD - SYSTEM SETUP

1 SYSTEM SETUP

- <RELAY TYPE>
  Start RELAY TYPE setup.

- <PASSWORD>
  Start PASSWORD setup.

- <SET HOME POSITION>
  Starts SET HOME POSITION setup. See the screen 4 below.

- <SET NORTH DIRECTION>
  Starts SET NORTH DIRECTION setup.

  LANGUAGE
  ENGLISH / ESPAÑOL / FRANÇAIS / DEUTSCH
  / ITALIANO /РУССКИЙ / PORTUGU ÉS

  You can select a preferred Language of OSD display from 7 choices. After selecting a language, press near or enter key.

  - <FAN HEATER SETUP>
    Moves to FAN HEATER SETUP screen.
    - This setup is only applicable for fan/heater model.

  - <PROTOCOL/BAUDRATE>
    Moves to PROTOCOL/BAUDRATE screen.

2 RELAY TYPE SETUP

- RELAY1
  NORMAL OPEN(N.O) / NORMAL CLOSE(N.C)
  Contacts type of of 4ch. Relay out are defined.

3 EDIT PASSWORD

- Sets the 4 characters long password. If this function is set to 'ENABLE', the password is required whenever you enter OSD menu.
  - The default password is '4321' and the master password is ' - > g'.

4 SET HOME POSITION

  Home position means the origin of pan angle calculation. The value of pan angle displayed on the screen is based on this home position. Home is not effective to tilt angle.

  By using joystick, move the camera to the desired position and press near key.

  If you change the location of the home position, all horizontal location of functions such as preset, scan, pattern, group and privacy zone mask will be shifted based on the changed home position.

  If there are no setup for those functions like preset, pattern, scan, group camera will automatically move to home position after rebooting.

  If power up action is set to be on, camera will continue the function which is executed lastly after rebooting. Set Home Position?

  - When you replace the camera block or the orientation of camera is changed due to maintenance operations, it is very difficult to maintain the same pan orientation. Therefore, all function data maintain on pan orientation such as preset, scan, pattern, group and privacy zone mask are not useful any more accordingly.

  However, even in this case, you can reuse the data if you redefine set home position on the previous home position.
3 SYSTEM SETUP

5 SET NORTH DIRECTION
   By using joystick, move the camera to the desired north position and press enter (near/save).
   The direction will be displayed in the screen.
   Direction will be displayed from:
   N(North) / S(South) / E(East) / W(West) / NE(Northeast) / NW(Northwest) / SE(Southeast) / SW(Southwest).

6 FAN HEATER SETUP
   Sets the fan/heater enabled/disabled according to the temperature.
   *This menu will be displayed only for fan/heater model.
   FAN RUN TEMP 20°C ~ 80°C (68°F ~ 176°F)
   Above this temperature, the blower fan will start automatically.
   HEATER RUN TEMP -10°C ~ 20°C (14°F ~ 68°F)
   Below this temperature, the heater will be tuned on automatically.

7 PROTOCOL/BAUDRATE
   After installing the camera, you should set the communication protocol and baudrate.
   | PROTOCOL       | AUTO / PELCO-D / PELCO-P / SAMSUNG-E / PANASONIC / KALATEL / AD / SAMSUNG-S / VICON / VCLTP / HONEYWELL / BOSCH |
   | Baudrate       | 2400 / 4800 / 9600 / 19200 / 38400 |
   - Select the appropriate protocol.
   - If you set the protocol as ‘Auto’ protocol, camera will automatically recognize PELCO-D, PELCO-P or SAMSUNG protocol.
   - If you want to control using DVR or system keyboard, their protocol must be identical to camera. Otherwise, you can not control the camera.
   - If you change camera protocol by changing DIP switch, the change will be effective after you reboot the camera.
   BAUDRATE 2400 / 4800 / 9600 / 19200 / 38400
   Select the appropriate baud rate.
3

SYSTEM INITIALIZE

**SYSTEM INITIALIZE**

- CLEAR ALL DATA  YES / NO
  Deletes all configuration data such as display, camera, motion setup and so on.

- CLR DISPLAY SET  YES / NO
  Initializes display configuration.

- CLR CAMERA SET  YES / NO
  Initializes camera configuration.

- CLR MOTION SET  YES / NO
  Initializes motion configuration.

- CLR FUNCTION SET  YES / NO
  Deletes preset, scan, pattern, group and schedule data.

- REBOOT CAMERA  YES / NO
  Reboots zoom camera module.

- REBOOT SYSTEM  YES / NO
  Reboots speed dome camera.

---

### Initial Configuration Table

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Value</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Camera ID</td>
<td>ON</td>
<td>Display</td>
</tr>
<tr>
<td>PTZ Information</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Action Title</td>
<td>AUTO</td>
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</tr>
<tr>
<td>Preset Label</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Alarm I/O</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Date/Time</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Privacy Zone</td>
<td>Undefined</td>
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</tr>
<tr>
<td>Preset Lock</td>
<td>OFF</td>
<td>Motion</td>
</tr>
<tr>
<td>Power Up Action</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Auto Flip</td>
<td>ON</td>
<td></td>
</tr>
<tr>
<td>Jog Max Speed</td>
<td>140/sec</td>
<td>Motion</td>
</tr>
<tr>
<td>Jog Direction</td>
<td>NORMAL</td>
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<tr>
<td>Freeze In Preset</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Park Action</td>
<td>OFF</td>
<td></td>
</tr>
<tr>
<td>Preset 1~255</td>
<td>Undefined</td>
<td>Function</td>
</tr>
<tr>
<td>Scan 1~8</td>
<td>Undefined</td>
<td>Function</td>
</tr>
<tr>
<td>Pattern 1~4</td>
<td>Undefined</td>
<td>Function</td>
</tr>
<tr>
<td>Group 1~8</td>
<td>Undefined</td>
<td>Function</td>
</tr>
<tr>
<td>Schedule 1~7</td>
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<td>Function</td>
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<td>Focus Mode</td>
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<td>Camera</td>
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<tr>
<td>Digital Zoom</td>
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<tr>
<td>Image Flip</td>
<td>OFF</td>
<td></td>
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<tr>
<td>Flickerless</td>
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<tr>
<td>White Balance</td>
<td>AUTO</td>
<td></td>
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<tr>
<td>WDR/BLC</td>
<td>ALL OFF</td>
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<tr>
<td>Day/Night</td>
<td>AUTO</td>
<td></td>
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<tr>
<td>AE Mode</td>
<td>AUTO</td>
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<tr>
<td>Iris Level</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Gain Level</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>-</td>
<td></td>
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<tr>
<td>Brightness</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Sens-up</td>
<td>OFF</td>
<td>Camera</td>
</tr>
<tr>
<td>DNR</td>
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<tr>
<td>Detail</td>
<td>5</td>
<td>System</td>
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<tr>
<td>HR</td>
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</tr>
<tr>
<td>HLC</td>
<td>OFF</td>
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</tr>
<tr>
<td>Relay Type</td>
<td>Normal Open</td>
<td>System</td>
</tr>
<tr>
<td>Language</td>
<td>English</td>
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</tr>
<tr>
<td>Fan Run Temp</td>
<td>25</td>
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<tr>
<td>Heater Run Temp</td>
<td>5</td>
<td></td>
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<tr>
<td>Protocol</td>
<td>AUTO</td>
<td></td>
</tr>
<tr>
<td>Baud Rate</td>
<td>2400</td>
<td></td>
</tr>
</tbody>
</table>
4 Specifications - Dimensions of Option Brackets

1. Wall Mount Bracket
   - Unit: mm
   - Dimensions:
     - Width: 276.2 mm
     - Height: 188.7 mm
     - Diameter: 141.5 mm
     - Screw holes: 4-M4
     - Dimensions around base:
       - Width: 83.5 mm
       - Height: 112.6 mm
       - Diameter: 141.5 mm

2. Ceiling Mount Bracket
   - Unit: mm
   - Dimensions:
     - Height: 355.5 mm
     - Diameter: 141.5 mm
     - Screw holes: 4-x 7
4 Specifications - Dimensions of Option Brackets

3. Flush Mount Bracket
Unit: mm

4. Sun Shield Mount Bracket
Unit: mm

Dimensions:
- Flush Mount Bracket: 161mm x 53mm x 113mm
- Sun Shield Mount Bracket: 302mm (overall length)
## Specifications

### Camera

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image Device</td>
<td>1/4&quot; SONY Super HAD II Double Scan CCD</td>
</tr>
<tr>
<td>Effective Pixel</td>
<td>NTSC : 1028(H) x 508(V), PAL : 1028(H) x 596(V)</td>
</tr>
<tr>
<td>H. Resolution</td>
<td>Color: 600 TV Line, B/W: 650TV Line</td>
</tr>
<tr>
<td>Zoom</td>
<td>12x Optical Zoom &amp; x32 Digital Zoom</td>
</tr>
<tr>
<td>Lens</td>
<td>f = 1.6(wide) - 2.7(tele), 3.8(Wide) ~45.6 (Tele)</td>
</tr>
<tr>
<td>Min. Illuminance</td>
<td>Color: 0.5 Lux (DSS Off), 0.001 Lux (DSS On), B/W: 0.2 Lux (DSS Off), 0.0004 Lux (DSS ON)</td>
</tr>
<tr>
<td>Shutter Speed</td>
<td>NTSC : 1/60<del>100,000 sec, PAL : 1/50</del>100,000 sec.</td>
</tr>
<tr>
<td>Day &amp; Night</td>
<td>Auto / Day / Night (ICR)</td>
</tr>
<tr>
<td>Focus</td>
<td>Auto / Manual / Semi-auto</td>
</tr>
<tr>
<td>White Balance</td>
<td>Auto / Manual / ATW / AWC / Outdoor / Indoor</td>
</tr>
<tr>
<td>AGC</td>
<td>Auto / Manual / Max Gain Limit</td>
</tr>
<tr>
<td>WDR</td>
<td>On / Off</td>
</tr>
<tr>
<td>DNR</td>
<td>On / Off</td>
</tr>
<tr>
<td>Other Functions</td>
<td>System Image Flip by Installation Type</td>
</tr>
</tbody>
</table>

### Pan/Tilt

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pan Range</td>
<td>360 (Endless)</td>
</tr>
<tr>
<td>Tilt Range</td>
<td>180(Auto-Flip On), 90(Auto-Flip Off)</td>
</tr>
<tr>
<td>Pan/Tilt Speed</td>
<td>Preset: 360, Scan: 1 ~ 180/sec, Manual: 0.05 ~ 360/sec (Zoom Proportional)</td>
</tr>
<tr>
<td>Preset</td>
<td>127 Presets with Labels</td>
</tr>
<tr>
<td>Pattern</td>
<td>4 Patterns</td>
</tr>
<tr>
<td>Scan</td>
<td>8 Scans</td>
</tr>
<tr>
<td>Group</td>
<td>8 Groups (Max. 20 Entities per Group)</td>
</tr>
<tr>
<td>Other Functions</td>
<td>Image Auto Flip, Auto Parking, Power-up Action &amp; etc.</td>
</tr>
</tbody>
</table>

### General

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video Out</td>
<td>BNC (VBS 1.0 V)</td>
</tr>
<tr>
<td>Sensor In/Out</td>
<td>Built-in 2 Input / 1 Output</td>
</tr>
<tr>
<td>Material</td>
<td>Body: Aluminum Die-casting, Clear Bubble: Polycarbonate</td>
</tr>
<tr>
<td>Approvals</td>
<td>FCC, CE, IP66, RoHS</td>
</tr>
<tr>
<td>Power</td>
<td>Dual Voltage: DC 12V, AC 24V / 10W</td>
</tr>
<tr>
<td>Housing</td>
<td>Vandal Proof Structure, White Pearl Color</td>
</tr>
<tr>
<td>Weight</td>
<td>Net: 1.9 Kg, Package: 3 Kg</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-10 ~ 50 C (14 ~ 122 F)</td>
</tr>
</tbody>
</table>

### With Sunshield Mount Type (Heater Model)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>Weather Proof, Vandal Proof Structure, White Pearl Color</td>
</tr>
<tr>
<td>Weight</td>
<td>Net: 2.5 Kg, Package: 3.5 Kg</td>
</tr>
<tr>
<td>Operating Temp.</td>
<td>-45 ~ 50 C (-49 ~ 122 F)</td>
</tr>
</tbody>
</table>