TVC-FA301N

Full HD Motion Video

User Manual

Ver 3.06
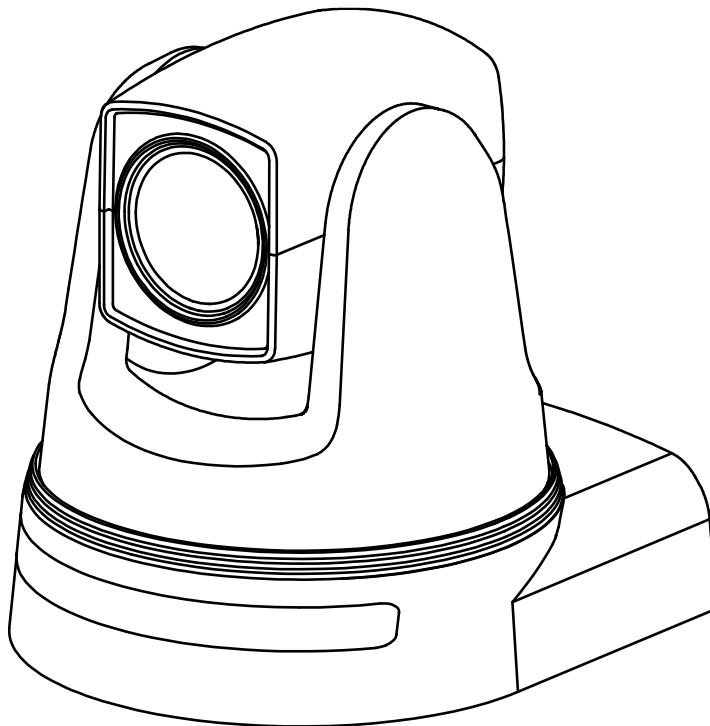
GOOD DESIGN
산업통상자원부선정

TVLogic

Contents

Caution

	Caution	
⚡	Don't open. There may be electric	⚠

<Cautio	To avoid the risk of electric shock, do not arbitrarily open the cover or disassemble the product. There are no user serviceable replacement parts. Get service from qualified service personnel.

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

<Caution	**To reduce the risk of fire or electric shock, do not expose this product to rain or moisture.**

Important Important Safeguard

◆**Read all of the safety and operating instructions before using the product.**

◆**Save these instructions for future reference.**

◆**Do not use attachments or accessories unless recommended by the appliance manufacturer as they may cause hazards, damage product and void warranty.**

◆**Do not use this product near water or moisture.**

◆**Do not place or mount this product in or on an unstable or improperly supported location.**

◆**Improperlyinstalledproductmayfall,causingseriousinjurytoachildoradult,anddamagetotheproduct.Useonlywithamountingdevicerecommendedbythemanufacturer,orsoldwiththeproduct.Toinsurepropermounting,followthemanufacturer'sinstructionsanduseonlymountingaccessoriesrecommendedbymanufacturer.**

◆**This product should be operated only from the type of power source indicated on the marking label.**

Precautions

◆**Before using, make sure power supply and others are properly connected.**

◆**While operating, if any abnormal condition or malfunction is observed, stop using the camera immediately and then contact your local dealer.**

◆**Do not disassemble or tamper with parts inside the camera.**

◆**Do not drop or subject the camera to shock and vibration as this can damage camera.**

◆**Care must be taken when you clean the clear dome cover. Especially, scratch and dust will ruin your quality of camera.**

◆**Do not install the camera in areas of extreme temperature, which exceed the allowable range.**

◆**Avoid installing in humid or dusty places.**

◆**Never expose the camera to rain and water.**

◆**Avoid installation in a place with radioactivity. It may cause a malfunction of the part.**

◆**Avoid installation in locations with strong magnetic fields or electrical signals.**

◆**Avoid installing in places where the camera would be subject to strong vibrations.**

Laser Beam Caution

 ◆ **Laser beam can damage CMOS. When shooting a scene where laser beam is involved, do not let the beam contacts the CMOS directly.**

Introduction

Features

Optical x20/30 ZOOM Lens

1/2.8 inch, 2.14 mega pixels "Exmor" CMOS Sensor installed
Including digital x12 zoom, enables you to reach up to x360(TVC-FA301N)

Full HD Output Format

Various format of HD video output is available, and if you select CVBS. down-graded (squeezed) video source will be sent out.
※ For the stable use of CVBS, we recommend using P series of output format.

1080p	60/59.94/50/30/25
1080i	60/59.94/50
720p	60/59.94/50/30/25

Simultaneous Output Video Interface

Various output is available such as 3G-SDI, HDMI, DVI-I, CVBS, and for multi-monitoring, simultaneous output is supported.

Various Protocol & Communication

VISCA	RS232,RS422
PELCO D/P	RS485

IR CUT-Filter

In order to improve the sensitivity by keeping the light absorption time longer at low light level such as at night, Slow shutter function and Day & Night switching function are provided so that users can select color change according to illumination.

Smart Flip Function

This function extend the shooting range by setting the camera to flip the image automatically when it tilts over 90°.
→ When Smart Flip function is enabled, F letter will be shown in the display.

Massive Presets & Auto Pan/ Tilt Setup Function

Max 225 assignable presets are supported to save various settings. Also, the CCTV functions like Swing, Pattern, and Group functions are available for novice users to make stable pan / tilt operation through preset values.
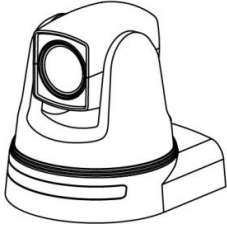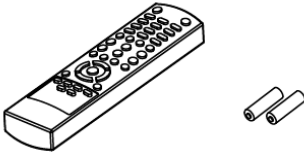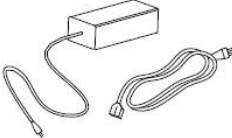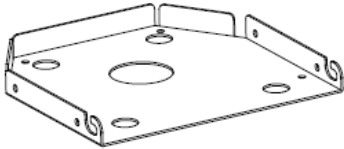
OSD(On Screen Display) Menu Support

Enables you to edit detailed settings using the OSD menu.

※ Refer to Page 45 "Menu Structure" to check the menu tree.

Products&Accessories

● **Basic Components**

Camera	**IR remote (with battery)**	**Camera Bracket Bolt**
OR		
Manual	**AC Adapter**	**9P Connector**

232C to UTP Cable	

Camera Body Bracket	**Ceiling Bracket**

Ceiling -Bracket Screw	**Plastic Anchor**	**Cam body/ Ceiling Bracket Screw**

▌ Ceiling Type Bracket(ZCB-100) Installation

● **Procedure**
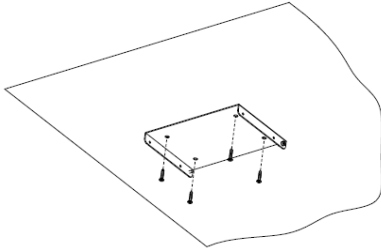
1) Use the ceiling bracket and the screws(4EA) to fix it on the ceiling where you wish to install the camera.
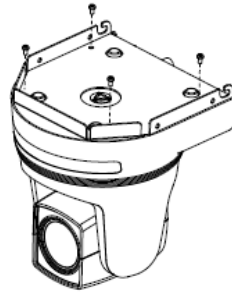
2) Use the screws(4EA) to fix it the camera body to the camera body bracket.
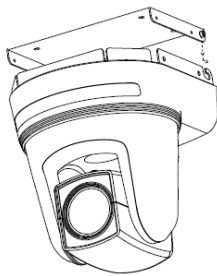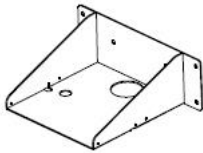
3) Put the camera body bracket to the ceiling bracket using the cam body/ceiling bracket screws.(4EA)
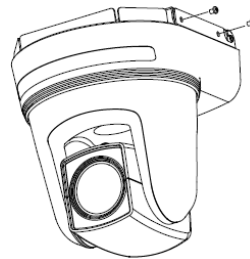
4) To secure the camera, assemble provided screws on all four sides.

Wall Mount Bracket (ZWB-100) Installation

- **ZWB-100 Components(Optional)**

Wall mount bracket

Wall mounting screws	Plastic Anchor	Cam body/ Ceiling Bracket Screw

- **Installation Instruction**
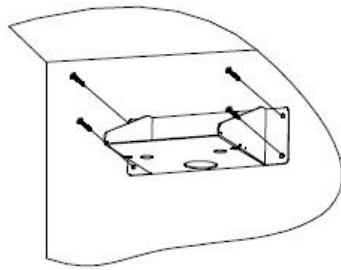
1) Use the bracket and the screws(4EA) to fix it on the wall where you wish to install the camera.
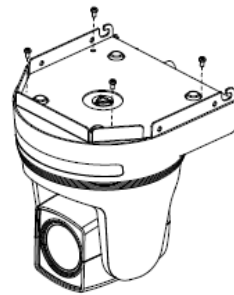
2) Fix the bracket to the camera body using the camera body bracket and screws (4EA).

3) Put the camera body bracket to the wall bracket using the cam body/ceiling bracket screws. (4EA)
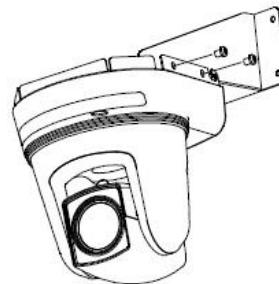
4) To secure the camera, assemble provided screws on all four sides.

① ② ③ ④ Communication

ADRESS[ID] PROTOCOL SYSTEM SELECT COMMUNICATION VISCA IN─RS-232C─OUT RS-422/485

R VIDEO HD-SDI HDMI DVI-I 12VDC

Output Ports Power
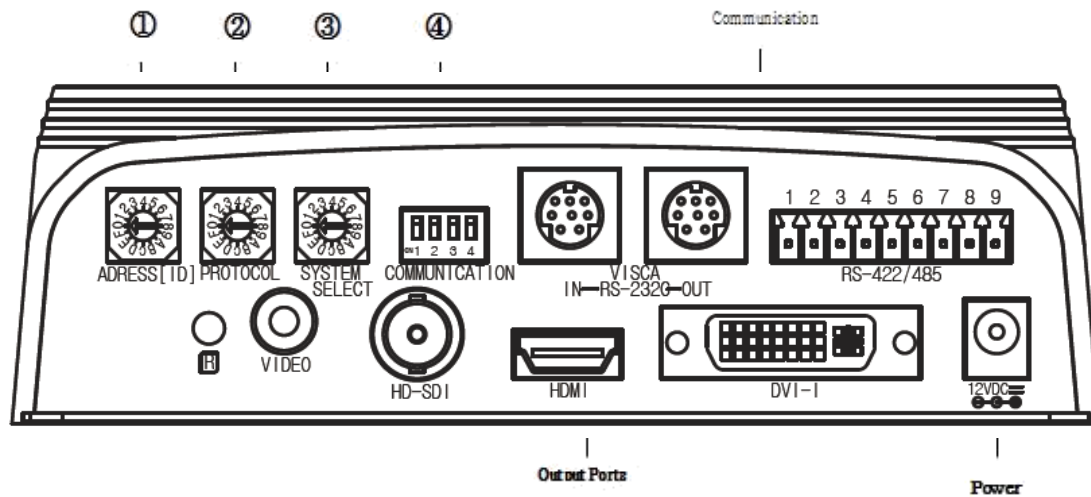
① Camera ADDRESS [ID] Setup
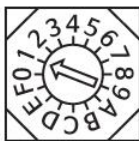
Set the camera ID by changing the switch as shown below.

- Up to 15 addresses can be set for multiple identical camera controls.

※ DO NOT USE NUMBER 0 FOR CAM ADDRESS.

- Default ID is No. 1.

When operating multiple units with the controller, set the ID switches separately.

* We recommend using Micro Screw Driver

ADRESS [1]

ADRESS [1]   ADRESS [2]

ADRESS [1]   ADRESS [2]   ADRESS [3]
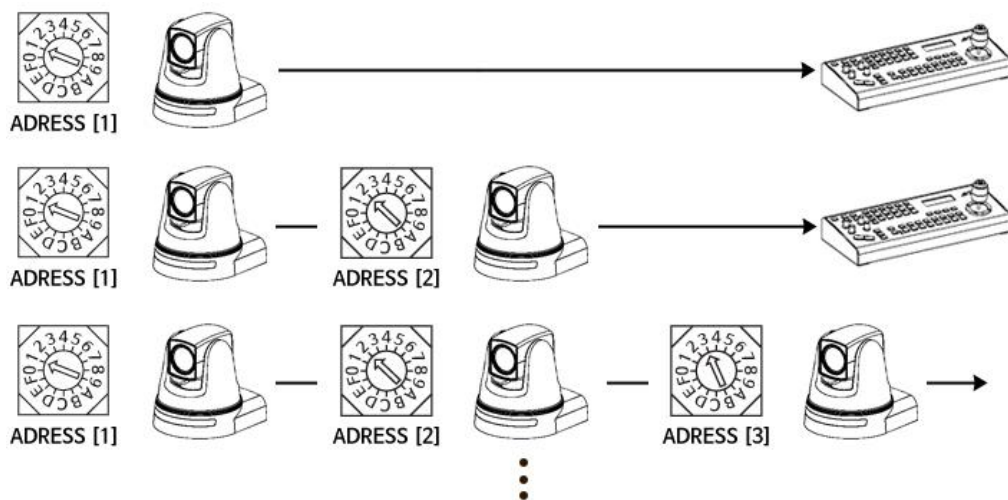
② Communication PROTOCOL Setup

Set the communication protocol by changing the switch as shown below.

[ ] : Default Setting
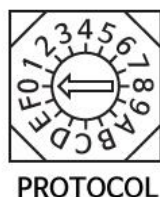
PROTOCOL

Protocol	BAUDRATE	Switch
VISCA	**9600 bps**	**0**
	38400 bps	1
PELCO-D	2400 bps	2
	9600 bps	3
	38400 bps	4
PELCO-P	4800 bps	5
	9600 bps	6

Match the protocol used by the controller.

Be sure to change the protocol when the power is off.

③ Output Video Format SYSTEM SELECT Setup

Set the output video format by changing the switch as shown below.

Be sure to change the format when the power is off.

- HDMI, HD-SDI, DVI-I and Composit output simultaneously.

※ It is recommended to set the output format to P series for stable use of Composit and CVBS.

SYSTEM SELECT

Output Video Format	Switch
1920x1080p60	0
1920x1080i60	1
1920x1080p30	2
1280x720p60	3
1280x720p30	4
1920x1080p59.94	5
1920x1080i59.94	**6**
1280x720p59.94	7
1920x1080p50	8
1920x1080i50	9
1920x 1080p25	A
1280x720p50	B
1280x 720p25	C
Reserved	D
	E
	F

④ COMMUNICATION Setup

(OFF: Upward direction / ON: Downward direction)

Set RS-422, RS-485 or RS-232C by using ON/OFF DIP switch no.1 and 2.
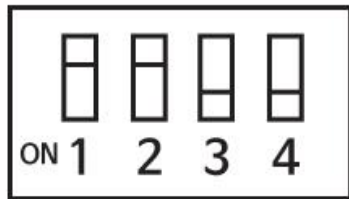
COMMUNICATION	1	2
RS-422	**OFF**	**OFF**
RS-485	OFF	ON
RS-232C	ON	OFF

By using ON/OFF DIP switch no.3(Rx) and 4(Tx), set the terminating resister as shown below.
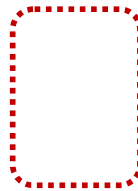
● For RS-485, **use the terminating resister when...**

When the distance b/w controller and camera is very far (1:1Connection)

If the distance between the controller and the camera is very long, a communication error may occur due to the impedance problem of the communication line. In this case, set the terminating resister to OFF in both the controller and the camera.

When using multiple cameras at the same time(1:N Connection)

If multiple cameras are connected to one controller at the same time, a communication failure may occur. In this case, set the terminating resister of the controller to ON, and set OFF on the camera located ate the very end.

※ DO NOT SET THE TERMINATING RESISTER OFF ON EVERY CAMERA

⑤ Connection

Connect a controller that sends and receives PTZ control commands.

● RS-232C VISCA Connector(Mini DIN 8Pin, Female)
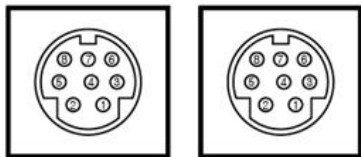
VISCA
IN-RS-232C-OUT

PIN NO.	VISCA IN	VISCA OUT
1	DTR IN	DTR OUT
2	DSR IN	DSR OUT
3	TXD IN	TXD OUT
4	GND	GND
5	RXD IN	RXD OUT
6	GND	GND
7	NOT CONNECTED	NOT CONNECTED
8	NOT CONNECTED	NOT CONNECTED

Example
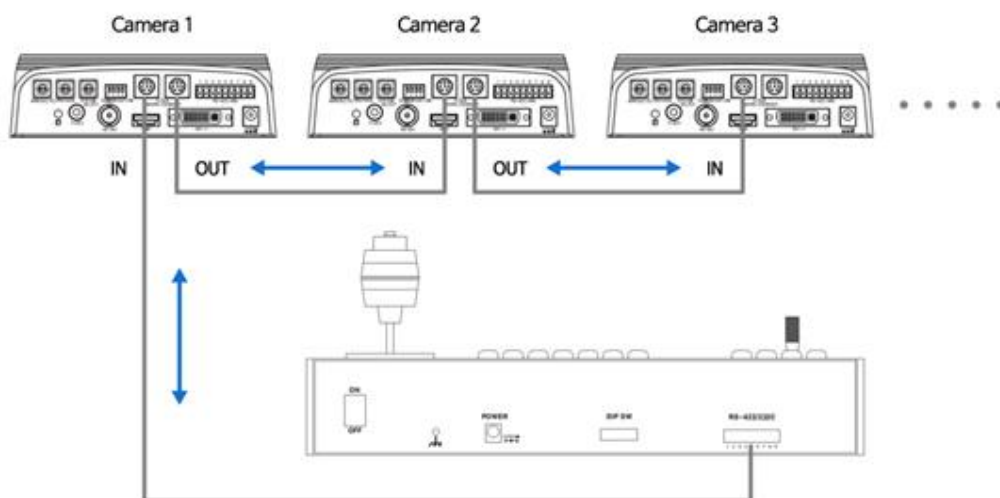
● RS-422/485 Connector

PIN NO.	RS-422	RS-485
1	TXD IN+	RXD IN+
2	TXD IN-	RXD IN-
3	RXD IN+	NOT CONNECTED
4	RXD IN-	NOT CONNECTED
5	GND	NOT CONNECTED
6	TXD OUT+	RXD OUT+
7	TXD OUT-	RXD OUT-
8	RXD OUT+	NOT CONNECTED
9	RXD OUT-	NOT CONNECTED
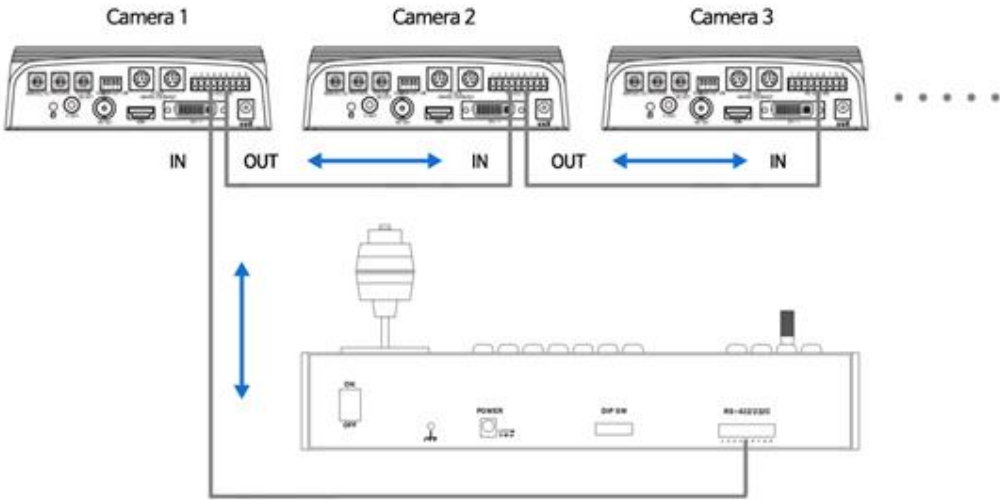
⑥ Installation Check List

● Check the cable connection before putting the power in.

● Check the ID of each camera, and select the right camera that you wish to control from the controller. You can check the ID of each camera on the display(screen) or ID setup switch.

● If the controller is eligible for various protocols, check if the protocol that was set on the camera matches its protocol.

● When you wish to change protocol and video output format, make sure that the power is turned off.

● The functions related to the controller may differ in some ways depending on the controller. If it does not work properly, please refer to the controller manual. The controller usage specified in this manual is based on PELCO and VISCA standard protocol controllers.

⑦ Power

Power rating of this product is DC 12V/1A. Check if you are using DC12V, and if the electrical load is over 1A.

Power Rating	Input power range	Current consumption
DC 12V	DC 12V ± 10%	Max 1A

⚠ ◆ In case of DC power supply, if you apply the power while the polarity is wrong, the product may be damaged.

Pay particular attention to the polarity of the power supply.

◆ When DC power connection is too long, the product may not operate due to its high voltage. We recommend the connection distance of DC power as short as possible.

◆ We are not responsible for the damage of products that was caused by wrong DC 12V connection.

Main Features

Screen Menu

While viewing the menu displayed on the connected monitor, you can change various status settings such as camera shooting conditions, system settings, information, and functions.

	IR remote	TVR-200H
GO to MENU or EXIT	DATA SCREEN	MENU , EXIT
Save	HOME/SET	Joystick button o ENTER
Cancel	BACK	BACK

* When using PELCO-D / P protocol, you can enter Preset 95, too.

PRESET

Preset is a function that saves and recalls the video status, white balance, and exposure adjusted by pan / tilt and zoom / focus.

Number of assignable presets depends on its protocol

VISCA	Preset 255
PELCO D/P	Preset 224

When using VISCA protocol, pattern, swing, group will be carried out in each range from 1 to 8.
When using PELCO D/P protocol, preset will be carried out in its range from 131 to 160 and 95.

- **Preset 95 allows you to enter MENU**

- **Preset 131~138 perform pattern 1~8**

- **Preset 141~148 perform swing 1~8**

- **Preset 151~158 perform group 1~8**

*Preset setup range may vary depends on the controller.
ex)TVR-200H can set up to 255 Presets.

You can set the label separately for each preset. The label is automatically set to Blank when you directly specify the preset position using the IR remote and the controller. If you want to change each setting value, please use the menu.
You can also run, set position, and delete the preset in the menu.

- **Interlocking operation with the camera controller(based on TVR-200H)**

Set Preset	**IR remote:** Preset button → SHIFT +Preset No. **Controller:** PRESET button + Number pad (Press simultaneously)
Run Preset	**IR remote:** Preset button → Preset No. **Controller:** PRESET button lights up → Number pad
Delete Preset	**IR remote:** Use the OSD menu **Controller:** PRESET button lights up → RESET + Number pad (Press simultaneously)

SWING
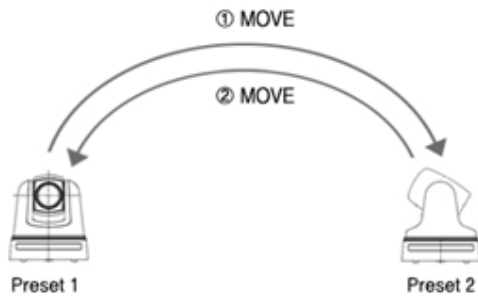
Swing function allows you to make camera move between 2 preset positions repeatedly.

When swing function activates, the camera moves from the first preset to the second preset position, and then from the second preset position to the first preset position. If you push other buttons or move joystick, swing will stop running. The operating speed can be set from 1 ° / sec to 180 ° / sec.

(* The first preset and the second preset can not be set to the same preset.)

Set swing	IR remote: Use the OSD menu, Controller: SWING + Number pad
Run swing	IR remote: SWING button → Swing No. Controller: SWING button lights up→ Number pad
Delete swing	IR remote: Use the OSD menu, Controller: SWING button lights up→ Number pad

PATTERN

Pattern operation is a function that saves Pan, Tilt, and Zoom operations performed for a certain period of time and executes them again.
If you push other buttons or move joystick, Pattern function will be inactivated.
Up to 8 patterns can be recorded, and Max. 1200 actions can be stored per pattern.

Set pattern	IR remote: Pattern No. → SHIFT+PATTERN → PT adjustment → Near Controller: PATTERN button + Number pad → PT adjustment → Joystick button or Enter button
Run pattern	IR remote: PATTERN button → Pattern No. Controller: PATTERN button lights up → Number pad
Delete Pattern	IR remote: Use the OSD menu, Controller: PATTERN button lights up → RESET + Number pad

GROUP

Group function is a function that repeatedly activates preset combinations of the preset, swing, and pattern functions.
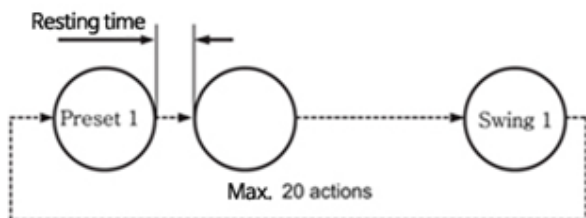
Max. eight groups can be assigned, and each group can set up to 20 actions (presets, swings, patterns). The presets set in the group can specify the operation speed, and pattern and swing can specify the number of repetitions. You can also set the resting time for stopping operation after each action.

Set group	**IR remote:** Use the OSD menu, **Controller:** GROUP button + Number pad
Run group	**IR remote:** GROUP button → Shift + Group No. **Controller:** GROUP button lights up → Number pad
Delete Group	**IR remote:** Use the OSD menu, **Controller:** GROUP button lights up→ RESET + Number pad

Other Functions

Power Up Action	This function enables to resume the last action executed before power down. Only Preset, Swing, Pattern, Group, and Preset1 actions are performed again and PTZ adjustment is excluded from this function.
Smart Flip	If the tilt angle exceeds 90 °, this function will automatically flip the image. If Smart Flip is activated, the screen displays the letter F. When this function is turned OFF, the operation range of Tilt is changed to Smart Flip Off: -30 ° ~ 95 ° and Smart Flip On: 30 ° ~ -95 °.
Parking Action	If the camera is not operated for a certain period of time, it automatically moves to the preset position. "Wait Time" can be set to a value from 1 minute to 4 hours.

Menu Function

OSD(On Screen Display)

Preset Label	Displays preset name during preset operation.
Smart Flip	Displays the image flip status by Smart Flip function.
Camera ID	Displays the current Camera ID.
Action Title	The following information is displayed in the Action Title. - Set Preset xxx: When setting the preset position - Preset xxx: When moving to the preset position - Swing x/Preset xxx: Displays swing number and preset number when Swing is activated - Undefined: When an undefined action is selected
Area Label	Displays the label of the area.
Action No;	Displays the Action number value. /Displays the Undefined number value.
IR Remote Control Information	Displays the IR remote numeric input value.
P/T/Z Information	Displays the current Pan/Tilt/Zoom/compass direction.

Main Menu

Full HD Motion Video Camera

☞<Focus/Zoom >
　<White Balance>
<AE Mode>
<Picture>
<Image>
<Motion/Action>
<Display>
<System Info.>

Exit
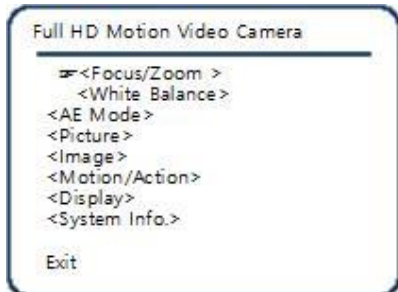
Focus/Zoom : Controls focus and zoom

White Balance : White balance setting.

AE Mode : Sets exposure value by selecting brightness, aperture, shutter speed.

Picture : Sets detailed value of exposure of the camera

Image : Sets screen setting value

Motion/Action : Sets movement such as preset swing, pattern and group.

Display : Sets whether to display the main screen OSD on each item.

System Info. : Displays the information and setting status of the product and initializes the data.

❶Focus/Zoom

Focus/Zoom

☞Focus Mode　　　Semiauto
　Focus Near Limit　0.8m
　AF Sensitivity　　Normal
　Digital Zoom　　　Off
　Zoom Speed　　　4

　Back
　Exit
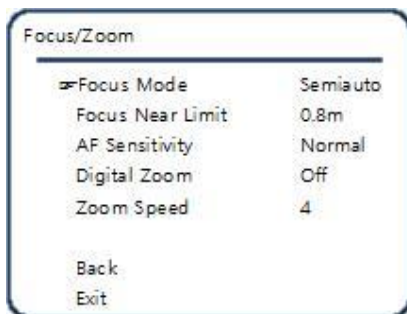
Focus Mode : Sets the focus mode of the camera. Semiauto mode is manually operated only when preset operation is activated, and Auto focus mode is automatically switched when PTZ is adjusted.
[Semiauto/ Auto/ Manual]

Focus Near Limit : Adjusts minimum focus distance when shooting.

[1cm/ 11cm/ 30cm/ 0.8m/ 1.2m/ 1.4m/ 1.65m/ 2.0m/ 2.5m/ 3.1m/ 4.2m/ 6m/ 10m/ 20m/ Over Inf

AF Sensitivity : Normal adjusts the focus at the fastest speed. Generally, Normal is used when shooting frequently moving objects. Low improves focus stability. It is stable even if the brightness of the light is low or the brightness is changing.[Normal/ Low]

Digital Zoom : Used to activate/deactivate the digital zoom function. Max. x360 is available for TVC-FA301N.[On/ Off]

Zoom Speed : Sets the zoom in / out speed. (Applicable when using IR remote) [0 ~ 7, default: 4]

❷ White balance

Calibrates the colors for better reproduction based on the exact white color under the various light sources.

```
White Balance

☞Mode            Auto
 Red Gain        211
 Blue Gain       156

 Back
 Exit
```
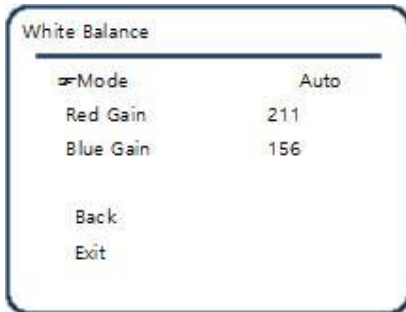
Mode : Auto and ATW are set automatically, and Sodium is set based on sodium, etc. Manual sets the camera chromaticity(Red / Blue Gain) manually.

[Auto/ Indoor/ Outdoor/ One Push/ ATW/ Manual/ Outdoor Auto/ Sodium Auto/ Sodium/ Sodium Out Auto]

※The following is activated only when the Mode is set to Manual.
   Red Gain : Adjust Red value.   [0~255, default 211]
   Blue Gain : Adjust Blue value.   [0~255, default 156]

❸ Auto Exposure

Sets the mode related to the exposure of the camera.

```
AE Mode

☞Mode              Full Auto
 ├Gain Limit       43.1dB
 └Exp Comp         Off
 Shutter Speed     1/60
 Iris Level        F1.6
 Gain Level        9.2dB
 Bright Level      16
 Back
 Exit
```
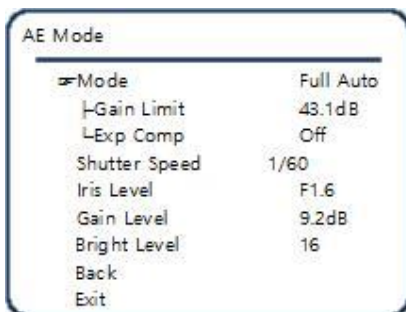
AE Mode : Sets the exposure by adjusting the aperture and shutter speed.
Full Auto automatically sets the aperture and shutter speed. Iris Pri sets the aperture manually, and Shutter Pri sets the shutter speed manually.
[**Full Auto**/ Bright/ Shutter Pri/ Iris Pri/ Manual]

Gain Limit : Sets the maximum gain level.
  [9.2dB~43.1dB default 18.5dB]

Exp Comp (Exposure Compensation): Sets the maximum brightness.[Off, -10.5dB~0dB~10.5dB]

Shutter Speed : Adjusts the shutter speed. [1/1~1/10000 default 1/60]
※ Only activates when the AE Mode is set to Shutter Pri.

Iris Level : Adjusts the aperture. [F1.6~F14, CLOSE]

※ Only activates when the AE Mode is set to Iris Pri.

Gain Level : Adjusts the Gain level. If the value is higher than the Gain Limit, the actual setting value is set to the value of the Gain Limit. [0dB~43.1dB]

Bright Level : Set using pre-stored Gain and Iris. [0~27, default 14]

❹ Picture

Configures general settings of the camera's exposure.
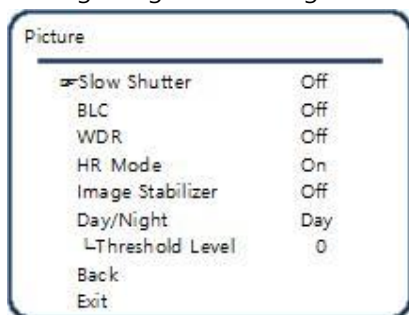
Slow Shutter : Set ON to set Slow Shutter automatically in dark environment. It operates when AE Mode is Full Auto. [On / Off]

BLC: Set the BLC (Back Light Compensation) function to make the subject and background clear at the same time when the shooting environment is strong backlight.[On/ Off]

WDR : Set WDR (Wide Dynamic Range), a backlight correction function.[On/ Off/ VE]

HR Mode (High Resolution) : Improves the outline details to provide better images.[On/ Off]

Image Stabilizer : Corrects image jitter.

    ※   When using Stabilizer function, the viewing angle will decrease.

    * Only works when vibrating level is under 10Hz.[On/ Off]

Day/Night : Set the use of IR cut filter (Infrared cut filter) to absorb more light at night.

[Day/ Night/ Auto]

Threshold Level : In Day / Night Auto mode, you can set the threshold value that changes from Night to Day in IR cut filter. [0~28]

❺ Image

Image
Image Flip	Off
Defog Mode	Off
Picture Effect	Off
High Sensitivity	Off
Noise Reduction	3
Gamma	Standard
Aperture	10
Freeze in Preset	Off
Back	
Exit	

Image Flip : Flips the current image up, down, left, and right. Set to Off when using in forward direction, and On when using in reverse direction. [On/ Off]

Defog Mode : Use when exposed to fog or smoke. [Off/ Low/ Mid/ High]

Picture Effect : When setting Neg.Art, Negative and Positive are reversed. B / W is a black and white image. [Off/ Neg.Art/ B/W]

High Sensitivity : In a dark environment, the value of Gain is set to the maximum value to make the picture brighter.
※ If the value of Gain reaches the maximum level, noise may appear in the picture. [On/ Off]

Noise Reduction : Removes noise in the image.   [Off/ 1~5 default 3]

Gamma : Sets the Gamma.   [Standard/ Straight]

Aperture : Adjusts the sharpness of the image. [0~15 default 10]

Freeze in Preset : During preset operation, stops the image before movement and restores the image after movement. [On/ Off]

❻ Motion/Action Setup
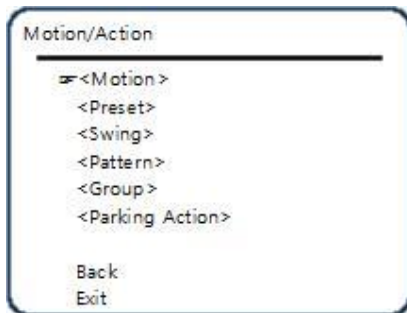
Motion : Sets general motion operation settings.

Preset : Sets general preset operation settings.

Swing : Sets general swing operation settings.

Pattern : Sets general pattern operation settings.

Group : Sets general group operation settings.

Parking Action : Sets Parking Action.

Motion

Sets general motion operation settings.
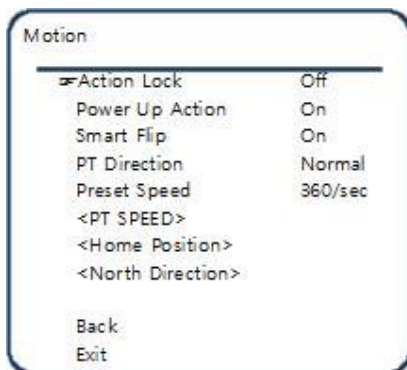
Action Lock : When Action Lock is set to On, functions such as preset, swing, and group can not be deleted or set as new in normal operation, but can only be executed. [**Off** /On]
※ This locking does not apply within the OSD menu.

Power Up Action : When power is supplied to the camera, it performs the action that was performed before power off. Only the Preset_Recall, Swing, Group, and Preset1 actions are resumed, and PTZ action is excluded from this function. [On/ Off /Preset1]

Smart Flip : If tilt angle exceeds 90 °, this function will rotate the image automatically. When image rotation is activated, the letter F is displayed on the screen. When this function is turned off, the operating range of the tilt is changed from -30 ° to 95 ° for Image Flip Off and from 30 ° to -95 ° for Image Flip On. [On/ Off]

PT Direction : When set to Normal, the operation direction and the screen movement become the same, and if it is set to Inverse, the operation direction and the screen movement direction are reversed. [Normal/ Inverse]

Preset Speed: Used to set the preset speed. [5°/sec~360°/sec]

PT SPEED : Used to set PT Max Speed and PT With Zoom functions.

 -PT Max Speed : Used to set the maximum operation speed. The operation speed is linked to the zoom magnification (PT with Zoom ON), so the larger the zoom magnification, the slower the speed. It is the same effect as the speed variable in the regulator, so you can use this function if you want fixed low speed or high speed.[5°/sec~60°/sec~360°/sec]

 -PT With Zoom : The operating speed varies depending on the zoom magnification. [On/ Off]

 Home Position : Used to select the position of Home.
  [Set position with PTZ operation. Default is Center]
 North Direction : Used to designate the North direction.
  [Set position with PTZ operation. Default is Center]

Home Position Setup
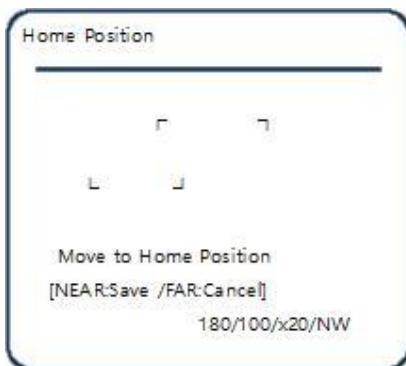
To set the Home position, move to desired Pan / Tilt, Zoom position and press the NEAR or the button on the Joystick to save.

North Direction Setup
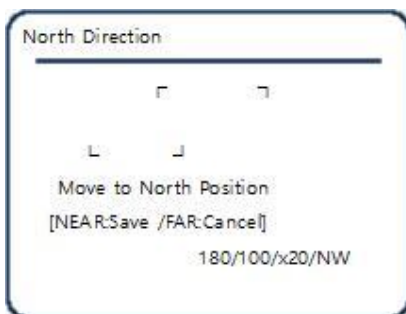
To set the North direction, move to desired Pan position and press the NEAR or the button on the Joystick to save.

Preset Setting

Preset No. : Select the preset number you want to set. If you select a predefined preset number, preset move is performed and the set label is displayed. If the selected preset is not defined, "Undefined" is displayed below the preset number. [1~255]
※ When using PELCP D/P protocol, 95 and 131~160 are excluded.

Clear Preset : Deletes all the settings of the current preset. [Cancel/ Ok]

Edit Scene : Designates the preset position in the submenu.

Edit Label : Set the preset label using this submenu, which will be displayed on the screen while the camera remains within the range defined by the preset. Up to 10 letters can be entered for a label.

Camera Mode : Used to change the image settings of the camera in the submenu.

Edit Scene- Preset Setup
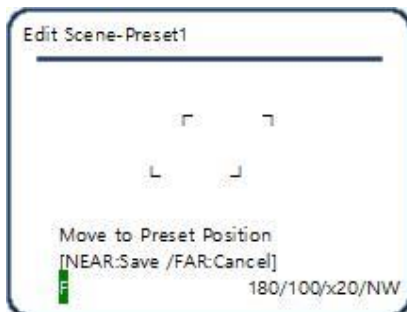
Use the IR remote or controller to move the camera to the desired position to create the desired angle of view.
Press the NEAR or the button on the top of Joystick to store the preset position.
Press FAR or BACK key to cancel the changes.
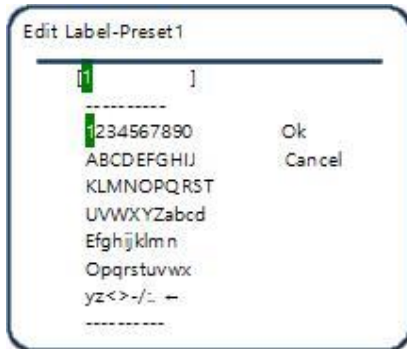
The highlighted portion of the label is the current cursor position, and the character moves to the right.

Select the letter specified in the Character Map section at the bottom of the label.

Move the cursor to the desired character position by using the IR remote or the controller and press the NEAR or joystick button to select the character.

Select " " when setting to blank, "←" to delete the current character and move the position to the left.

When the label setting is completed, move the cursor to the "Ok" position and press NEAR or the joystick button to save. Select "Cancel" to cancel saving.

Swing Setup
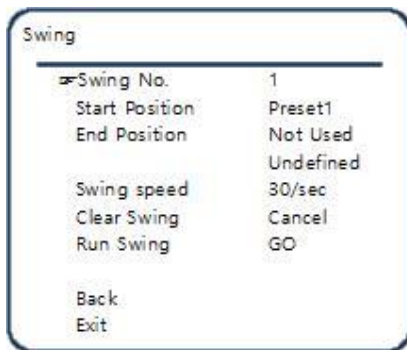
Swing No. : Select the swing number to be set. If the selected swing number is not set, "Start Used" and "End Position" are displayed as "Not Used".[1~8]

Start Position / End Position : Set two positions for swing operation. "Undefined" is displayed when a preset number that is not set is selected.

Swing operation moves clockwise from Start Position to End Position and then moves counterclockwise from End Position to Start Position. However, the two positions are not set to the same preset. PELCO-D/P[Refer to Page19] / VISCA[Swing 1~8]

Swing Speed : Used to set the swing speed. [1°/sec~180°/sec]

Clear Swing : Used to delete the current setting. [Cancel / Ok]

Run Swing : Used to activate or preview the currently set swing. Select Go to exit the menu and activate the set swing. When Preview is selected, the preview of the set swing is displayed in the submenu. [Go/ Preview]

Pattern Setup

```
Pattern
  ☞Pattern No.       1
                        Undefined
    Clear Pattern     Cancel
    <Edit Pattern>
    Run Pattern      Go


    Back
    Exit
```
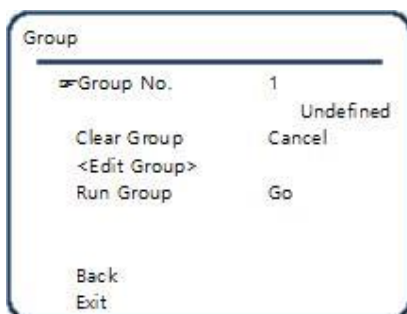
Pattern No. : Used to select the pattern number to be set. If the selected pattern is not defined, "Undefined" is displayed below the pattern number. [1~8]

Clear Pattern : Used to delete the current pattern setting. [Cancel/ Ok]

Edit Pattern : Used to start modifying the pattern in the submenu.

Run Pattern : Used to activate or preview the currently set pattern. Select Go to exit the menu and activate the set pattern. When Preview is selected, the preview of the set pattern is displayed in the submenu. [Go/ <Preview>]

Group Setup

```
Group
  ☞Group No.         1
                        Undefined
    Clear Group       Cancel
    <Edit Group>
    Run Group        Go


    Back
    Exit
```

Group No. : Used to select the group number to set. If the selected group is not defined, "Undefined" is displayed below the group number.[1~8]

Clear Group : Used to delete the current group setting. [Cancel/ Ok]

Edit Group : Used to start modifying the group in the submenu.

Run Group : Used to activate or preview the currently set group. Select Go to exit the menu and activate the set group. When Preview is selected, the preview of the set group is displayed in the sub menu. [Go/ <Preview>]

Edit Group1

No Action ### Dwell OPT

1	None
2	None
3	None
4	None
5	None

Save   [←→:Move Cursor]
Cancel   [↑↓:Change Value]

Acton ### [None/Preset/Swing] : Select the pattern number to set. If the selected pattern is not defined, "Undefined" is displayed below the pattern number.[1~8]

Dwell [0 sec.~4 min.]: Used to set the delay after completion of the action.

OPT : Sets the preset moving speed for preset actions or the number of repetitions for swing actions.

Edit Group1

☞ No Action ### Dwell OPT

1	None
2	None
3	None
4	None
5	None

Save   [NEAR: Edit]
Cancel

Edit Group1

No Action ### Dwell OPT

☞1	None
2	None
3	None
4	None
5	None

NEAR

Save   [NEAR: Edit Action]
Cancel [FAR : Edit End   ]

Edit Group1

No Action ### Dwell OPT

☞1	Preset	1 00:03 360
2	None
3	None
4	None
5	None

Save   [←→:Move Cursor]
Cancel [↑↓:Change Value]

Edit Group1

No Action ### Dwell OPT

1	Preset	1 00:03 360
2	None
3	None
4	None
5	None

FAR

☞Save
Cancel

1. Press the NEAR or joystick top button in the "No" item to start group setup.

2. You can set 20 items in 1 group. Use UP / DOWN to move to the desired item number and press NEAR or the joystick button to edit the item.

3. Set item type, delay time, and Option value. Selected items are highlighted. Use LEFT / RIGHT to move the cursor between items, and use UP / DOWN to change the setting value in each item.

4. Enter the setting value while moving each item.

5. After finishing the setting for the desired item, press the NEAR or joystick button to return to the previous step. Use the UP / DOWN keys to move to another item number and set.

6. After completing the setting for all items, press FAR or BACK key to move the cursor to 'SAVE' item. Press NEAR or the joystick button to save the setting

Parking Action Setup

This function automatically executes the specified operation when the camera is not operated during the set "Wait Time".

```
Parking Action

☞Park Enable        Off
  Wait Time         00:10:00
  Park Action       Home




  Back
  Exit
```

Park Enable : Used to set the activation of the Parking Action function. [On/Off]

Wait Time : It is displayed as "hour: minute: second" and can be set in minutes or more. [1 min.~4 hour default 10 min.].

Park Action : When Home is set, it moves to the initial position. [Home/ Preset/ Swing/ Group]

❼ Display Setup

Sets whether to display the main screen for each item.(Refer to Page22.)
When set to Auto, it is displayed only when each information is changed.

```
Display

  Display All        No
  Camera ID          Off
  PTZ Information     Auto
  Flip Status        Auto
  Action Title       Auto
  Preset Label       Auto
  IR Info.           Off
  <Area Label>
☞Back
  Exit
```
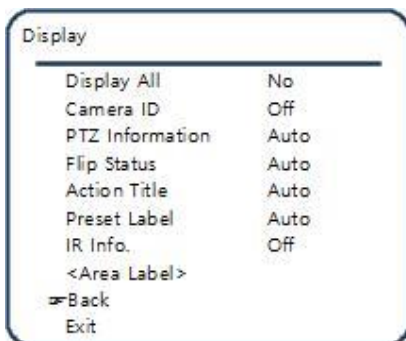
Display All : Used to display all items. [Auto/ On/ Off]

Camera ID : Used to display the camera ID.[On/ Off]

PTZ Information : Displays the current Pan/ Tilt/ Zoom/ Compass direction. [On/ Off/ Auto]

Flip Status : Displays the top, bottom, left, and right reversal status of the image. [On/ Off/ Auto]

Action Title : Displays the current preset, swing, pattern, and group information. [On/ Off/ Auto/ Semiauto]

Preset Label : Displays the predefined preset label. Displays the current preset, swing, and group information. [On/ Off/ Auto]

IR Info. : Used to set whether to display the number pad key on the IR remote. [On/ Off]

Area Label : Sets the section and the LABEL for that section. [On/ Off/ Auto]

Area Label Setup

It is a function that sets a specific area and its label to display the label on the main screen when the camera is move to the corresponding area.

Display : Displays the set Area Label. If set to Auto, it is displayed during operation. [On/ Off/ Auto]

Clear Area Label : Used to delete all areas and label settings of the currently set Area Label. [Cancel/ Ok]

Edit Scene : Used to change the area of the Area Label in the submenu.
Edit Label : Used to edit the label of the Area Label in the submenu.
※ If no area is defined, <Edit Label> menu is disabled.

> ※ **The area setting can be defined only during clockwise panning. Image Flip is automatically set to Off when area setting and it returns to the previous setting once the setup is completed.**

Edit Scene


```
Edit Scene-Area Label
─────────────────────
        ┌      ┐

        └      ┘

Pan to Start of Area Label
[NEAR:Set /FAR:Back]
              180/100/x20/NW
```
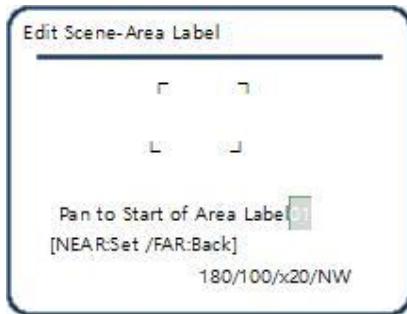
You can pan the camera only in a clockwise direction. When setting the setting area, Image Flip is automatically set to Off. After completing the setting, Image Flip will return to the original setting value. Up to 16 areas can be set.

Move to the beginning point of the first area and press NEAR or the joystick button to save.


```
Edit Scene-Area Label
─────────────────────
        ┌      ┐

     └      ┘
Pan Right Only
Pan to End of Area Label
[NEAR:Set /FAR:Back]
              180/50/x20/NW
```

Move to the ending point of the first area and press NEAR or the joystick button to save. After the setting is completed, press the FAR or BACK key to exit area setup.


```
Edit Scene-Area Label
─────────────────────



      Area Saved Successfully



[FAR:Set Continue]
              180/50/x20/NW
```

After completing the area setting, press the FAR or BACK key to return to the Area Label setting screen.


```
Edit Scene-Area Label
─────────────────────

      Error Programming Areas

      Last Pan was Pan Left


[FAR:Set Continue]
              180/50/x20/NW
```

An error message will be displayed if the left side is selected during the are setup. Press the FAR or BACK key to return to the Area Label setting screen and reset.

Edit Label

Edit Label-Area Label

☞Area Label No.   1
                    Undefined
   <Edit Area Label>   AREA 01

Back
Exit
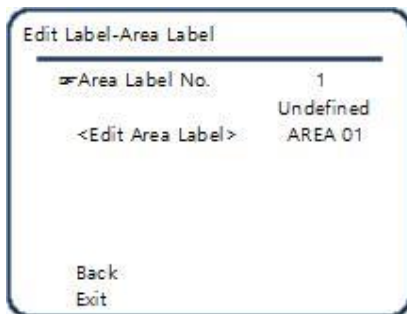
Area Label No.[1~16] : Select the area number to be set.
If the selected area is not yet defined, Undefined displays under the area number.

Edit Area Label : Used to set the area label in the sub menu. Max. 10 letters can be entered.

Area Label Setup

Edit Area Label 01

   [AREA 01   ]

   1234567890   Ok
   ABCDEFGHIJ   Cancel
   KLMNOPQRST
   UVWXYZabcd
   Efghijklmn
   Opqrstuvwx
   yz<>-/:. ←

The highlighted portion of the label is the current cursor position, and entering a letter moves the cursor to the right.

Select desired letter specified in Character Map section at the bottom of LABEL.

Use LEFT / RIGHT / UP / DOWN of the IR remote or controller to move the cursor and press the NEAR or joystick button to select the corresponding letter.

Select Space(" ") when setting to blank, Backspace("←") to delete the current letter and move to the previous letter. When the label setting is completed, move the cursor to the "Ok" position and press NEAR or the joystick button to save. Select "Cancel" to cancel saving.

❽ System Info.

```
System Info.

     Mecha F/W ver.      : 1.xxSxx
Video F/W ver.       : 1.xxSxx
System Select    : 1080p60
Protocol             : VISCA
Baudrate             : 9600bps
Camera ID            : 1
IR-Receive       : On
☞<Additional Info.>
Back
Exit
```
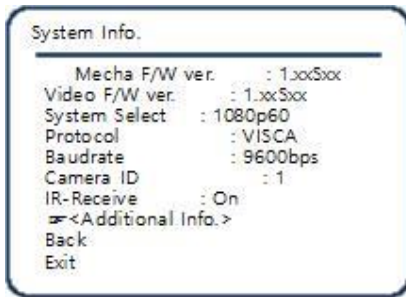
Mecha F/W ver. : Displays the version of the camera's control software.

Video F/W ver. : Displays the version of the video's control software.

System Select : Displayed the selected Video Format.

※ Check the output video format setting section.

Protocol : Displays the selected protocol.
※ Check the communication protocol setting section.

Baudrate : Displays the selected Baudrate.
※ Check the communication protocol setting section.

Camera ID : Displays the selected Camera ID.
※ Check the camera ID setting section.

IR-Receive : Used to decide whether to operate the camera with the IR remote. **[On**/ Off]
※　It is used when the camera malfunctions due to lighting equipment around the camera.
　　Only the wired IR remote can change the menu.

Additional Info : Displays the camera type, version, and pan motion information in the submenu and performs system initialization.

Additional Info.
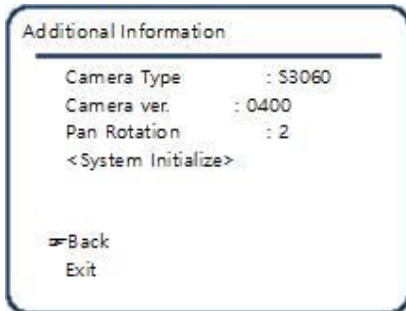
Camera Type : Displays the camera's zoom type.

Camera ver. : Displays the camera's zoom version.

Pan Rotation : Displays the number of Pan rotations.

System Initialize : Used to initialize the settings to the factory default or reboot the system.

System Initialize
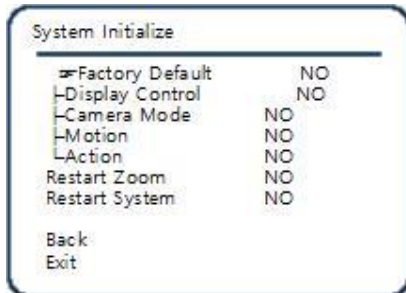
Factory Default : Initializes the display setting value, camera setting value, motion setting value, and user edit data.

Display Control : Initializes the Display setting value.

Camera Mode : Initializes the White and AE function.

Motion : Initializes the Motion setting value.

Action : Deletes the Preset, Swing, Group data.

Restart Zoom : Reboots the Zoom camera.

Restart System : Reboots the product.

IR Remote Control

POWER

1 — ⏻

2 — MENU

3 — PRESET SWING PATTERN GROUP

4 —
1	2	3
4	5	6
7	8	9
+10	0	+100

5 — +10, +100

FOCUS   P/T SPEED

6 — CAM

7 — AUTO

8 — − +

9 — NEAR FOCUS FAR

10 — + SPEED − / TELE ZOOM WIDE

11 — (direction arrows)

12 — HOME / SET

13 — BACK

WHITE BALANCE

14 — AUTO ONE PUSH ONE PUSH AWB

15 — SHIFT

AUTO EXPOSURE

16 — AUTO IRIS UP DOWN
GAIN
UP DOWN Fn1 Fn2

DISPLAY

17 — AUTO ON OFF Fn3

DIRECTION

18 — IMAGE FLIP

19 — L/R

20 — P/T RESET

21 — PTZ ON OSD
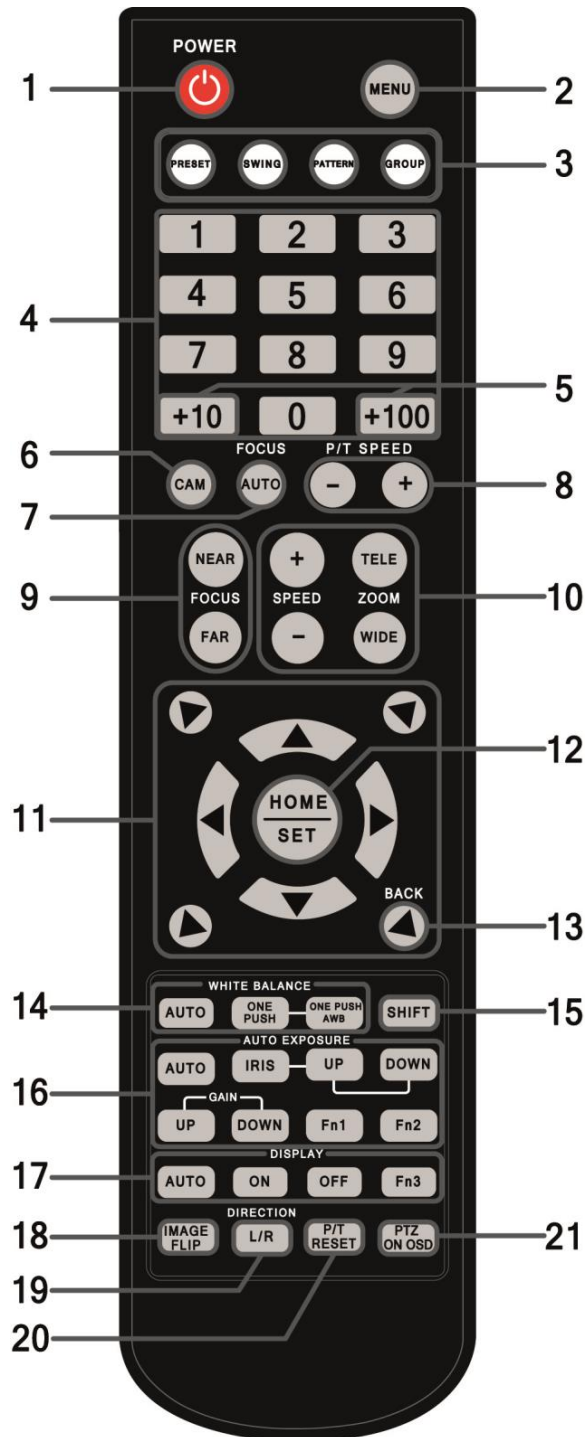
1. POWER : Turn On/ Off the camera

2. MENU : Enter menu or exit menu.

3. PRESET/SWING/PATTERN/GROUP : Select to operate, set, or save.

4. Number pad(0~9)

 - Used to set the camera ID to be controlled with the CAM button.

 - Used to select a number for operating, setting, or saving the selected preset, swing, pattern, and group.

 - Only when PRESET is selected, the range(BANK) of PRESET is selected with the +10 or +100 buttons.

5. +10/ +100 (BANK)

 - Used to set and operate preset function in 10 units using 0 ~ 9 number keypad.

 - For example, if you frequently use presets from 120 to 129, set the BANK to 120 and use the number keypad 0 ~ 9 to move the preset position between 120 and 129.

   ◈ BANK Setup

   1)Set range between 1~9

   ⓐ Press +10 or +100 button

   ⓑ Press 0 button on the number keypad

   2) Set range between 10~99

   ⓐ Press +10 button

   ⓑ Select a desired 10's digit number.

   ex) Set range between 30~39:   +10 → 3

   3) Set range between 100~255

   ⓐ Press +100 button

   ⓑ Select a desired 100's digit number(1,2) and 10's digit number in order.

   ex) Set range between 100~109:   +100 → 1 → 0

   ex) Set range between 130~139:   +100 → 1 → 3

6. CAM : Sets the camera ID to be controlled.

   ◈ Camera ID Setup

   ⓐ Press the CAM button for about 3 seconds.

   ⓑ Check that the LED of the PRESET button blinks for about 2 seconds and then lights up.

   ⓒ Select the ID number of the camera to be controlled.

   ⓓ Press the CAM button again.

   ⓔ Check that the LED of the PRESET button blinks and then lights down.

7. FOCUS AUTO : Sets Auto focus.

8. P/T SPEED : Changes the camera's up / down / left / right movement speed.
The speed can be adjusted from 5˚ /sec to 360˚.

9. FOCUS : It is set manually. Use the NEAR or FAR button to adjust the focus.

10. SPEED/ ZOOM : Use the TELE or WIDE button to adjust the zoom magnification.
Use + or - to change the zoom speed.

11. Up / Down / Left / Right / Diagonal : Use the arrow buttons to move pan tilt or cursor of the menu.

12. HOME/ SET : The HOME button moves the pan tilt position to the set HOME. When entering the menu, the SET button is used to set the changed values in the menu.

13. BACK : Used to enter the upper menu after entering the menu.

14. WHITE BALANCE : Change the White balance mode to AUTO or ONE PUSH.

15. SHIFT : Used to set the selected preset, swing, pattern and group.
◈ Preset, Swing, Pattern, Group Setup
ⓐ Press and hold the SHIFT button and press the number for the setting.

16. AUTO EXPOSURE : Changes the auto exposure to AUTO or IRIS mode.

17. DISPLAY : Sets the main screen OSD to AUTO, ON or OFF.

18. IMAGE FLIP : Flips the current image up, down, left, and right.

19. DIRECTION L/R : Reverses the left / right direction of camera operation.

20. P/T RESET : Used to initialize the Pan and Tilt of the camera.
Used when the direction of camera is changed due to external shock.

Controller

● **TVR-200H, controller for TVC-FA301N**
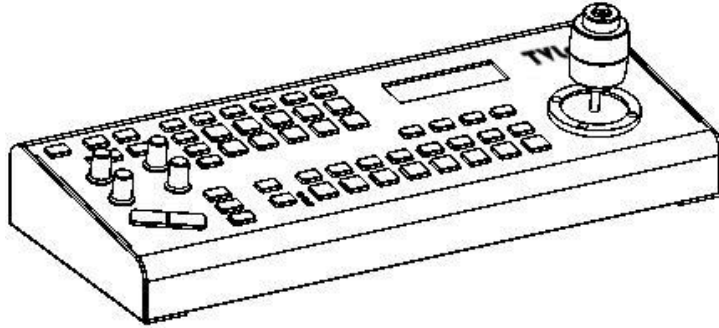
● Compact type keyboard controller
● Up to 4 cameras can be controlled
● LAN JACK support for convenient installation
● 422 communication interface
● LCD display
● Variable speed control of PAN/TILT/ZOOM using Joystick
● Easy control check through LED on each button
● Improved switch sensitivity by applying tact switch

● TVR-200H, controller for TVC-FA301N
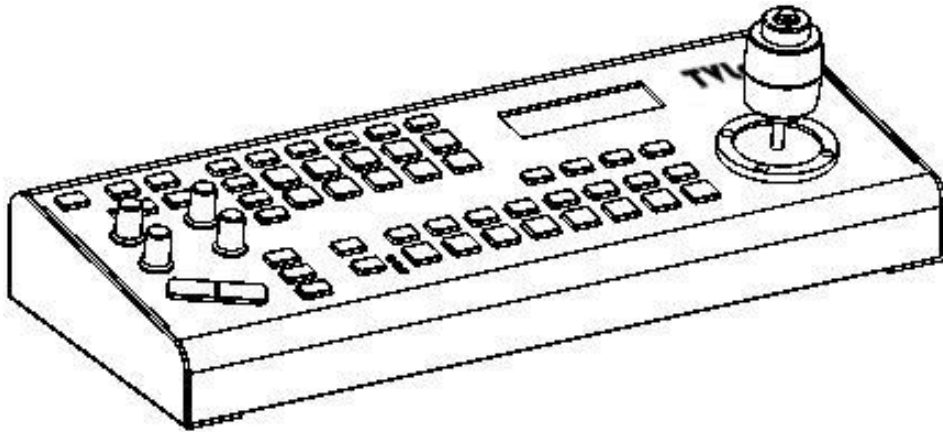
- Up to 14 Pan / Tilt / Zoom cameras can be controlled.
- Two-way remote control is supported by using RS-232C and RS-422 communication, and the camera operation status can be checked by button and LCD.
- Supports VISCA protocol.
- Available communication speeds are 9600bps and 38400bps.
- You can control the camera's Pan / Tilt speed using the joystick and speed button.
- Fine adjustment is available. (Pan: 24 levels, Tilt: 23 levels, Zoom: 16 levels).
- 4 Line Text LCD is used to check and input the menu control operation status.
- You can easily operate Preset, Pattern, Swing and Group functions by using Function key.

* For more information, refer to TVR-200H manual or http://www.tvlogic.tv.

Problem Solving

If an error occurs in the camera, check the following.

If the problem persists after checking, please contact the distributor from whom you purchased this product.

Problem	Check
The image can't be seen.	Make sure that the power of this product and the monitor are connected.
	Make sure that the video cable is connected correctly.
	Check if the product support the output video format of the monitor.
	Check that the camera is illuminating directly with fluorescent light or direct sunlight. In this case, set BLC to ON in the camera exposure setting.
	Check the shutter speed of the OSD menu.
The controller does not work.	Check the controller's RS-422/485 and RS-232C and check the DIP switch setting of this product.
	Check that the controller ID matches this product ID.
	Check that the controller match the protocol and Baudrate of this product match.
The image is dark or bright.	Check the shutter speed and Brightness, Gain Limit, and Exp Comp settings.
There is noise in the image.	Make sure that the video cable is connected correctly.
	Power and video cable lengths should not be excessively long.
	Make sure that the operating temperature of this product is within the operating temperature range.
	Check the value of Gain, Aperture and Noise Reduction.
Picture quality is abnormal.	Check if the camera lens is dirty and remove it.
	Check the white balance.
When the power is turned on, the camera moves without stopping.	Make sure Power Up Action is set.

Menu Structure

You can check the all menu structure.

Please refer to the relevant page for more detailed function and usage.

* Bold letters indicate default values.

Main menu	1st Submenu	2ND Submenu	3RD Submenu	4TH Submenu
<Focus/Zoom>	Focus Mode	Semiauto/ Auto/ Manual		
	Focus Near Limit	1cm/ 11cm/ 30cm/ 0.8m/ 1.2m/ 1.4m/ 1.65m/ 2.0m/ 2.5m/ 3.1m/ 4.2m/ 6m/ 10m/ 20m/ Over Inf		
	AF Sensitivity	Normal/ Low		
	Digital Zoom	On/ Off		
	Zoom Speed(IR)	0~4~7		
<White Balance>	Mode	Auto/ Indoor/ Outdoor/ One Push/ ATW/ Manual/ Outdoor Auto/ Sodium Auto/ Sodium/ Sodium Out Auto		
	Red Gain	0~211~255		
	Blue Gain	0~156~255		
<AE Mode>	Mode	Full Auto/ Bright/ Shutter Pri/ Iris Pri/ Manual		
	Gain Limit	9.2dB~18.5dB~43.1dB		
	Exp Comp	Off, -10.5dB~0dB~10.5dB		
	Shutter Speed	1/1~1/60~1/10000		
	Iris level	F1.6~F14, CLOSE		
	Gain level	0dB~43.1dB		
	Bright Level	0~14~27		
<Picture>	Slow Shutter	On/ Off		
	BLC	On/ Off		
	WDR	On/ Off/ VE		
	HR Mode	On/ Off		

	Image Stabilizer	On/ Off/ Hold		
	Day/Night	Day/ Night/ Auto		
	Threshold Level	0~28		
\<Image\>	Image Flip	On/ Off		
	Defog Mode	Off/ Low/ Mid/ High		
	Picture Effect	Off/ Neg.Art/ B/W		
	High Sensitivity	On/ Off		
	Noise Reduction	Off/ 1~3~5		
	Gamma	Standard/ Straight		
	Aperture	0~10~15		
	Freeze in Preset	On/ Off		
\<Motion/Action\>	\<Motion\>	Action Lock	On/ Off	
		Power Up Action	On/ Off/ Preset1	
		Smart Flip	On/ Off	
		PT Direction	Normal	
		Preset Speed	360/sec	
		\<PT SPEED\>	PT Max Speed	60/sec
			PT with Zoom	On
		\<Home Position\>	Center	
		\<North Direction\>	Center	
	\<Preset\>	Preset No.	1~255	
		Clear Preset	Cancel/ Ok	
		\<Edit Scene\>		
		\<Edit Label\>		
		\<Camera Mode\>		
		Preset Speed	360/sec	
	\<Swing\>	Swing No.	1~8	
		Start Position	Preset 1~255	
		End Position	Preset 1~255	
		Swing Speed	30/sec, 1~180/sec	
		Clear Swing	Cancel/ Ok	
	\<Pattern\>	Pattern No.	1~8	
		Clear Pattern	Cancel/ Ok	
		\<Edit Pattern\>		

		Group No.	1~8	
	<Group>	Clear Group	Cancel/ Ok	
		<Edit Group>		
	<Parking Action>	Park Enable	On/ Off	
		Wait Time	1min.~10min.~4hours	
		Parking Action	Home, Preset, Swing, Group, Pattern	
<Display>	Camera ID	On/ Off		
	PTZ Information	On/ Off/ Auto		
	Flip status	On/ Off/ Auto		
	Action Title	On/ Off/ Auto		
	Preset Label	On/ Off/ Auto		
	IR Info.	On/ Off		
	<Area Label>	On/ Off/ Auto		
<System Info.>	Mecha F/W ver.			
	Video F/W ver.			
	System Select			
	Protocol			
	Baudrate			
	Camera ID			
	IR-Receive	On/ Off		
	<Additional Info.>	Camera Type		
		Camera ver.		
		Pan Rotation		
		<System Initialize>	Factory Default	
			Display Control	
			Camera Mode	
			Motion	
			Action	
			Restart Zoom	
			Restart System	

Default Value

Menu category	Saved Presets	Setting value	Default Value
Camera setting value			
Focus Mode	●		Semiauto
Focus Near Limit	●		0.8m
AF Sensitivity	●		Normal
Digital Zoom	●		Off
Zoom Speed	●		4
White Balance - Mode	●		Auto
Red Gain	●		211 (Auto value)
Blue Gain	●		156 (Auto value)
AE Mode - Mode	●		Full Auto
Gain Limit	●		18.5dB
EXP Comp	●		Off
Shutter Speed	●		1/60
Iris Level	●		F1.6
Gain Level	●		6.2dB
Bright Level	●		15
Slow Shutter	●		Off
BLC	●		Off
WDR	●		Off
HR Mode	●		On
Image Stabilizer	●		Off
DAY/NIGHT	●		Day
Threshold Level	●		0
Image Flip	●		Off
Defog Mode	●		Off
Picture Effect	●		Off
High Sensitivity	●		Off
Noise Reduction	●		3

Gamma	●		Standard
Aperture	●		10
Freeze in Preset	●		Off
User setting value			
Preset 1~ 255			Undefined
Swing 1~8			Undefined
Pattern 1~8			Undefined
Group 1~8			Undefined
Motion setting Value			
Action Lock		❍	Off
Power Up Action		❍	Off
Smart Flip		❍	On
PT Direction		❍	Normal
Preset Speed		❍	360/sec
PT Max Speed		❍	60/sec
PT with Zoom		❍	On
Home Position		❍	Center
North Direction		❍	Center
Parking Action	Park Enable		❍	Off
	Wait Time		❍	00:10:00
	Park Action		❍	Home
Display setting value			
Camera ID		❍	Off
PTZ Information		❍	Auto
Flip Status		❍	Auto
Action Title		❍	Auto
Preset Label		❍	Auto
IR Info.		❍	Off
System Info setting value			
IR Receive		❍	On

● : Setting value is saved in preset

❍: The last set value is memorized even if the power is turned off and on again.

Specifications

| Model	TVC-FA301N
Camera	
Module	1/2.8" "Exmor" CMOS
Valid pixels	1920[H]x1080[V] (Approximately 2.38 million pixels)
Video output format	1920x1080p60, 1920x1080i60, 1920x1080p30, 1280x720p60, 1280x720p30, 720x576i50(CVBS only), 1920x1080p59.94, 1920x1080i59.94, 1280x720p59.94, 1920x1080p50, 1920x1080i50, 1920x1080p25, 1280x720p50, 1280x720p25, 720x480i60(CVBS only)
Video output	HD-SDI, HDMI, DVI-I
	CVBS[1.0V p-p Composite Signal(75 ohms)]
Zoom Scale	Optical zoom: x30, Digital zoom: x12
Lens	30x Zoom Lens [f=4.3~129 mm F1.6~F4.7]
Viewing Angle	63.7°(W), 2.3°(T)
Minimum Luminance	0.35lx (1/30 sec, High Sensitivity On) 1.4 lx (1/30 sec, High Sensitivity Off) 0.05lx (1/4 sec, High Sensitivity On) 0.19 lx (1/4 sec, High Sensitivity Off)
Day&Night	AGC, TDN(ICR)
Focus	Semiauto/ Auto/ Manual
Image Flip	On/ Off
Zoom Speed	0~7
Focus Near Limit	0.8m/ 30cm/ 11cm/ 1cm/ Over Inf/ 20m/ 10m/ 6m/ 4.2m/ 3.1m/ 2.5m/ 2.0m/ 1.65m/ 1.4m/ 1.2m
AF Sensitivity	Normal/ Low
Defog Mode	Off/ Low/ Mid/ High
High Sensitivity	Off/ On
Noise Reduction	Off/ 1~5

	Aperture	10, 0~15
	White Balance	Auto/ Indoor/ Outdoor/ One Push/ ATW/ Manual/ Outdoor Auto/ Sodium Auto/ Sodium/ Sodium Out Auto
	Program AE	Full Auto/ Bright/ Shutter Pri/ Iris Pri/ Manual
	WDR	Off/ On/ VE
	BLC	Off/ On
Pan/Tilt	Moving Angle	Pan: -172˚~ 172˚ (Non-Endless), Tilt: -30˚~210˚ (Auto Flip), -30˚~95˚
	Moving Speed	Manual: 0.002˚/sec ~360˚/sec (Zoom scale interlocked), Preset: 360˚/sec, Swing: 1˚/sec ~ 180˚/sec
	Preset setup	254 Preset (Label setup, each display setup)[PELCO], 255 Preset[VISCA]
	Swing setup	8 Swings
	Pattern setup	8 Patterns
	Group setup	8 Groups (20 movements/groups)
	Other functions	Smart-Flip, Home Position Set, Auto Parking, Power Up Action, etc.
General	Cam ID	PELCO: 1~15, VISCA: 1~14 setting
	Communication	RS-422/485, RS-232C, IR remote control
	Protocol	PELCO-D/P, VISCA
	OSD	Menu, Position etc
	Power	DC 12V ± 10% (Max 1A)
	Weight	Approximately 1.35Kg
	Operating temperature	0˚C ~ 40˚C(32˚F~104˚F)

▍ Dimension

● **PTZ Camera(TVC-FA301N)**
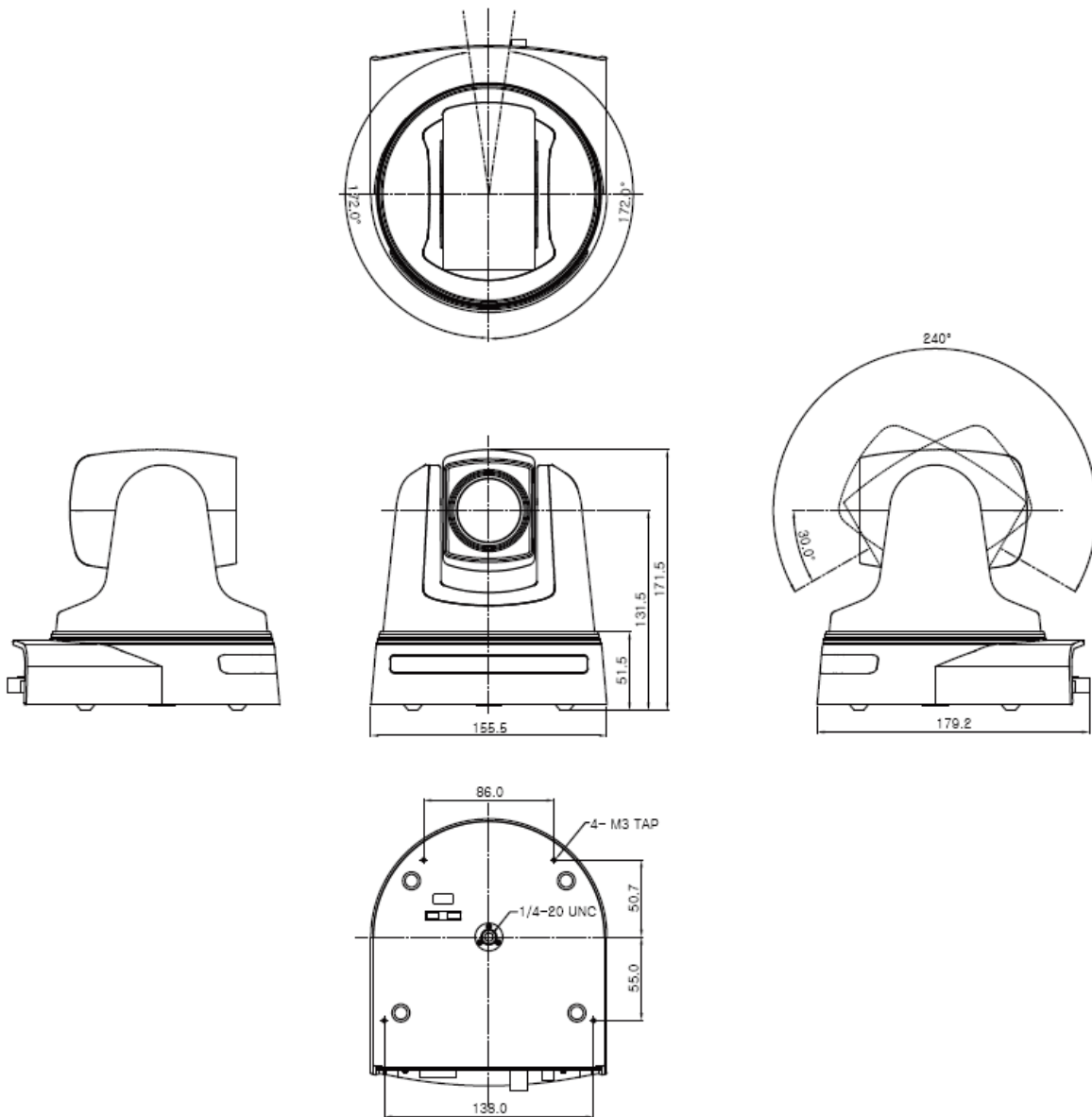
● Ceiling Bracket (ZCB-100)
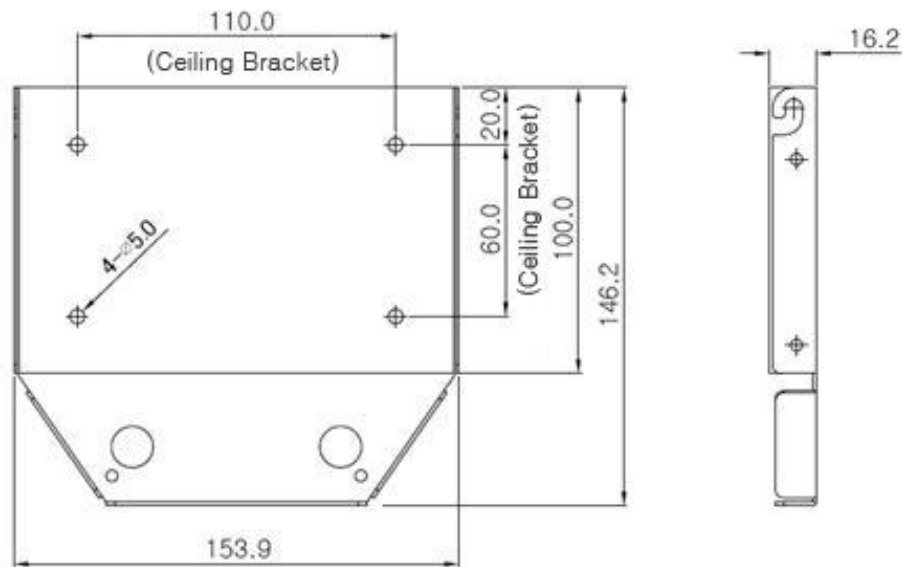
● Wall mount Bracket (ZWB-100)(Optional)
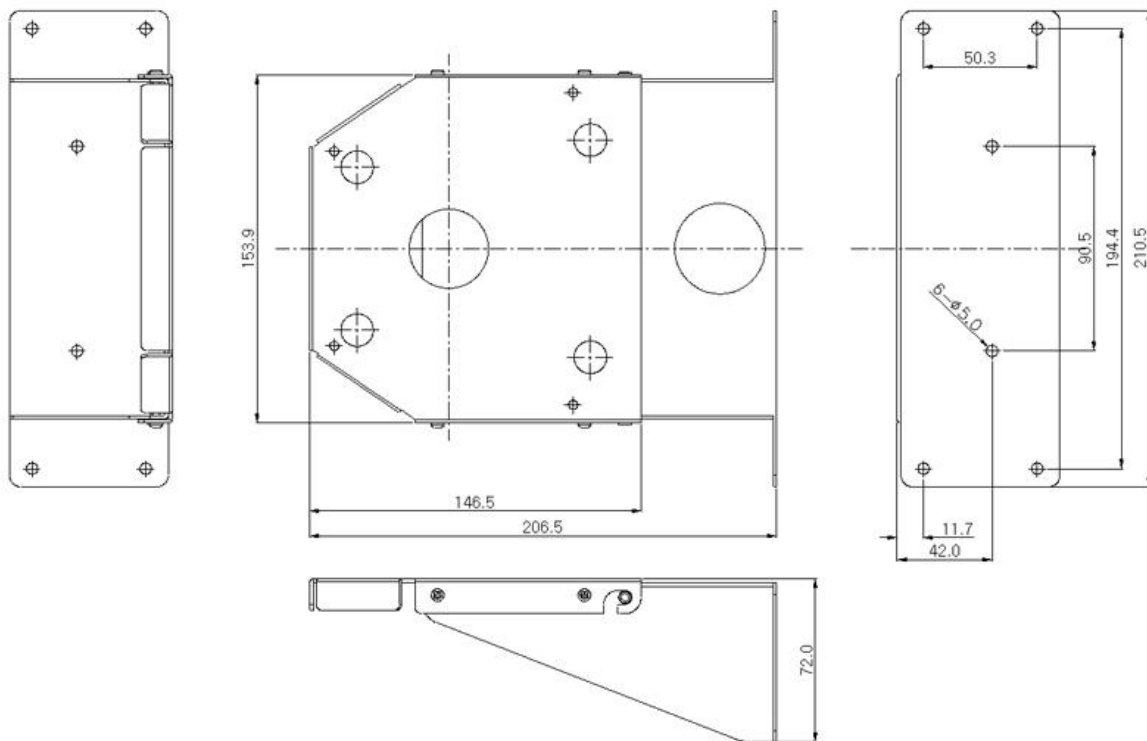
Glossary

⬩ HD-SDI(High Definition-Serial Digital Interface signal)

The digital video interface with 1.5 Gb/s transfer rate is standardized in SMPTE 292M. It supports 1080i /59.94 signals and can transmit signals up to 208M (stable distance 145.6M) when coaxial cable is connected. The advantages of HD-SDI include no signal delay, video and audio reporting, and time code signals.

   * The 3G-SDI standardized in SMPTE 424M supports transfer rate of 3.0 Gb/s and 1080p/60 signals. It can transmit signals up to 141M(stable distance 98.7M) when connecting coaxial cable.

⬩ HDMI(High Definition Multimedia Interface)

The high-speed transmission standard that can integrate and transmit digital video and voice signals. It is mainly used in home appliances. The transmission distance is about 10 ~ 15M.

⬩ DVI(Digital Video Interface)

A standard developed for transmitting digital images. It is divided into DVI-D(digital only) and DVI-I (digital and analog).

⬩ CVBS(Composite Video Blanking and Sync)

The analog video output signal used before Digital. The two color difference signals are overlapped on one channel in the luminance signal. Basically, the deterioration is severe and the image quality is not good. The longer the transmission distance, the more noise and the lower picture quality.

⬩ VISCA

The communication standard made by SONY to control PTZ camera.

⬩ PELCO D/P

The general communication standard used in CCTV field.

⬩ ONE PUSH

This function adjusts the color based on the white paper in the center of the screen to adjust the white balance. It is distinguished from the AUTO function that automatically adjusts the closest color based on the displayed image, or the ATW function that reproduces the original color of the subject, excluding the influence of ambient light. The AUTO or ATW function can achieve the proper white balance, but it is recommended to use ONE PUSH to adjust more accurately.

◆ IRIS

In the camera, IRIS refers to the aperture. Iris is an important factor in determining depth, which improves image quality and depth so that you can see both distant and near objects clearly.

◆ GAIN

It is a function to electronically amplify the signal when the light source is not illuminated enough and the image signal level is not enough. It is used when there is insufficient light on screen even if all iris is open. However, since the amplification is forcibly amplified by using the electrical characteristics, noise may occurs and may be a deterioration of image quality.

◆ Shutter Speed

This function sets the opening time of the shutter. Only when the shutter is open, the light is transmitted to the image sensor and the image is taken. For example, the lower the shutter speed is, the more vivid the dynamic image can be.

◆ Digital ZOOM

This function enlarges a part of image data by digital processing method and obtains zoom effect. Because it is software based rather than using hardware(lens), image quality deteriorates. It is commonly used as a supplement to optical zoom.

◆ BAUDRATE

It is the data transmission rate which indicates how many bits are transmitted per second to communicate. If the baudrate is 9600 bps, it means that 9600 bits are transmitted per second.

◆ GAMMA

Gamma is a figure of the response characteristics between the image brightness which is between the camera and the display receiving the input and the voltage. It is a function to ensure the contrast of the image when the signal sent from the camera is displayed on the display.

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