Distributed By:

INTEGRATED CONTROLLER KB-100

USER'S MANUAL

Modified on 01.10.2011


Please read the instructions carefully and keep this manual for future reference.

:: CONTENTS

꞉꞉ PRECAUTIONS

To prevent risk or damage while operating the KB-100, you must take note of the following information.

Please be aware of the Warnings and Cautions.
They are defined as follows.
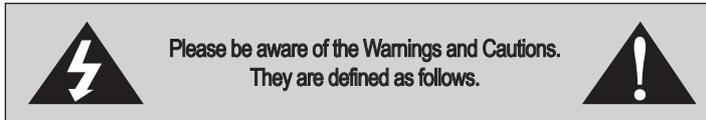
WARNING: Violation of the instructions may cause death or injury.
CAUTION: Violation of the instructions may cause personal injury or product damage.

⚡ WARNING

- Before using the product, please be sure to read the user manual.
- Install this product in a safe place that is free from external vibration.
- Do not place conductive materials (screwdrier, coin, iron, etc) or water near the product.
- Use only the indicated power supply (DC12V).
- Do not use this product near flammable substances.
- Do not touch electrical parts with wet hands.
- When the product is not operating normally, contact your seller or service center.
- Never disassemble the equipment. The Warrantor is not responsible for problems caused by disassembly done by the user.

⚠ CAUTION

- This device is recommended for indoor use only. It should not be used outdoor, where it is exposed to rain or moisture.
- Dropping the product in water may cause sever damage to the product.
- Do not use the product in humid, dusty, or sooty environments.
- Do not leave the device too hot or too cold.
- Always keep the operating temperature between 0°C and 45°C (32°F and 113°F).
- Do not place this product under direct sunlight. It will cause discoloration or damage.
- Do not subject this product to severe shock.
- Unplug the power when there is a thunder or lightning storm. The storm may cause fire or damage.

MAINTENANCE
- If the controller needs cleaning, turn off the power and wipe the surface with a soft cloth.
- Prevent contract with alcohol, benzene, and other chemicals. They may cause the surface to change color.

:: MAIN FUNCTIONS AND FEATURES

Summary

The KB-100 is a System Integrated Controller that can control up to 255 units, such as DVR, PTZ dome cameras, multiplexer, receiver, etc. It offers excellent system compatibility with support for multiple protocols. An array of buttons, easy connection, and fine control make the KB-100 a necessity in the CCTV market.

Features

- Elegant and Ergonomic Design
- Controls Up to 255 DVRs and/or PTZ Cameras
- Superior System Compatibility: Multiple Protocols Supported
- 3D Joystick Control of On-Screen Display Icon Menu
- RS485 and RS422 Compatibility
- Programmable User Interface: Preset, Tour, Pattern, Scan, Auto Pan
- User Password Support
- Battery Operation
- Low Power Consumption Design
- USB Mouse Control for DVR
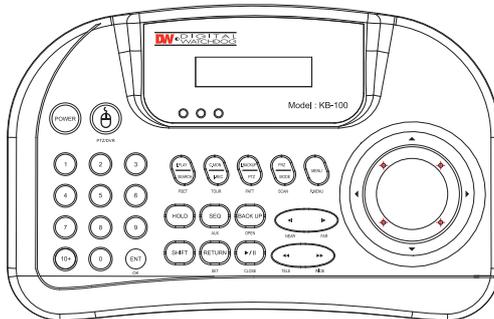
## :: CONTROLLER & ACCESSORIES

Product and Accessories

KB-100
(Controller)
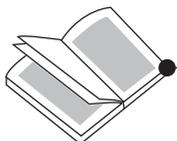
Manual
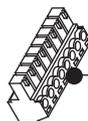
Communication
Connector

DC12V
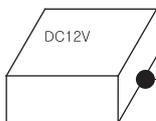
Adaptor
(Optional)
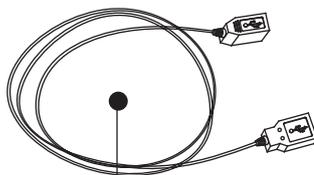
USB Cable

Changing the Battery
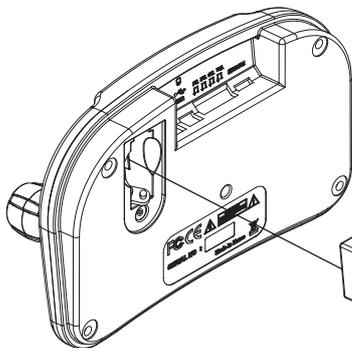
DC9V Battery (Optional)

Battery Cover

:: CONTROLLER BUTTON OVERVIEW

1. Mouse
2. Power
3. Keypad
4. Enter / Select

5. Function Keys
6. LCD Display
7. Joystick

8. Function Keys (2)
9. Function Keys (3)
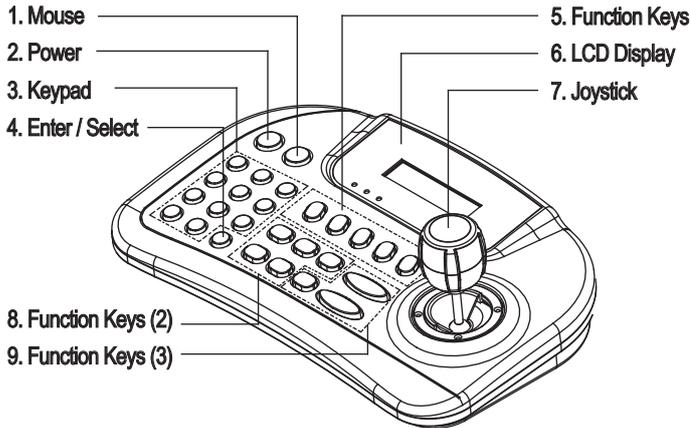
NO.	Button	Action	Function
1	MOUSE	Long Key	Switch to Mouse control mode
		Short Key	Switch to DVR or Camera control mode
2	POWER	Long Key	Power off
		Short Key	Power on
3	NUMBERS	Short Key	Enter the numbers to select a camera channel or setup DVR / Camera ID *To select channel No.16, press 10+ + 6
4	ENTER	Long Key	Confirm DVR / Camera ID
		Short Key	Enter into the selected setup menu or Select setup value
5	Function keys(1)	Long Key	[In DVR Mode] Instant Reverse Playback, Call Monitor, Instant Backup, Freeze
		Short Key	Search, Instant Recording, PTZ, Mode, Go to DVR setup menu
		Short Key	[In Camera Mode] Preset, Tour, Pattern, Scan, Go to PTZ setup menu
6	LCD Display		Shows the number entered, system state and running features
7	Joystick	UP / DOWN LEFT / LIGHT	Navigate DVR setup menu; switch channel display or mode; control PTZ camera
8	Function keys(2)	Short Key	[In DVR Mode] Hold, Sequence, Backup, Return *SHIFT: Optional Functions are used in. [In Camera Mode] AUX, OPEN, SET
9	Function keys(3)	Short Key	[In DVR Mode] Control Playback mode [In Camera Mode] CLOSE, NEAR, FAR, TELE, WIDE
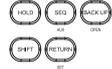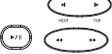
:: PART NAME & FUNCTION

1. DC12V Input
2. USB Port
3. RS-485 / RS-422 Connector
4. Program Update Port

• 5. DC9V Battery
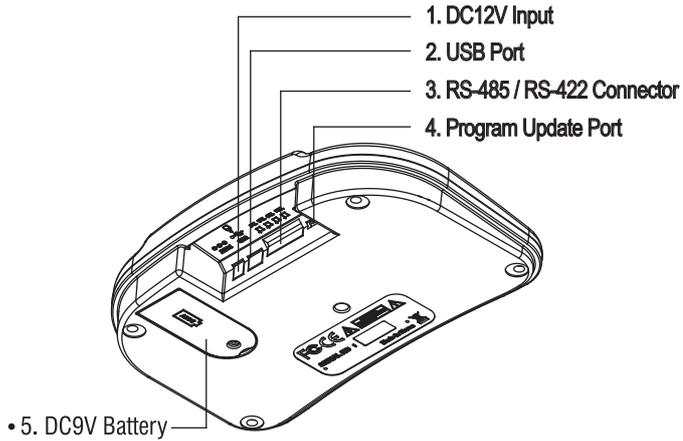
No.	Item	Function
1	DC 12V Input	Power input (DC 12V, 140mA)
2	USB PORT	USB connecting terminal
3	TRx Tx3 Tx2 Tx1 RS-485 / RS-422	DVR,Camera, Mux ..etc connecting terminal
4	Program Update Port	Program update port
5	DC9V Battery	DC9V battery part

Use the joystick to switch channel display or change display mode.
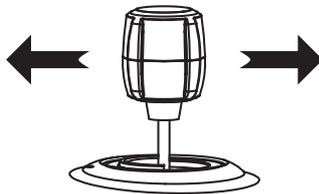
Switching Channel Display
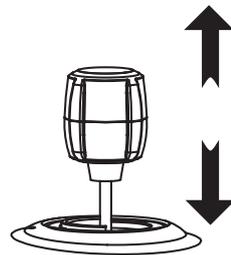
Change Display Mode

RS-485 / RS-422 Connection

Using an RS-485/RS-422 cable, connect an external device to the RS-485/RS-422 Terminal Block of the KB-100.

```
TRx   Tx3   Tx2   Tx1
-  +   -  +   -  +   -  +
```
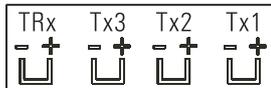
When connecting, make sure the polarity (+, -) is not changed.
Remember to check to see if the device you wish to control supports RS-485 / RS-422.

DVR Connection

Connect the USB cable to the desired Digital Video Recorder.
Press the Mouse button.

If you briefly press the button, the keyboard alternates from DVR to Camera Control Mode.

If you press and hold, mouse function is activated through the USB Port.

If you press, the following information will be displayed on the LCD Display.

```
DVR WKEY 9.6K
ID : 001
```

Transfer speed is 9600bps.
Control ID is 001.
Display ID is DVR ID.

If you want to control another DVR ID, push Number Key and ENT. ID will change.
(Example: Press and hold 3 + (ENT).)

* Constant value for each COMMAND has been set. (This function is only available after you setup a value for each command. See page 11.)

KB-100 and DVR Mouse Function Use

```
DVR WKRY 9.6
ID : 001        MOUSE
```

Press and hold the Mouse button to start the feature.
Mouse function will begin when the word "MOUSE" begins flashing on the LCD screen.

Make sure the following steps are complete before using KB-100 on your DVR.

1. DVR must be PC compatible. A device driver is required. Review your DVR's manual for further information.
2. Power ON the DVR.
3. Power ON the KB-100.
4. Setup the Mouse Speed in the Main Setup. (KB-100 2 + RETURN/SET)
5. Connect the KB-100 and the DVR.
6. If you press and hold the Mouse button, you will see the word "MOUSE" flashing on the screen.
7. Check to see if there is a mouse pointer on the screen.
8. Use the joystick to control the mouse. Use the L/R buttons as the mouse buttons.

USE 'L', 'R' button of mouse	Use mouse-pointer moving Joystick

SYSTEM CONFIGURATION

Single System Configuration

DVR PTZ PORT

| Rx+ | Rx- |

| RS485+ | RS485- |

| Tx1+ | Tx1- | Tx2+ | Tx2- | Tx3+ | Tx3- | Trx+ | Trx- |
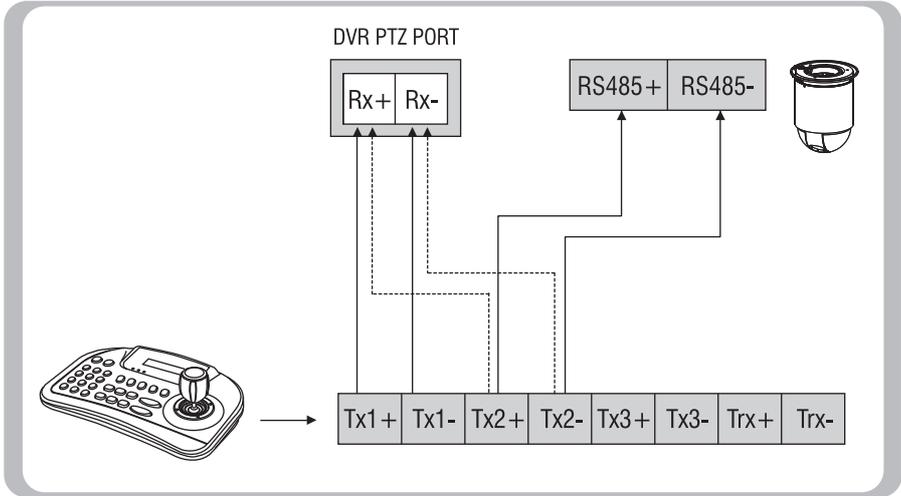
Multiple System Configuration Using Multiple DVRs.

Max16
CAMERA

Multi Port

Max16
DVR

Multi Port

Multi Port

Single System Configuration

DVR PTZ PORT

Rx+	Rx-

RS485+	RS485-

Tx1+	Tx1-	Tx2+	Tx2-	Tx3+	Tx3-	Trx+	Trx-
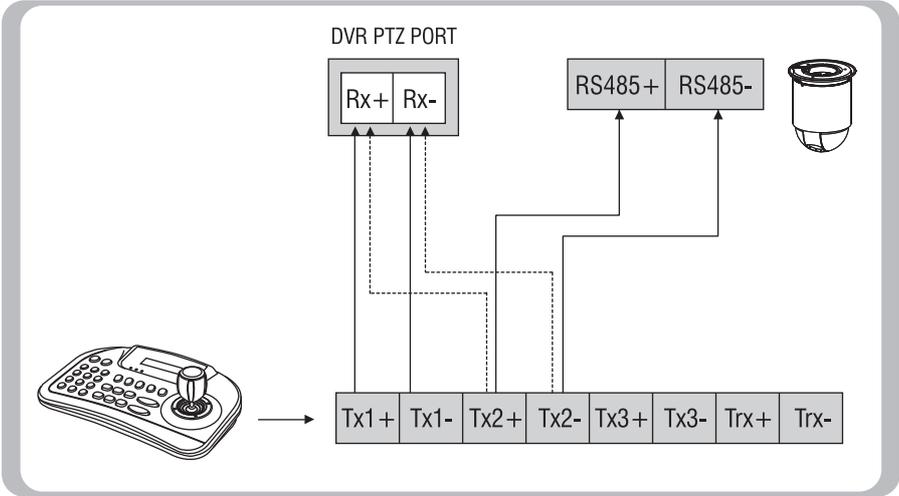
Multiple System Configuration to Control Multiple Cameras Directly

RS485+	RS485-

RS485+	RS485-

Max16 CAMERA

Tx+	Tx-	Tx+	Tx-	Tx+	Tx-	Tx+	Tx-

Multi Port

Tx+	Tx-	Rx+	Rx-

Tx+	Tx-	Rx+	Rx-

Max16 DVR

Tx+	Tx-	Tx+	Tx-	Tx+	Tx-	Tx+	Tx-

Multi Port

Tx1+	Tx1-	Tx2+	Tx2-	Tx3+	Tx3-	Trx+	Trx-
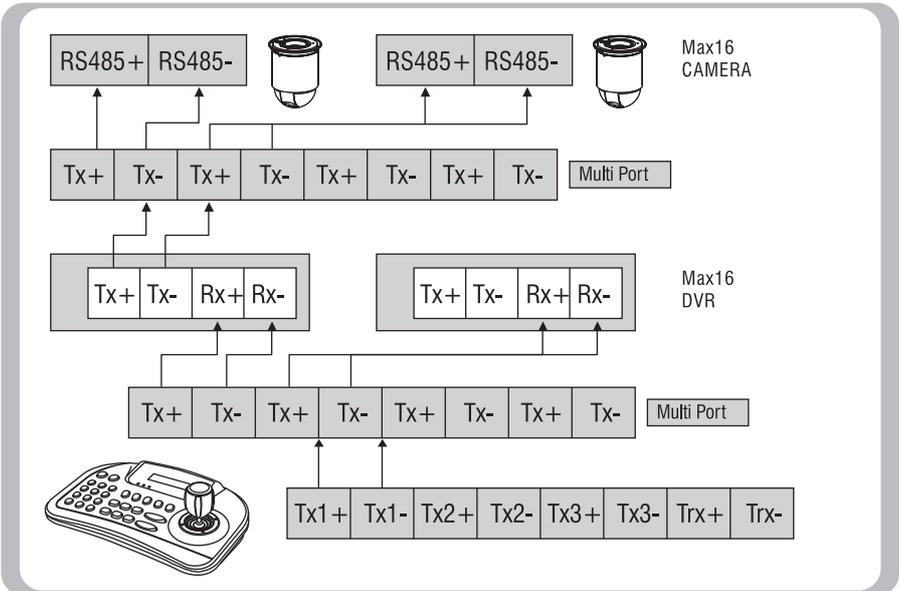
:: START

Precautions Before Start

- Before installing the keyboard, be sure to turn the power off.
- A strong shock or vibration may cause malfunction of the product.
- Avoid installing in locations near strong magnetic and radio waves, such as radio, TV, or wireless devices.
- During or after installation, make sure the area around the device is tidy.
- During instllation, make sure the product is flat on the floor, maintain proper temperature, and keep the product at least 15cm (5.9in) away from the wall.

Operating Temperature: $0^{o}C \sim 45^{o}C$ ($32^{o}F \sim 113^{o}F$).
Storage Temperature: $-10^{o}C \sim 60^{o}C$ ($14^{o}F \sim 140^{o}F$).
Input Voltage: DC12V, 140mA
DC9V (Alkaline Batteries) - Purchase Separately
Power Consumption: 20mA (LCD OFF)

:: DVR CONTROL

In order to control the DVR, first setup the SITE ID, baud rate as "9600", and the Keyboard as "KB-100" on the DVR.

1. Select the DVR mode by pressing Mouse (🖰) button.
2. Enter the DVR ID using the number keypad on the keyboard and press and hold the ENTER (ENT) button.
3. Press MENU to display the DVR menu setup and RETURN (RETURN) to exit the menu setup.
4. Press FRZ/MODE (🔲) to change the camera display.
5. Press and hold the ENTER (ENT) and SHIFT (SHIFT) buttons at the same time for 10 seconds to select another
   DVR.

:: CONTROLLER MAIN SETUP

After connecting the keyboard to power source, press the POWER (POWER) button.
The following displays will apeear on the LCD screen.

Main Menu Setup
Press [2] button and press and hold RETURN (RETURN SET) button. The Main setup menu will appear.
The default password is [0000].

Move the joystick left and right to go through the main menu settings. Menu settings can be
stored or cancelled at the Main Menu No 13.

MAIN SETUP

```
[     MAIN SETUP     ]
PASSWORD [ **** ]
```
Input Password (Factory Default Password: 0000)

```
[     MAIN SETUP     ]
1. VER : *.**
```
Software Version will be displayed.

```
[     MAIN SETUP     ]
2. DATE : 20******
```
Software Release Date will be displayed.

```
[     MAIN SETUP     ]
3. TITLE SET : ABC
```
```
[     TITLE SET     ]
DIGITAL WATCHDOG
```
(ENT) View and Edit the displayed
title when keyboard is on.

```
[     MAIN SETUP     ]
4. CONTROL  ID : NO.
```
View and Edit the controller's ID.

```
[     MAIN SETUP     ]
5. DVR SPD : 9.6K
```
View and edit the communication speed settings. Select from
range 2.4 KBPS to 57.6 KBPS.

```
[     MAIN SETUP     ]
6. COMM  : RS422
```
View and edit the communication settings for RS-422 or RS-485.

```
[     MAIN SETUP     ]
7. SLEEP : OFF
```
Setup the keyboard to turn to sleep mode to save power.
Select how long before the keyboard will turn to sleep mode:
OFF / 1 Min / 5 Min / 10 Min / 30 Min / 1 Hour

```
[      MAIN SETUP      ]
8. BUZZER : ON
```
⇐ ⇒ OFF / ON
Enable or disable buzzer.

```
[      MAIN SETUP      ]
9. BACKLIGHT : AUTO
```
⇐ ⇒ OFF / ON / AUTO
Power setting for LCD (Auto, Manual, Off)

```
[      MAIN SETUP      ]
10. MOUSE SET : HIG
```
⇐ ⇒ HIG / MID / LOW
Setup mouse speed when KB-100 is operated with DVR.

```
[      MAIN SETUP      ]
11.PASSWORD: ****
```
Password Reset (Factory Default Password: 0000)

```
[      MAIN SETUP      ]
12. FACORY SET
```
```
[ FACTORY  SET  SET ]
<NO>            YES
```
Factory Set: All data will be changed to the factory settings. Move to YES and press (ENT) .

```
[      MAIN SETUP      ]
13. SAVE/EXIT
```
```
[   SAVE  /   EXIT   ]
<NO>            YES
```
Select to save or cancel the changed setting values.

```
[      MAIN SETUP      ]
13. SAVE/EXIT
```
```
[   SAVE  /   EXIT   ]
<NO>            YES
```
Select YES or NO to save or exit.

After factory set, the Tx LED on the LCD screen will be flashing, and when it is completed flashing will stop.
After factory set, the joystick will reset the settings in the joystick calibration mode.
See page 15 for more information.
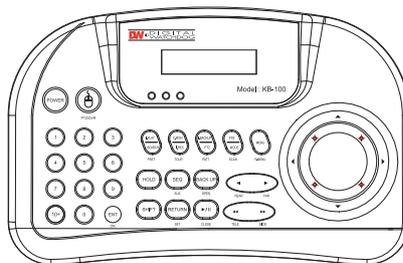
‖ PTZ CONTROL SETTING

Press [1] button and press and hold (RETURN) SET button. The default password is [0000].
The PTZ Setup Menu will appear.

PTZ SETUP

```
[ PTZ SETUP      1 ]
PASSWORD [ **** ]
```
Input Password (Factory Default Password: 0000)

⬇

```
[ PTZ SETUP      1 ]
1. ADDRESS :  001
```
⇦ ⇨ Input camera address by using joystick.
(1-255) + (ENT)

⬇

```
[ PTZ SETUP      1 ]
2. MODEL : PEL
```
⇦ ⇨ Use joystick to find the camera mode you want to control.
If your camera's model is not on the list, please select PEL-D.

⬇

```
[ PTZ SETUP      1 ]
3. PROTOCOL : PEL-D
```
⇦ ⇨ Set the protocol.

⬇

```
[ PTZ SETUP      1 ]
4. BAUDRATE : 2.4 K
```
⇦ ⇨ Set the baudrate: 2.4 KBPS - 57.6 KBPS.

⬇

```
[ PTZ SETUP      1 ]
5. PARITY : NONE
```
⇦ ⇨ Set the parity: NONE / EVEN / ODD.

⬇

```
[ PTZ SETUP   1 ]
6. PROP. : ON
```
⇦ ⇨ Set the camera speed (PROP).
Slow PTZ = ON and Fast PTZ = OFF

⬇

```
[ PTZ SETUP   1 ]
7. SAVE
```
⇨ Save changes.

⬇

```
[ PTZ SETUP   1 ]
8. EXIT
```
⇨ Exit PTZ menu.

:: JOYSTICK CALIBRATION

View and edit the joystick's movememnt.
Calibration method: Press [3] button and press and hold (RETURN SET) button.

| [JOYSTICK   CALI.]
1. PTZ OFFSET : ** | (ENT) | Show the joystick center value. |

| [JOYSTICK   CALI.]
2. PAN LEFT : *** | (ENT) | Move the joystick all the way to the left and press (ENT) button. |

| [JOYSTICK   CALI.]
3. PAN RIGHT : *** | (ENT) | Move the joystick all the way to the right and press (ENT) button. |

| [JOYSTICK   CALI.]
4. TILT UP : *** | (ENT) | Move the joystick all the way to the up and press (ENT) button. |

| [JOYSTICK   CALI.]
5. TILT DOWN : *** | (ENT) | Move the joystick all the way to the down and press (ENT) button. |

(CW)
| [JOYSTICK   CALI.]
6. ZOOM WIDE :*** | (ENT) | To zoom, extend the joystick's head and move clockwise; then, press (ENT) button. |

(CCW)
| [JOYSTICK   CALI.]
7. ZOOM TELE : *** | (ENT) | To tele, extend the joystick's head and move counterclockwise; then, press (ENT) button. |

| [JOYSTICK   SAVE]
<NO>   YES | (ENT) | Select YES or NO and press (ENT) button. |

⠿ BASIC FUNCTION & CONTROL

These features are only available for your PTZ camera. Please consult your camera manual for more information.

1. PRESET
Use can set the camera to a desired preset location.

1+PSET   2+PSET   3+PSET

PRESET setting : PRESET NO. + ⬡ 3sec
PRESET operating : PRESET NO. + ⬡ 1sec

1. TOUR
When tour function runs, camera moves from the preset assigned as the first point to the preset assigned as the last point in sequence. The camera will stay at each point for the time set on the dwell time in Tour Edit and move to the next point.

Consecutively operating

1+PSET   2+PSET   3+PSET

TOUR setting : TOUR NO. + ⬡ 3sec
TOUR operating : TOUR NO. + ⬡ 1sec

⠿ BASIC FUNCTION & CONTROL

1. PATTERN
Camera memorizes the path made by the jostick of the controller for an assigned time and revives the path exactly as it memorized.


Consecutively operating

90˚

270˚
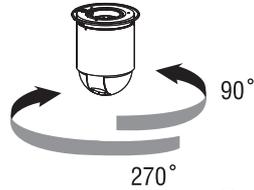
To set PATTERN: PATTERN NO. + [BACKUP PTZ PATT] 3 sec

To run PATTERN: PATTERN NO. + [BACKUP PTZ PATT] 1sec

1 + [I.BACKUP / PTZ / PATT]

1. SCAN
Camera moves between 2 points if there is no PTZ command after passing the assigned dwell time.

Consecutively operating

A point   B point

To set SCAN: SCAN NO. + [FRZ MODE SCAN] 3 sec

To run SCAN: SCAN NO. + [FRZ MODE SCAN] 1sec

1 + [FRZ / MODE / SCAN]
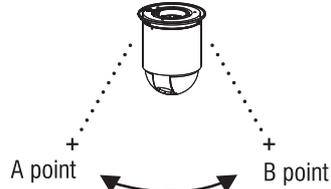
1. AUTO PAN
Camera moves between 2 preset positions.

Consecutively operating

[MENU / P.MENU]
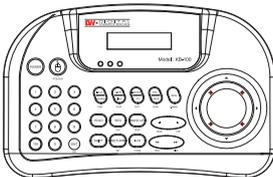
SPECIFICATIONS

MODEL	KB-100
Keyboard communication	Pan/Tilt interface : RS-485/422
	Interface : RS-485/422
	Pan/Tilt operating distance : 4700FT (1029m) on 24 AWG wire
	Protocol : Multiple (Pelco-D, Pelco-P, Etc.) (Baud rate selectable)
Connector Type Data	TERMINAL BLOCK(8p)
Keyboard button	Rubber button
	Numeric keypad and camera function key
Joystick	3-Axis Rotation, Variable speed with zoom
power	12V DC or 9V battery (battery)
Power consumtion	Max.140mA
LCD Display	Graphic display 16 character x 2 lines
Operating Temp./ Humidity	0^oC - 45^oC (32^oF - 113^oF) / 10-70% Non-Condensing
Size, Weight	280(W) x 180(D) x 100(H) / Net : 0.74kg, 1.63 lbs / Gross : 1.28kg, 2.8lbs

** The design and speicification are subject to improvement changes without prior notice.

∷ DIMENSIONS

180mm, 7.09 in

Model : KB-100

280mm, 11.0 in

100mm, 3.94 in

:: MEMO

:: MEMO