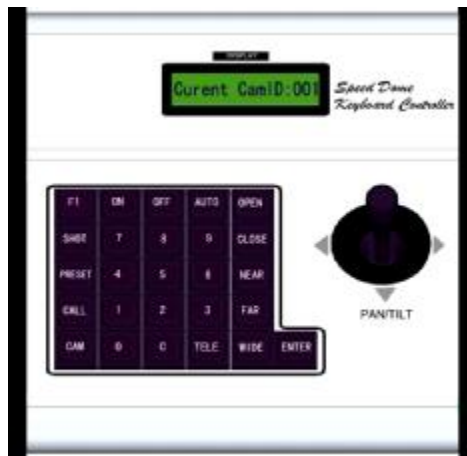


2 Axis Controller

Operation manual



Please read this operation manual before using this keyboard controller

Controller packing list:

- | | |
|-------------------------------------|--------------|
| 1. keyboard controller | 1 PCS |
| 2. Power supply DC 12V(DC9V) | 1 PCS |
| 3. RJ 45 Cable | 1 PCS |
| 4. RJ45 Interface box | 1 PCS |
| 5. Operation Manual | 1 PCS |

Attention Item:

- I Please read the keyboard operation manual carefully before using it.**
- I The keyboard is served with 12V (9V) DC power supply. Please make sure the voltage and polarity before the power supply is switched on.**
- I Do not place the keyboard under the rain or on wet place to avoid short circuit or electrical shock.**
- I The keyboard is high precision electronic device; please do not open the case, to avoid any possible breakdown.**
- I The keyboard integrates with multiple protocols; please choose the appropriate protocol and baud rate. Please notice the LCD will display the chosen protocol and baud rate for moment.**

I. General introduction

The keyboard controller is professional equipped together with terminal receivers such as the intelligent Speed Dome and the decoder etc. Taking the EIA/RS-485 electrical interface between the keyboard and the receiver, one keyboard can control as much as 32 speed dome and decoders and the maximum communication distance between the keyboard and the receiver is up to 1.2 km without bus-mastering. The keyboard controller makes it more convenient to control the speed dome camera and the terminal decoder, hence to control the camera constant speed pan tilt, lens, light, rain brush and so on.

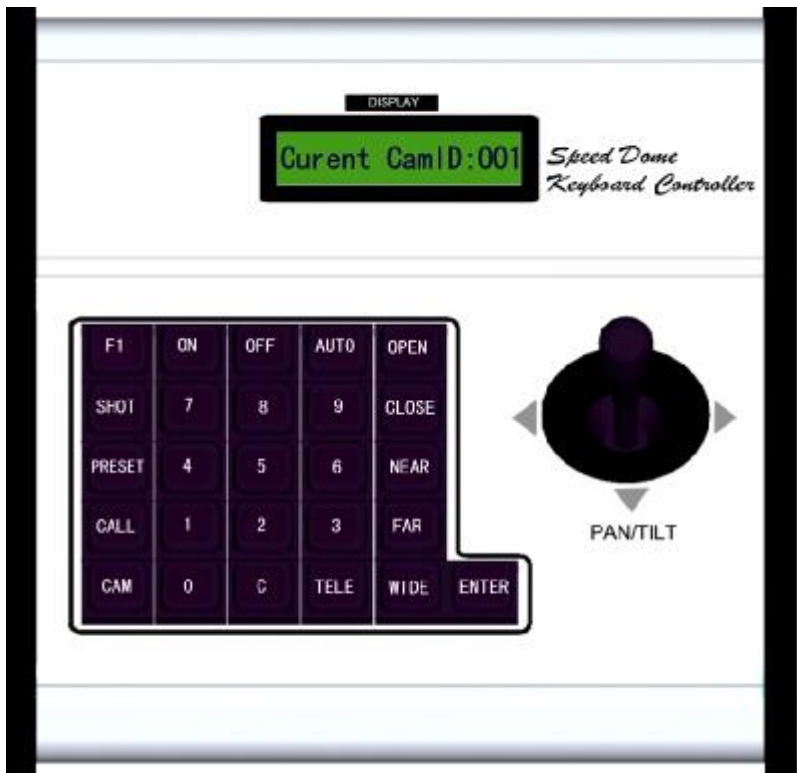
Main Functions:

- I Dome camera or decoder address setting range: 0~255.
- I Functions controlling the dome camera : such as camera background light compensation on/off .
- I Operate the dome camera at different speed setting, speed switching smooth and stable
- I Control the pan tilt auto line scan, speed and direction can be set as well
- I Set or call the set points and cruise tracks of the dome camera. Altogether 128 preset points and 1--6 cruise tracks can be set. Each track involves 16 preset position and the dwelling time and call speed upon each point can be set as well.
- I Manually or automatically control the dome camera, and change the internal function settings of particular camera by call the menu of the camera. .
- I Manually control the focus, zoom and iris of the camera.

II. Keyboard Panel introduction:

1. The Front Panel and Buttons description (Figure 1)

There are speed joystick, buttons and LCD on the front panel of the keyboard. The display is used to show the status of the system and operation information. The joystick controls the upward, downward, leftward and rightward speed motion of the speed dome. The description of buttons is as follows:



(Figure 1)

- I **CAM**: Select address of the Speed Dome or Decoder.
- I **CALL**: To call the preset position.
- I **PRESET**: To set the preset position.
- I **SHOT**: To set up or call cruising track.
- I **AUTO**: To control auto-horizontal rotation for pan/tilt.
- I **WIDE**: To a wide angle.
- I **TELE**: To turn to a telescopic range.
- I **FAR**: To make focus far manually.
- I **NEAR**: To make focus near manually.
- I **OPEN**: To open iris.
- I **CLOSE**: To close iris.
- I **ON**: Switch on the setting of function.
- I **OFF**: Switch off the setting of function.
- I **F1**: Auxiliary control buttons.
- I **0-9**: Number key
- I **C**: To clear inputted data
- I **ENTER**: To confirm

2. Rear Panel (Figure 2)



(Figure 2)

- a). Power input connector (**DC12V**): DC12V power supply.
- b). Communication connector (**RS485**): RS485 signal output.

- c). Finger switch (**CODE SET**): Used to set the **protocol** in use and the **baud rate** of communications.
- d). Integration connector (**RJ45**): The port includes the output of RS485 and input of the power supply, the port is connected to adapter box by specific cable.
- e). PC connector (**PC/RS232**): Used to connect the PC RS232 port, implement control with the PC together.

III. Keyboard setting:

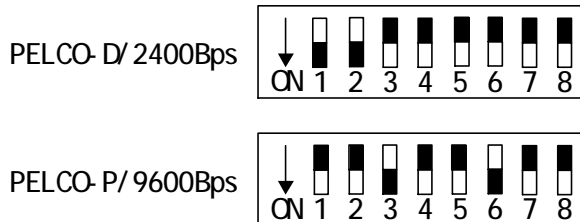
- a). The protocol in use and the baud rate of communication of the keyboard are set by the **CODE SET** in Figure 2. DIP1-DIP4 are used to select type of the communication protocol as per following table:

Switch Position Protocol type	Switch of the protocol				Baud rate	
	DIP1	DIP2	DIP3	DIP4	DIP5	DIP6
PELCO-D	ON	ON	OFF	OFF	OFF	OFF
PELCO-P/4800 Bps	OFF	OFF	ON	OFF	ON	OFF
PELCO-P/9600 Bps					OFF	ON
PANASONIC	ON	OFF	ON	OFF	OFF	ON
HUNDA600	ON	ON	ON	OFF	OFF	ON
LILIN	OFF	OFF	OFF	ON	OFF	ON
KALATEL	ON	ON	OFF	ON	ON	OFF
Ultrak	ON	ON	ON	ON	OFF	ON

- b). DIP5 and DIP6 are used to select the baud rate, shown as following table (DIP7 and DIP8 are not used) :

switch Baud rate	DIP1	DIP2	DIP3	DIP4	DIP5	DIP6
2400bps					OFF	OFF
4800bps					ON	OFF
9600bps					OFF	ON
19200bps					ON	ON

c). Example: Some of the **CODE SET** of the protocols are set as follows:



IV. Operation of the Keyboard

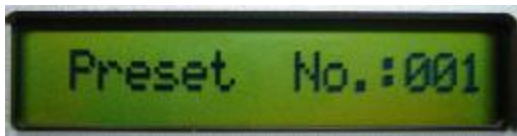
- Select Address of Speed Dome Camera /Decoder:
[CAM]+[N]+[Enter] (N — No. of camera from 0 to 255)



Function: Select the address of the camera to be controlled. When the value N is in conformity with the address of the speed dome, it will be under control.

- To set preset position: **[PRESET]+[N]+[Enter]**

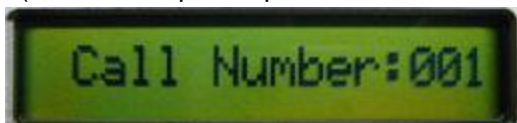
(N — No. of preset position from 1 to 128)



Function: Store current position and refer it as No. N position.

3. Call the Preset position: **[CALL]+[N]+[Enter]**

(N — No. of preset position from 1 to 128)



Function: Transfer the camera to the position of No. N preset position.

4. Cancel the Preset position:**[PRESET]+[N]+[OFF]**

(N — No. of preset position from 1 to 128)



Function: Delete the No. N Preset position stored.

5. Set the cruise track (PELCO-P/D ,Ultrak Available)

I Enter the status of track setting: **[SHOT]+[N]+ [ON]**

(N: No. of track from 1 to 6)



Description: Track No1 is currently set, in which there are 5 preset points.

- I Edit Track: Press [TELE] to edit afterward and press [WIDE] to edit return. Each track involves 16 preset points and the running speed and the dwelling time of each preset position.



Description: The 1st preset position in the track is 01.



Description: The speed of the 1st preset point in the track is the 4th class.



Description: The dwelling time of the 1st preset point in the track is 1 seconds

- I Speed Range: 1 to 8 from the fastest to the lowest. Any speed outside the range will be referred as the 1st class; the range of the dwelling time is: 1 to 99.
- I When the No. N preset point is set as No. 0, then all preset points before the No. N preset point in the track will be valid however all numbers of preset points afterward and their speed and dwelling time shall be set as 0 automatically.
- I After tracks are edited, press OFF to store and exit while push the joystick to exit without storage.

6. Tour the Track: **[SHOT]+[N]+ [Enter]**

(N — No. of the track from 1 to 6)



Function: Tour the No. N track and stop tour by pushing the joystick.

7. Stop the Track: **[SHOT]+[N]+ [OFF]**

(N — No. of the track from 1 to 6)

Function: Stop the No. N track or stop tour by pushing the joystick.

8. Clear Cruise Track: **[SHOT]+[N]+ [OFF] (Pressing [OFF] down for 2 seconds until "Clear Tour OK" appears)**

(N — No. of the track from 1 to 6), suitable for PELCO-P, PELCO-D, etc.

9. Auto Pan Setting:

- I Set the dome to scan start position: press **[AUTO]+[ON] to save the scan starting position.**
- I Set the dome to scan end position: press **[AUTO]+[OFF] to save the end position.**
- I Run Auto Pan: **[AUTO]+[ENTER]**

10. Stop Auto Pan: push the joystick to stop scan

11. Control the zoom of the Camera: **[WIDE]/[TELE]**

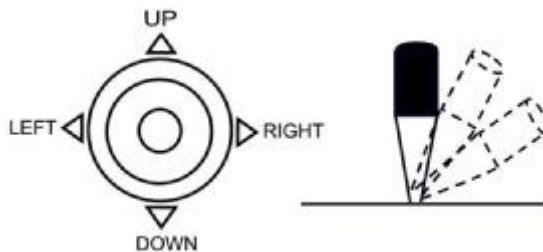
12. Control the Focus of the Camera: **[FAR]/[NEAR]**

13. Control the Iris of the Camera: **[OPEN]/[CLOSE]**

14. Function Control of the Camera and its parameter:

No.	Control Object	Definition of Keyboard Operation	
		CALL + No.	PRESET + No.
51	Pan-tilt Compensation Control	Enable line-scanning (low-speed)	Enable scanning
52		Enable line-scanning (medium-speed)	Set starting point of scanning
53		Enable line-scanning (high-speed)	Set ending point of scanning
54	Video Camera Power Control	Power On	Power Off
55	Background Light Compensation *	On	Off
56	Zero Illumination	On	Off
57	Screen Display *	On	Off
58	Digital Zoom *	On	Off
59	Focus	Auto	Manual
60	Iris	Auto	Manual
61	White Balance Mode *	Auto	Manual
62		Indoor	Outdoor
63		ATW	One Push WB
100	Home position	ON	OFF
95	Dwell time setting for the Home position function	1 minute	
96		2 minutes	
97		4 minutes	
98		8 minutes	
99		10 minutes	

- I For different camera, control functions in the list could be different.
 - I Item with symbol “*” has memory function after Dome device powers off (refer to Functions of the Video Camera)
 - I For the camera with the menu, switch ON/OFF the menu by “**CALL** + **57**”, and switch ON/OFF the OSD by “**PRESET** + **57**”. In case the camera has the menu and the menu is ON:
 1. Select the item on the menu by buttons **[WIDE]** and **[TELE]** to scroll the cursor up or down;
 2. Change the status of the selected item on the menu by buttons **[FAR]/[NEAR]**;
 3. Switch OFF the menu as per operations in the list after the menu is set.
 - I Please refer to the Dome manual for special case operation.
15. Use the Joystick to Control the Speed Dome Camera:
 You can use the speed joystick to control the Pan/Tilt direction and speed of the dome of the camera randomly. The speed of pan/tilt is decided by the angle of the joystick you operate at (Figure 3). Change the tilting angle of the joystick you can adjust the speed evenly and the camera can be focused automatically in the course of scan to keep images being distinct.



(Figure 3)

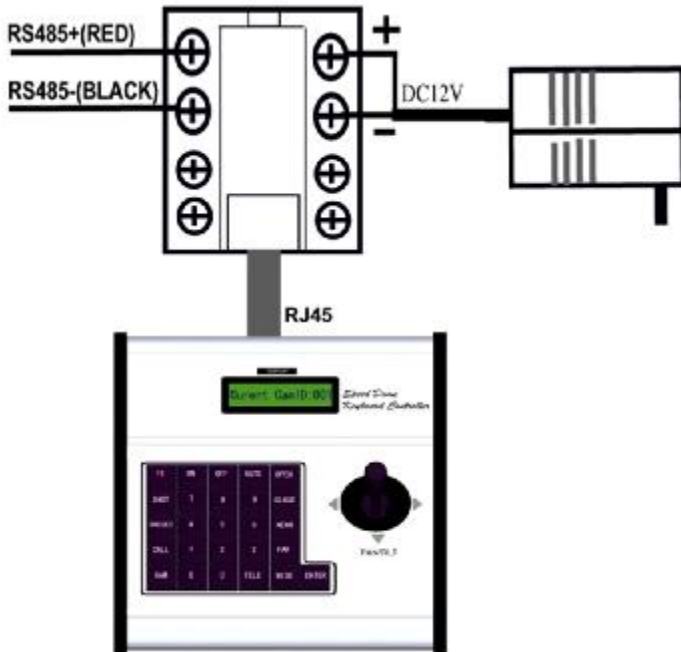
16. In case error operation occurs, normal display will be recovered after “**Error Operation**” shows for 1 second.

v. Installation and Connection:

Attention: Please read the operation manual of the keyboard and the speed dome carefully before connecting wires. Any incorrect connections can cause permanent damage of the device. When connecting wires, first switch off the power supply of all devices. The communication wires between devices should be shielded twisted cable. When installing cables they should be far away from high voltage lines or other possible interference circuits as much as possible.

1. Integrative connection:(Figure 4)

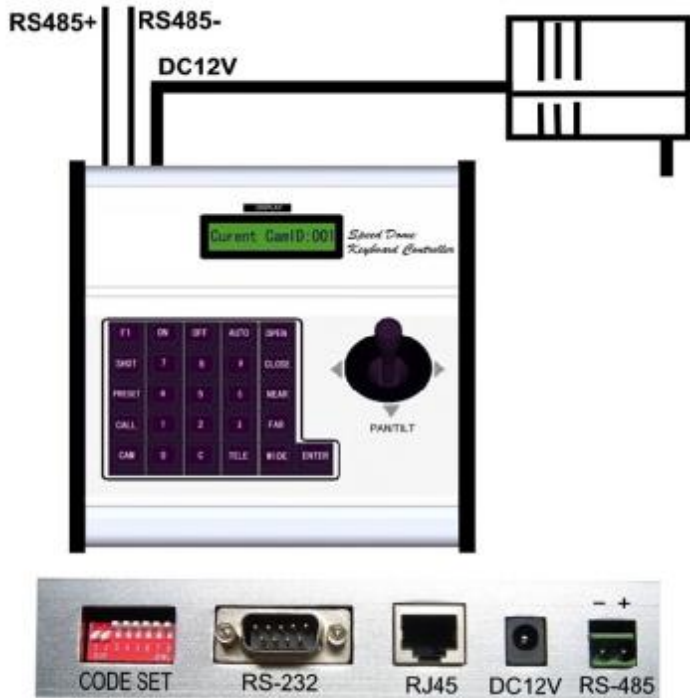
Refers to the control output of the keyboard RS485 and the power input go through the interface box first then the single RJ45 cable is connected to the keyboard RJ45 port.



(Figure 4)

2. Normal connection:(Figure 5)

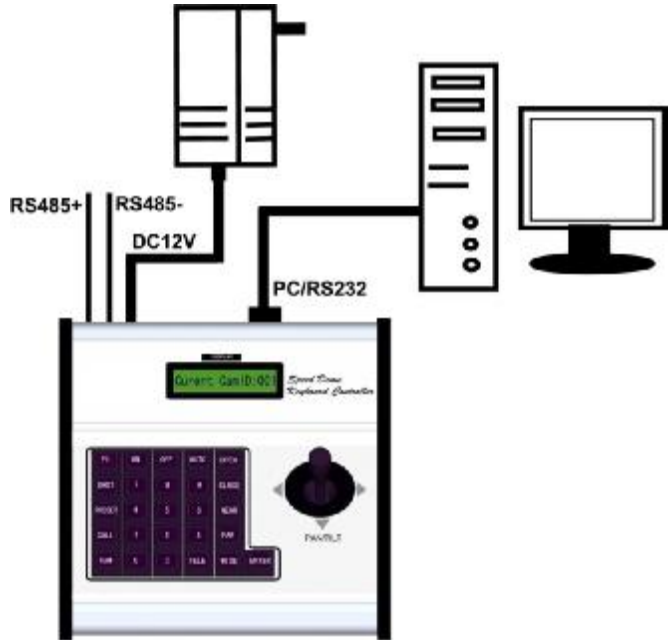
Refers to the RS485 control output and power output are directly connected to the keyboard relative ports.



(Figure 5)

3. Connect to PC/RS232: (Figure 6)

Refers to the keyboard and computer can be connected together to control the dome camera.



(Figure 6)

VI. Technical Specifications:

- I Communication between Speed Dome Camera and the Controller: Port to multi-port and half duplex function.
- I Communication mode: RS-485.
- I Baud Rate of Communication: Four baud rates i.e. 2400Bps, 4800Bps, 9600Bps and 19200Bps.
- I Distance of Communication: 1200 M in maximum
- I Power Supply: DC12V/800 mA (DC9V/100mA)
- I Number of Controlled Speed Dome Camera up to 32.
- I Size: 95mm(H) × 205mm(L) × 205mm(W)
- I Weight: 1.2 Kg