



Model Number: REJCPTZ-2

REVO AMERICA

700 FREEPORT PARKWAY SUITE 100

COPPELL TX 75019 U.S.A TEL:1-866-625-REVO(7386)

PTZ KEYBOARD CONTROLLER SYSTEM



Please read this user manual carefully before installing or operating the unit



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Content

Quick Reference Commands -----	I
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Part I Introduction

Keyboard Introduction -----	1
Keyboard Function -----	1
Buzzer -----	2
Quick Start Steps -----	2

Part II Installation and Connection

Accessories -----	4
Size -----	5
Keyboard Explanation -----	5
Power On -----	7
Keyboard Hints -----	7

Part III Keyboard Setup

Keyboard Setup -----	8
How to Set up -----	8
Menu Index -----	9

Part IV Control of PTZ Camera

Connection between Keyboard and PTZ camera -----	11
Control PTZ Camera through Keyboard -----	12
Functional Keys Introduction -----	12
PTZ Camera Control Command Index -----	15
Dome Menu Operation -----	16
Menu Operation -----	16

Part V Appendix

Appendix A RS485 Bus Basic Knowledge ----- 18

Appendix B Technology Parameters ----- 20

ATTENTION!

If using REVO REJCPTZ-2 keyboard with **NON** REVO camera please make sure Protocol and Baud Rate for keyboard and camera match.

Keyboard by default is REVOTRAX protocol and 9600 Baud.
Most PTZ Cameras from other manufactures are Pelco D and 2400 baud by default.

See Part III "Keyboard Setup" for complete instructions.

To Change settings, remove power from keyboard. While holding the Shift and F1 keys apply power back to keyboard.

Release keys when screen displays "Keyboard Set".

Press Enter to make changes to menu. Continue pressing Enter to change the value.

Pressing F1 will change the category. (Protocol, Baud, etc.)

Pressing Cancel will save and exit.

Appendix B Technology Parameters

LCD display	English
Joystick	Up/Down, Right/Left, Twist, Pushbutton.
Digital Communication	RS485 half-duplex REVOTRAX, Pelco D, Pelco P (default = REVOTRAX)
Baud rate	1200, 2400, 4800, 9600 (default = 9600)
Power supply	DC12V/1000mA
Power	4.5W

WARNING: DO NOT CONNECT THE KEYBOARD'S "COM" PORT TO ANY INTERNET PROTOCOL DEVICE OR COMPUTER NETWORK!

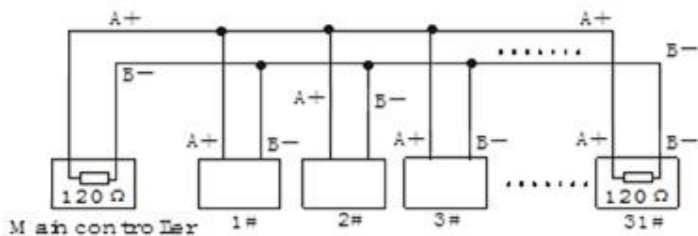
3. Element Connection and Termination Resistors:

The RS485 standard requires a daisy-chain connection between the connected elements.

For reliable operation, there must be 120 Ohm termination resistors present at both ends of the RS485 bus. (Refer to the following illustration.)

The last PTZ camera on the bus (the camera furthest from the controlling device) should have its termination resistor enabled. On most cameras, the termination resistor is enabled or disabled using a configuration switch on the PTZ camera.

Only two termination resistors are allowed to be present on any RS485 bus. The PTZ keyboard does not have a termination resistor.



4. Problems with RS485 Wiring:

RS485 elements should be daisy-chained together. The RS485 bus should connect the keyboard to camera 1, camera 1 to camera 2, camera 2 to camera 3, etc.

Quick Reference for PTZ Camera Control Commands

All directions (up/down, right/left), twist, and pushbutton functions are present on the joystick

Pressing the **【CTRL】** key acts as a turbo mode, momentarily speeding up the camera's pan and tilt functions

P/T right or left, up or down: **【Joystick】** move to right or left, up or down

Lens zoom: **【Joystick】** counterclockwise or clockwise rotation

Lens Focus: **【SHIFT】** + **【Joystick】** move to left or right

Lens Iris: **【SHIFT】** + **【Joystick】** move to up or down

Set preset: **【#】** + **【SHIFT】** + **【PRESET】**

Call preset: **【#】** + **【PRESET】**

Clear preset: **【#】** + **【SHIFT】** + **【CANCEL】** , CANCEL/OK is displayed

Run Auto Scan: **【#】** + **【AUTO】**

Run Tour: **【#】** + **【TOUR】**

Run Pattern: **【#】** + **【SHIFT】** + **【MENU】**

On Command: **【#】** + **【ON】**

Off command: **【#】** + **【SHIFT】** + **【AUTO】**

NO. + PGM+ Tour: **【#】** + **【SHIFT】** + **【TOUR】**

NO. + PGM+ Scan: **【#】** + **【ESC】**

Press **【PRESET】** to enter Preset menu

Press **【TOUR】** to enter Tour menu

Press **【MENU】** to enter Dome menu

Press **【SHIFT】** + **【MENU】** to enter Pattern menu

Press **【AUTO】** to enter Auto scan menu

Press **【SHIFT】** + **【ESC】** to enter Alarm menu

Home key: **【SHIFT】** + **【TOUR】**

Part I

Introduction

- Introduction
- Function
- Application

Keyboard Introduction

This small keyboard provides joystick and keyboard control for one or many connected PTZ cameras.

The keyboard can be used to control PTZ cameras or similar devices that use the REVOTRAX, Pelco D or Pelco P protocols. (REVOTRAX is the default protocol.) The keyboard's multi-function joystick can control Pan, Tilt, Zoom, Focus, and Iris adjustments. A twist function and a control (CTRL) button are included.

The keyboard has a built-in backlit LCD screen that displays pertinent information for easy use.

Keyboard Function

The keyboard is used to control REVO PTZ cameras (using the REVOTRAX protocol) or other PTZ cameras (using Pelco D or Pelco P protocols).

The default keyboard settings are REVOTRAX, 9600 baud rate, Camera ID= 1. The keyboard's current set-up information will be displayed on the LCD screen for two seconds immediately after each power-up.

The keyboard is equipped with one RS-485 communication port and supports

Part V Appendix

- Appendix A RS485 Bus Basic Knowledge
- Appendix B Technology Parameters

Appendix A: RS485 Bus Basic Knowledge

1. Characteristics of RS485 Bus

As specified, an RS485 bus allows half-duplex data transmission over a pair of wires having a characteristic impedance of about 120 Ohms. The maximum load capacity is 32 unit loads (this includes the main controller and the controlled equipment).

2. Transmission distances of RS485 Bus

When 24AWG (0.56mm) twisted-pair wires are used as data transmission cable, the maximum theoretical transmitting distances are as follows:

Baud Rate	Transmission Distance (Max.)
2400bps	5,906ft(1800m)
4800bps	3,937ft(1200m)
9600bps	2,625ft(800m)

If the user selects thinner cables, or installs the units in an environment with strong electromagnetic interference, or connects many devices to the RS485 Bus, the maximum transmitting distance will be decreased. To increase the maximum transmitting distance, do the contrary.

Dome Operation (Live Viewing):

Move the joystick to change the camera's view.

Twist the knob to zoom in or out

Hold **【SHIFT】** and move the joystick left or right to change the focus

Hold **【SHIFT】** and move the joystick up or down to change the camera's
Iris (light or dark exposure)

Hold **【CTRL】** and move joystick for Turbo speed

Hold **【CTRL】** and twist left or right to adjust the focus manually

half-duplex two ways communication to one or more devices.

The keyboard has a power input port for 12VDC (1000mA) operation.

Buzzer

The keyboard has a built-in buzzer that can indicate the operation of pressing keys.

The buzzer can be set ON or OFF in the keyboard's function menu.

Quick Start Steps:

1. Connect the PTZ keyboard to a PTZ camera (or cameras) using twin RS485 wiring.

See Appendix A for proper wiring information.

Ensure that the camera and keyboard each have been powered up and that the camera's video output is connected to a monitoring device (a DVR or monitor).

2. Verify that the Keyboard and PTZ camera settings match.

Make sure the PTZ camera's protocol and baud rate match the keyboard's protocol and baud rate. (Keyboard default = REVOTRAX, 9600 Baud rate.)

Each camera will have a unique ID (1, 2, 3, etc.). This ID is usually set at the PTZ camera using DIP switches or OSD menu.

Ensure that the keyboard is set to control the desired camera's ID. The keyboard's default ID is 1. To change the keyboard's command ID to control a camera with ID=2, press the **2** button on the keyboard, then **Enter**. 0002 will be displayed in the **CAM** field on the display. Any camera's ID can be entered in this way.

3. Move the Joystick, Observe Camera Motion.

If the PTZ camera's view cannot be changed with the joystick, check the wiring, protocol, Baud rate, and the camera's ID.

4. Enable The Camera's OSD (On Screen Display) Menu.

To access the menu on the PTZ camera, ensure that the keyboard's "CAM" number matches the desired PTZ camera, and press the keyboard's "MENU" button. The camera's OSD menu will appear on the video monitoring device.

Press **【TOUR】** to enter Tour menu

Press **【MENU】** to enter Dome menu

Press **【SHIFT】** + **【MENU】** to enter Pattern menu

Press **【AUTO】** to enter Auto scan menu

Press **【SHIFT】** + **【ESC】** to enter Alarm menu

Home key: **【SHIFT】** + **【TOUR】**

ESC key: **【ESC】**

Enter key: **【ENTER】**

Menu Control (Inside camera menu):

Twisting the joystick changes the alpha-numeric characters when entering naming information.

Dome Menu Operation:

Press MENU to enter the dome's OSD.

Up Joystick: Moves cursor up

Down Joystick: Moves cursor down

Twist Joystick Right: Moves cursor right, activates "Save and Exit" in some menus.

Twist Joystick Left: Moves cursor left, activates "Save and Exit" in some menus.

CTRL or Right Joystick: Selects a menu item.

ESC cancels a menu item, or functions as a "Back" command.

PTZ Camera Control command Index

Control of a PTZ camera:

All directions on the joystick are functional

Pressing the Control key acts as a turbo mode, momentarily speeding up the camera's pan and tilt functions

P/T right or left: **【Joystick】** move to right or left

P/T up or down: **【Joystick】** move up or down

Lens Zoom: **【Joystick】** twist counterclockwise or clockwise

Lens Focus: **【SHIFT】** + **【Joystick】** move to left or right

Lens Iris: **【SHIFT】** + **【Joystick】** move to up or down

Set preset: **【#】** + **【SHIFT】** + **【PRESET】**

Call preset: **【#】** + **【PRESET】**

Clear preset: **【#】** + **【SHIFT】** + **【CANCEL】** , then select **【OK】**
to clear preset

Run Auto Scan: **【#】** + **【AUTO】**

Run Tour: **【#】** + **【TOUR】**

Run Pattern: **【#】** + **【SHIFT】** + **【MENU】**

On Command: **【#】** + **【ON】**

Off command: **【#】** + **【SHIFT】** + **【AUTO】**

NO. + PGM+ Tour: **【#】** + **【SHIFT】** + **【TOUR】**

NO. + PGM+ Scan: **【#】** + **【ESC】**

When Data is 0000,

Press **【PRESET】** to enter Preset menu

Part II

Installation, Connection and Setting

- Accessories
- Size
- Introduction
- Power On
- Keyboard Hints

Installation, Connection and Setting

Before installation, please check to see that all accessories are present. If not, contact your supplier.

Accessories:

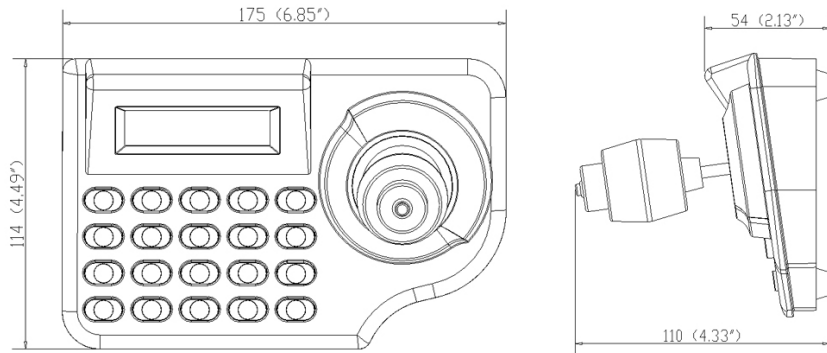
Keyboard: 1 unit.

Power supply: 1 unit (AC110/220V input DC12V/1000mA output).

Testing cable: 1 piece (Two wires for (♂A♂ or ♂+♂) and (♂B♂ or ♂-♂) connections.)

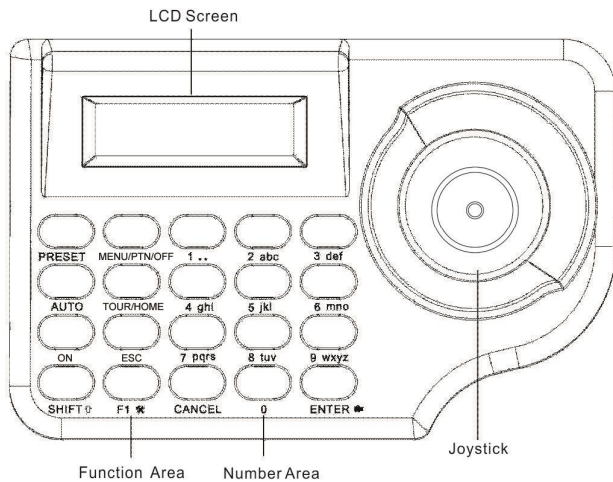
User Manual: qty. 1

Size: (Units: mm)



Keyboard Explanation:

Keyboard Front Panel:



- 12 + On Digital zoom on
- 12 + Menu Digital zoom off
- 13 + On Digital OSD on
- 13 + Menu Digital OSD off
- 150 + On Image Flip on
- 150 + Menu Image Flip off
- 151 + On Origin check
- 152 + On Place camera at 0 degrees horizontal
- 153 + On Go to the slow speed mode
- 153 + Menu Go to the normal speed mode
- 154 + On Display system information
- 155 + On Flip the camera 180 degrees horizontally

Another shortcut code, used with the PRESET key, is:

250 + PRESET: Factory setup menu (Dwell Time, Answer Delay)

【F1】 Used to access and navigate the keyboard's menu. See Part III of Keyboard Setup.

【SHIFT】 Used in combination with other keys. Hold **【SHIFT】** down and press the next key to active an alternate function for that key.

【#】 + 【PRESET】 : The camera moves to Preset #.

【SHIFT】 + 【PRESET】 : No function

【#】 + 【SHIFT】 + 【PRESET】 : Shortcut to create a preset at value #

(Cancel/OK is displayed)

【250】 + 【PRESET】 : Factory setup menu(Dwell Time, Answer Delay)

【AUTO】 Brings up Auto scan setup menu

【AUTO】 : Auto scan setup menu is displayed

【#】 + 【AUTO】 :Auto scan # is started

【SHIFT】 + 【AUTO】 : No function

【#】 + 【SHIFT】 + 【AUTO】 : Writes to Preset# without asking for confirmation

【CANCEL】 Exit Keyboard menu or clear data

【CANCEL】 : Exit keyboard menu or exit key test menu

【#】 + 【CANCEL】 : No function

【SHIFT】 + 【CANCEL】 : No function

【#】+【SHIFT】+【CANCEL】Clear Preset # (Preset clear cancel/OK is displayed)

【ENTER】 Confirm key or used to change value in some submenu

【ENTER】 : Enter into keyboard menu, key test menu; change protocol, baud rate, sound when entering corresponding submenu

【#】 + 【ENTER】 : Change camera ID to # (when using more than one PTZ camera)

【SHIFT】 + 【ENTER】 : No function

【#】 + 【SHIFT】 + 【ENTER】 : No function

【ON】 This key can be used for some shortcuts.

Some shortcuts that work with the REVO 22x PTZ camera are shown below.
Other cameras may have similar shortcuts.

Number Area:

Number keys: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

Delete key: CANCEL

Confirmation key: ENTER

Function Area:

P/T Key: PRESET, MENU, AUTO, TOUR, ON,ESC

Special Function: F1

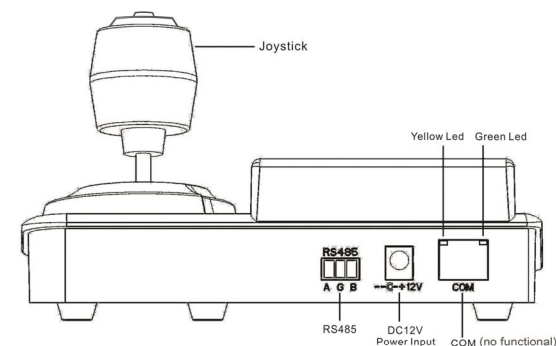
Assistant Function Key: SHIFT

Joystick: To control Pan and Tilt (Up/Down, Left/Right). Twist for zoom in and out. Hold the CTRL button to increase the Pan/Tilt speed.

LCD Screen: Displays data.

CTRL key is on the top of the Joystick.

Keyboard Back Panel:



NOTE: The port marked "COM" has no function. Do not connect anything to this port.

WARNING: DO NOT CONNECT THE KEYBOARD'S "COM" PORT TO ANY INTERNET PROTOCOL DEVICE OR COMPUTER NETWORK!

Back Port Function Introduction:

RS485 Port: Connect to the communication port(s) of other devices (i.e. PTZ cameras).

Power Port: (12V @1000mA)

Green LED (on COM port): No user function.

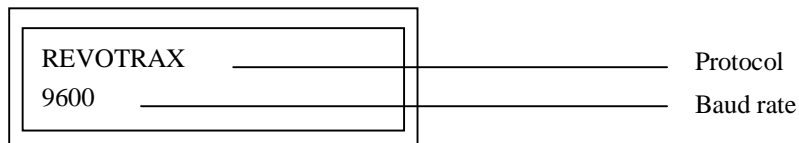
Yellow LED (on COM port): Flickers when joystick is operated.

Power On:

Use the included DC12V 1000mA wall adapter to supply power to the keyboard.

Power on:

1. The keyboard will beep to indicate that it has powered up successfully.
2. The LCD screen will briefly display the communication protocol and baud rate:



Keyboard hints:

Audible Annunciator:

The keyboard will beep one time to indicate each key press.

The keyboard will quickly beep multiple times to indicate an incorrect operation.

Control PTZ Camera through Keyboard

Functional Keys Introduction:

【MENU】 Brings up the camera's menu when pressed

【MENU】 : Camera's menu is displayed on the video monitor

【#】 + 【MENU】 : No function

【SHIFT】 + 【MENU】 : Pattern Setup is displayed

【#】 + 【SHIFT】 + 【MENU】 : Pattern # is started

【ESC】 Normally escapes without saving changes when in camera menu mode

【ESC】 : Exit and without saving changes

【#】 + 【ESC】 : Auto scan setup # is displayed. (For # 1,2,3,4,5. 5 brings up auto scan 9)

【SHIFT】 + 【ESC】 : No function

【#】 + 【SHIFT】 + 【ESC】 : No function

【CTRL】 Activates the CTRL function (Either toggles or holds, depending on function)

In PTZ control mode, holding the CTRL key increases the speed of the PTZ's movement

【TOUR】 Brings up the Tour setup menu (If 0+Tour)

【TOUR】 : The camera's Tour setup is displayed.

【#】 + 【TOUR】 : Tour # is started.

【SHIFT】 + 【TOUR】 : Home function

【#】 + 【SHIFT】 + 【TOUR】 : # Tour setup is displayed

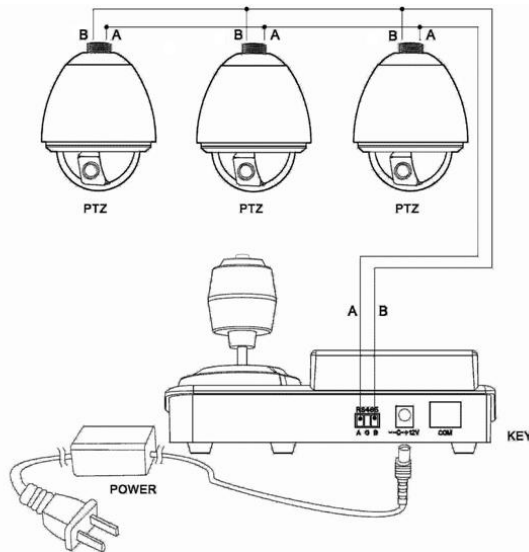
【PRESET】 Call or Set preset position and setup preset menu

【PRESET】 : The preset setup menu is displayed

Part IV Control of PTZ Camera

- Connection between keyboard and PTZ camera
- Control PTZ camera through keyboard
- PTZ Camera control command index

RS485 Connection between keyboard and PTZ camera



Ensure the keyboard's control Protocol and Baud rate (Default: REVOTRAX protocol and 9600 Baud rate) matches the connected PTZ camera(s).

If different protocols or baud rates are needed, change them in the keyboard menu set up. (See Section III of Keyboard Setup).

Ensure that all RS485 connections are correct – One wire should be connected to all 'A' (or 'A+') contacts, and the other wire should be connected to all 'B' (or 'B-') contacts. It's not necessary to use the 'G' (ground) terminal on the RS-485 connector when connecting the keyboard to the other devices.

Part III

Keyboard Setup

- Setting Key
- Setting Procedure
- Menu Index

Joystick calibration, Protocol, Baud Rate, Camera ID and other functions can be set up in the 'Keyboard Set' mode.

Setting Keys: (Keys will be used)

- 【CANCEL】 Delete key/Exit key
- 【ENTER】 Confirmation key
- 【F1】 Special function key
- 【SHIFT】 Assistant function key

How to Set up

While holding the 【SHIFT】 + 【F1】 keys down at the same time, apply power to the keyboard. The protocol and Baud rate will be displayed for a few seconds. Continue holding the keys down, and the keyboard will enter the 'Keyboard Set' mode.

Keyboard set
Enter to menu

Release the SHIFT and F1 keys and press 'Enter' to change the keyboard's settings.

Press 【F1】 to go to the next menu option (1, 2, 3, etc.). Press 【CANCEL】 to exit the set-up menu. Press 【ENTER】 to change the setting or confirm setting information.

Menu Index:

Keyboard set
Enter to menu

Press **【ENTER】** to enter
into keyboard menu

Press **【Cancel】** to exit the menu.

