XtendLan

KEYBPTZ3DL8VGA

users manual

1. Summary

   The keyboard is a universal keyboard of security monitoring series, which can control the ball-type integrated camera of all kinds protocols matrix, which has been equipped with the navigation key which can control the revolving of the camera and the zoom magnification of lens; with the LCD screen and the function of back-light;which can display the current operation order the control protocol name the current dome ID the current monitor ID and the state of joysticks. The user can control the CCTV system more easily with the joystick and the LCD screen.

1.1 Notice
● Please read the manual carefully and reserve it.
● Please advert to the notice in manual.
● Please don't place the keyboard in the moist place.

1.2 Function and Characteristic
● RS485 Bus Line, and a keyboard can connect 31 domes at most in the direct control mode.
● Can be compatible with all kinds of protocols.
● Can control the Iris Focus and Zoom.
● Can set and call the preset, run the scanning the pattern and the tour.
● Can control the matrix and through which can control the dome indirectly.
● Equipped with the navigation key and the larger LCD screen.
● Video out/ in and display.
● Infrared ray emission，emission the same data&content as RS485

1.3 Technical Data
★ Electrical character
● Input voltage：12V±10%
● Output voltage：12V DC/500mA
● Rating Power：6.5W

★ Communicate character
● Communicate interface：RS485×1
● Communicate frequency：2400、4800、9600、19200bps
● Communicate distance：RS485, RS422 can reach 1.2Km

★ Operational environment
● Operating temperature：0℃～50℃
● Relative humidity less than 90%

★ Physical property
● L*W*H=305mm*210mm*144mm
● Weight：2.129Kg

2. Keyboard Connection

There is interface on the back of the keyboard, which equipped with kinds of communication , like RS 485,VGA output,Video in,USB,as figure 2-1.1

2.1.1 Interface instruction

RS485 interfaces are on cable connection of the Keyboard-two green terminal RS485 (A+B-) can connect with the dome when the keyboard controls the dome directly;RS485 (A+B-)can connect with DVR or other keyboards when the keyboard controls the dome by matrix;

With VGA input ,the keyboard can working with a display ,can connected with DVR,PC ect., The max input resolution is 1280X720,1024X768,800X600,

USB Interface, use to connect with the PC, By this connect way, the keyboard can working as a aim object。Video interface used for camera。
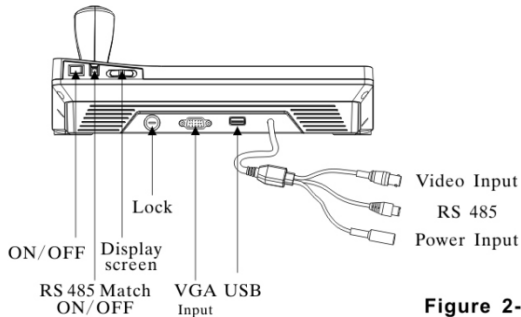

Video Input
RS 485
Power Input

Lock

ON/OFF | Display screen

RS 485 Match ON/OFF | VGA Input USB

Figure 2-1.1

2. 2 Connect Matrix

Can control the PELCO CM6700、CM6800matrix。Follow are the connection way of matrix PELCO CM6700,to show the steps of connection。Cover board of CM 6700 matrix has the interface of RS422 ("REMOTE KEYBOA-RD(s)"), connect it to the RS422 on the keyboard,longest distance is 1200m。

2. 3 Direct connect with Dome

Keyboard connect the Dome wit RS485。The RS485 interface of the Dome is on the commutator of the Dome。Press the metal button in the hanging frame,open the commutator, will find a 4bit power jack,follow the surface instruction to find Rs485 （A+, B-）follow the instruction。Maybe a different connect way when come from different manufacturer
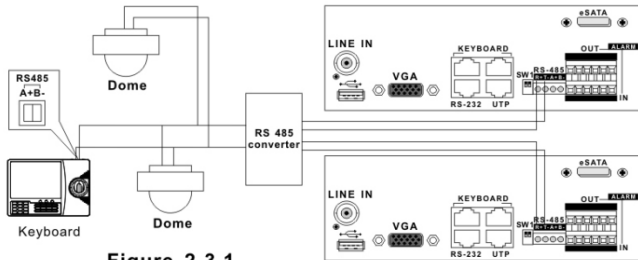

Figure 2-3.1

-3-

2.4 Keyboard connection in the system

Indirect control the dome when connect with matrix（as figure 2-4.1）。contrariwise will control the domes directly，Parallel connect the keyboard and dome to the bus of RS-485，all the keyboard can control any dome among them, under this way, the add of the main keyboard should be "1" and baud rate should be 9600bps（as figure 2-4.2）
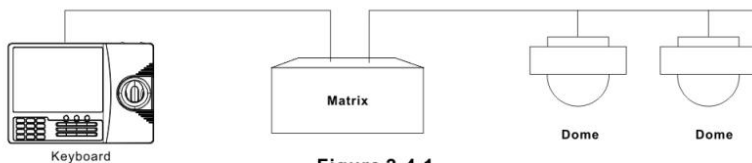

Figure 2-4.1

Attention

1、the max quantity of master equip and be charged equip controlled by a RS485 bus is 32，so when use the keyboard to control direct the max dome quantity is 31

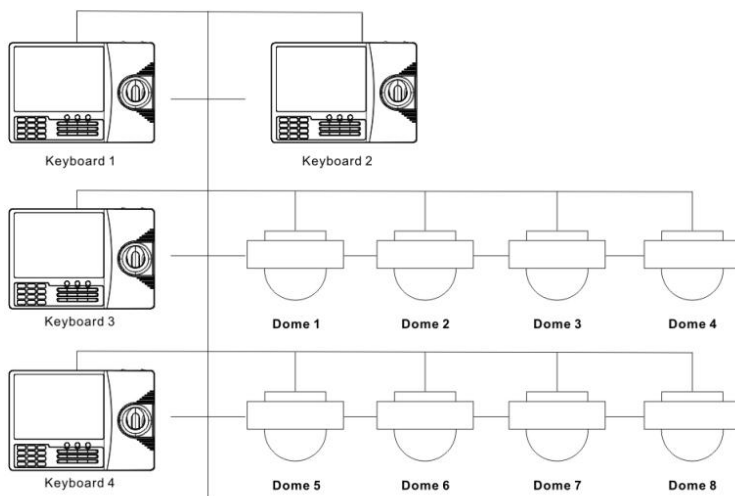2、max quantity keyboard in a system is 4,also the 4 keyboards should be different ID

Figure 2-4.1

3.Keyboard operation instruction

TFT display screen
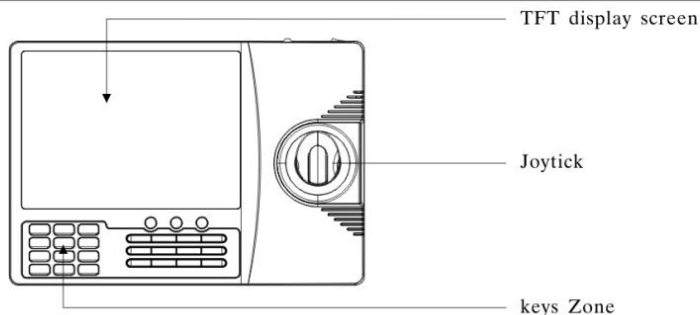
Joytick

keys Zone

Figure 3-1.1

Attention please because different system have some different special operation ways, so should consider the actual requirement when operation in some special systems

3.1 Electrify

Keyboard will self-check， and press MENU to display the detail menu。

Attention —— Navigation key should be nil when keyboard is self-checking

3.2 TFT display screen

TFT screen display content：aim dome、aim monitor add;baud rate et。cat the end of the content will show the keyboard information ,as follows figure show 。 When operation，TFT back light will on，and will off 15s after stop the operation。

Keyboard	V 1.00
Keyboard	ID：001
Camera	ID：001
Monitor	ID：001
Protocol :	Pelco-d
Baudrate :	2400bps：

Figure 3-1.2

3. 3 Navigation Keys Controls Domes

Two main function of the navigation key，control the dome turn around , setup the aimed object's menu。

● When for menu setup，Up is for the upper menu，down for the next menu；Right for the sub menu or save the setup；Right for exit。
● Direct proportion between the speed of the Dome and the lean angle of the navigation keys, lange lean angle ,faster rotation speed。

3. 4 Rigger the aim dome

【N】+【CAM】

【N】for Number，input the serial number of the Dome，Press【CAM】key to rigger the
   add of the aim dome。

3.5 Dome lens control

●Zoom：

Press【TELE】，multiple accretion。
Press【WIDE】key，multiple minish

●Focus：

Press【FAR 】key focus for far objects。
Press【NEAR】key focus for vicinity objects。
Normally ,Zoom and focus will be adjust auto by the dome, and with the【FAR 】【NEAR】
 to realize the manual zoom and focus

●Iris：

Press【OPEN】key，manual Iris accretion，
Press【CLOSE】key，manual Iris minish，

3.6 Set dome function

3.6.1 Pre-set

Pre set：【SET】+【N】+【PRESET】
Adjust pre set：【N 】+【PRESET】
【N】for the number of the pre-set。

3.6.2 Scan

Left borderline：【SET】+【1】+【SCAN】
Right borderline：【SET】+【2】+【SCAN】
star：【1】+【SCAN】
Enter the menu to set when need change the scan speed。

3.6.3 Pattern

●design path setup：【SET】+【N 】+【PATTERN】+path+【SET】+0+【 PATTERN】
Press【SET】key，input the number of design scan（1-4），press【PATTERN】key，
enter the path setup state，when ending press【SET】key first，then press【0】key，
Then【PATTERN】key，

● starting the design scan：【N】+【PATTERN】input the design scan number(1-4)，
press【PATTERN】key to starting，

3.6.4 Cruise

starting：【N】+【TOUR 】/【TOUR】cruise number first，then【TOUR】key，starting
The cruise。
Direct press the【TOUR】key when the system only have one cruise .。

3.7 Call Dome main menu

【9】+【5】+【PRESET】：Input 95，press【PRESET】key，aim Dome，menu will
display on the monitor。

3.8 Matrix control

3.8.1 Call matrix main menu
【SHIFT】+【SET】： Call the main menu, the menu will display on the object monitor. How to use the keyboard Setting the matrix please refers the matrix operate manual.

3.8.2 Confirm after program
【ENTER】： after the matrix is programmed, press【ENTER】, reflects confirm after program.As for the detail program, please refer to the matrix operation manual.

3.8.3Change object monitor
【N】+【MON】Input the monitor ID, then press MON the image and the menu of the dome that you controlled by keyboard will display in the object monitor

4、Keyboard control

●Keyboard control

Turn on the power and press【MENU】, the system information will display as (4.1-1), and press again, the information will disappear. You can do all the operation during this time.

Press【MENU】 and hold 2s, and call the main menu. All the sub menu setting needs enter the main menu. After entering the main menu, press the Figure key and or use the joystick to select the menu.
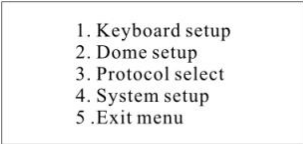
```
1. Keyboard setup
2. Dome setup
3. Protocol select
4. System setup
5 .Exit menu
```
figure 4.1-1

●Save setting

After setting the function you nee, press【ENTER】to save the setting. After finishing the setting, the TFT will display "Success".

●Back Previous menu

Press the【PREV】key to back to the previous menu.

4.1 Keyboard parameter setting

4.1.1 Dome ID set up
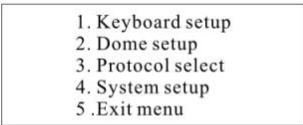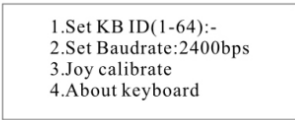1、Enter the main menu
TFT will display (picture4.1.1-1)

```
1. Keyboard setup
2. Dome setup
3. Protocol select
4. System setup
5 .Exit menu
```
figure4.1.1-1

2、Press 【1】 to select the keyboard setting as TFT(Picture4.1.1-2)

```
1.Set KB ID(1-64):-
2.Set Baudrate:2400bps
3.Joy calibrate
4.About keyboard
```
figure 4.1.1-2

3、Press 【1】 again will show thefigure(Picture4.1.1-3)

```
1.Set KB ID(1-64):-
```
figure 4.1.1-3

4、Press 【1】 to select the ID Setting (Picture4.1.1-4)

```
1.Set KB ID(1-64):-
```
figure 4.1.1-4

Use the NO keyboard to select the camera ID in the range （1-64）；And then press the 【Enter】 to save, the screen will display Success asfigure(4.1.1-5)

```
Success
```
figure 4.1.1-5

If the NO you input outside the range1~64, it will display Error asfigure（4.1.1-6）
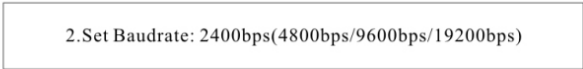
```
Error
```
figure 4.1.1-6

5、Press 【PREV】 or use the shake toward to LEFT to back to previous menu.

4.1.2 Keyboard Baud Rate Set up

Enter the main menu as the TFTfigure (4.1.1-1) show..
Press 【1】 will show on the TFT asfigure （4.1.1-2）
Press 【2】 select the Baud Rate setting, asfigure(4.1.2-1)

```
2.Set Baudrate: 2400bps(4800bps/9600bps/19200bps)
```

figure 4.1.2-1

2400bps\4800bps\9600bps\19200bps is available，You can select the Baud rate you need and press the 【ENTER】 to save. If you operate success, the screen will show "Success"

Press 【PREV】 or use the shake toward to LEFT to back to previous menu.

Attention —— If connect to the matrix, it must select the 9600bps. And is multi keyboard to work, it must use 9600bps or 19200bps

4.1.3 Information display

Enter the menu，TFT will display as 4.1.1-2press 【4】，TFT will display as （figure 4.1.4-1）

Version:1.00
KB ID: 001
Protocol: Pelco-d
Baudrate:2400bps

figure4.1.4-1

Press 【PREV】 or use the shake LEFT back to previous menu.. The keyboard menu will display all the keyboard setting information; include the keyboard model, keyboard ID, Protocol and the Baud rate.

4．2 Dome set up
4.2.1 Preset set up

Enter the main menu asfigure （4.1.1-1） and press 【2】 to enter the dome setting menu asfigure （4.2.1-1）；This part you can set the follow function: Preset, Scan, Pattern, Tour.

1.Set dome preset
2.Set dome scan
3.Set dome pattern
4.Set dome tour

figure4.2.1-1

Press 【1】 enter the dome Preset function setting asfigure （4.2.1-2）

1. Save preset
2. Show preset
3. Clear preset

figure4.2.1-2

Item 1 : Save preset；item 2 : Show the preset; Item 3: clear the preset
Press 【1】 enter the preset, you can input the preset NO asfigure （4.2.1-3） show

Preset num:___
(1-128)
Press PREV to back

figure4.2.1-3

After enter the preset menu you can use navigate key control the dome directly, and input the preset NO to save as thefigure 4.2.1-4 show. And on the TFT screen will display SUCCESS.
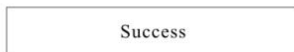
```
Success
```
figure4.2.1-4

Press 【Prev】 back to previous men.

Attention —— While enter the dome preset menu, the keyboard navigate keyboard can directly control the dome and lens control zone also can control the dome's lens.

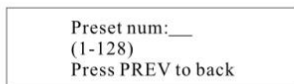Press 【2】 enter the "Show the preset" menu asfigure 4.2.1-5

```
Preset num:___
(1-128)
Press PREV to back
```
figure4.2.1-5

Input the Preset NO and press the 【ENTER】 to call it, and the TFT will display "Success" 。Use the navigate Key or 【PREV】 back to previous menu.

Press 【3】 enter the "clear the Preset" to clear preset information asfigure 4.2.1-6 show.
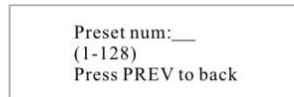
```
Preset num:___
(1-128)
Press PREV to back
```
figure4.2.1-6

Input the PRESET NO which you want to clear, and press the Enter to clear it, and it will show "Success" and back to previous menu.

4.2.2 Dome Scan set up

Enter the menu likefigure（4.1.1-1）
Press 【2】 enter the dome setting menu as thefigure（4.2.1-1）;
Press 【2】 again to enter the dome scan setting asfigure 4.2.2-1;
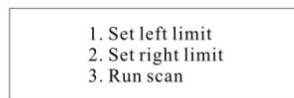
```
1. Set left limit
2. Set right limit
3. Run scan
```
figure4.2.2-1

Dome scan setting include the: Left limit, Right Limit and Run scan
Press 【1】 to set the Left limit asfigure 4.2.2-2 show.

```
Press ENTER sure
Press PREV to back
```

figure4.2.2-2

While enter the dome limit setting menu, move the dome to the suitable position, and press 【Enter】 to save and will show "Success" and back to previous menu.Select the item 2 to set the Right limit, and do the same as the left limit setting,Back to the menu and press 【3】 to operate the Run Scan.

Attention — After entering the dome scan menu, the keyboard can directly control the dome and lens control zone also can control the dome's lens.

4.2.3 Pattern set up
Enter the menu as thefigure (4.1.1-1)
Press 【2】 enter the dome setting menu as thefigure （4.2.1-1）
And then press 【3】 enter the pattern setting asfigure 4.2.3-1 show

```
1. Pattern num:_
2. Set pattern
3. Run pattern
```

figure4.2.3-1

After enter the menu, the system need input the pattern information you want, you can put in the NO1~4 and
Press the 【ENTER】. The mouse will skip to the next item auto to set the second patter you need. If you already have it, you can skip it and select the 【3】 to run the pattern directly.

Pattern setting：After enter the pattern setting menu, move the dome do the suitable position and press the 【1】 to start record the scan track. The screen will display "Start ……，like thefigure4.2.3-2. Press "0" to finish the scan record, and the screen will show "Success" and back to the previous menu.

```
Press 1 to start
Press 0 to start
Press PREV to back
```

figure4.2.3-2

Attention — After entering the dome pattern, the keyboard can directly control the dome and lens control zone also can control the dome's lens.

4.2.4 Tour set up

Press 【2】 enter the dome setting menu, as thefigure 4.2.1-1 show,
And then press 【4】 enter the tour setting as thefigure 4.2.4-1 show.
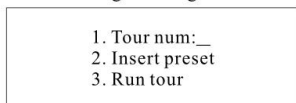
```
1. Tour num:__
2. Insert preset
3. Run tour
```

figure4.2.4.1-1

After enter the menu, you need input the TOUR information, the range you can put is
1~6, and press the 【ENTER】. The mouse will auto skip to the second TOUR setting.
If you have already set it, you can skip it. And it will show the "Success" and back to the
previous menu.

Select the Item 2 asfigure（4.2.4-2）, you need input the tour preset, and in the second
item you need put in the speed information, the range is （1-127）; In the third item you
need input the time how long it need to stop, the range is （1-255）. After finishing all the
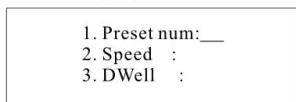step, press the 【ENTER】 and will display "Success" and back to previous menu.

```
1. Preset num:___
2. Speed  :
3. DWell  :
```

figure4.2.4-1

Press 【3】 Run the TOUR

Attention ◁───── Insert the tour can not work now

4.3 Protocol set up

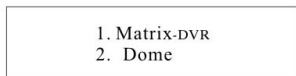Enter the menu asfigure （4.1.1-1）, Press 【3】 enter the Protocol setting as figure
(4.3-1)

```
1. Matrix-DVR
2.  Dome
```

figure4.3-1

Press 【1】 enter the DVR Protocol setting as figure（4.3-2）

```
1.Pelco-Matrix  2.HCDVR  3.DHDR
4.XSJDVR      5.VA-KBD 6.RMDVR
```
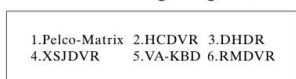
figure4.3-2

Press 【2】 enter the Dome Protocol setting as figure（4.3-3）

```
1.Factory  2.Pelco-P  3.Pelco-d
4.DH-SD  5.Samsumg 6.LG-MULIIX
```
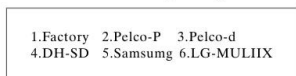
figure4.3-3

4.3.1 Pelco Matrix model

Press 【1】 enter the PELCO Matrix model as thefigure (4.3.1-1);
And then press the 【ENTER】 to select the Protocol and back to previous menu.

```
1.Pelco Matrix
```

figure4.3.1-1

4.3.2 Dome control model

Press 【2】 enter the dome control model as thefigure (4.3.2-1).
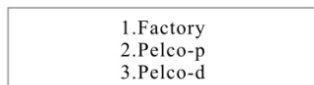According to the user's need, select the suitable PROTOCOL and back to the previous menu.

```
1.Factory
2.Pelco-p
3.Pelco-d
```
figure4.3.2-1

4.4 System Setting (can select the key4) asfigure 4.4

```
1.System mode :    PAL/NTSC
2.Buzzer :         ON/OFF
3.Key time/s :     000~255
4.LCD Backlight :  000~100
5.USB Mode :       Mouse/PCKEY/NONE
6.Brightness :     000~255
7.Contrast :       000~255
8.Saturation :     000~255
9.Language :       CHN/ENG
10.Init System :   ON/OFF
Press PREV to back
```
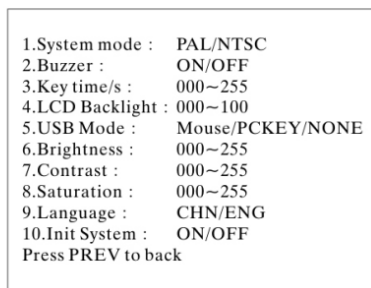figure4.4

Enter the menu asfigure (4.2.1-1) and press the 【5】 to exit the menu.。

5.Appendix

5.1 Rs485 Bus Basic Knowledge

●RS485 Bus Basic Character

According to RS485 industrial standards, RS485 Bus is of half-duplexed data transmission cables with characteristic impedance as 120. The maximum load capacity is 32 unit loads (including main controller and controller equipment)

●Distance of RS485 bus transmission

While use the 0.56mm (24AWG) twisted cable as the communication, the farthest distance it can reach as follow based on the different Baud rate:

Baud rate	Farthest Distance
2400bps	1800 m
4800bps	1200 m
9600bps	800 m
19200bps	600 m

If user selects thinner cables, or installs the dome in an environment with strong electromagnetic interference, or connects lots of equipment to the Rs485 Bus, the maximum transmitting distance will be decreased. To increase the maximum transmitting distance, do the contrary.

● **Connection and terminational resistance**

The RS485 standards require a daisy-chain connection between the equipment. There must be termination resistance with 120 impedance at both ends of the connection (refer tofigure 4-1.1).Please refer tofigure 4-1.2 for simple connection But "D" should not exceed 7m.
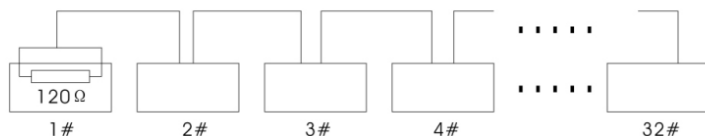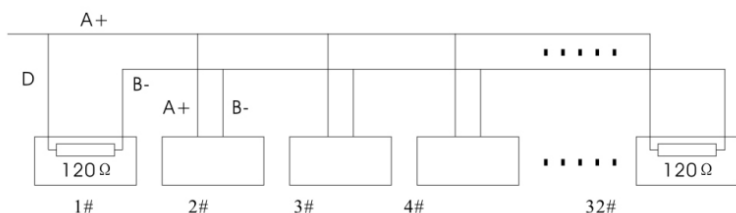

figure 4.1-1

figure 4.1-2

● **Problems in practical use**

In some circumstances user adopts a star configuration in practical connection. The termination resistors must be connected to the two equipments that are father away from each other, such as equipment1# and 15# (refer tofigure 4-1.3)

As the star configuration is not in conformity with the requirements of RS485 standards, Problems such as signal reflections, lower anti-interference performance arise when the cables are long in the connection. The reliability of control signals are decreased with the phenomena that the dome dose not responds to or just responds at intervals to the controller, or dose continuous operation without stop.
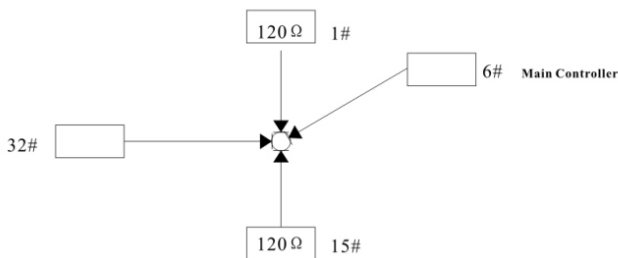

figure 4.1-3

In such circumstances the factory will recommends the usage of Rs485 distributor. The distributor can change the star configuration connection to the mode of connection stipulated in the RS485standards. The new connection achieves reliable data transmission (refer tofigure 4-1.4)
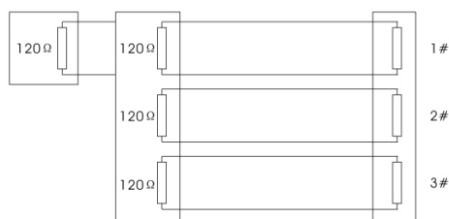

figure4.1-4

5.2 Keyboard shortcut operation manual

Working Mode	Shortcut	Operation object	Function
Working Mode	【POWER】	Keyboard	ON/OFF
	【MENU】	Keyboard	System information display
	【N】+【CAM】	High speed dome	Input Dome ID, press 【CAM】to select object dome.
	【TELE】	High speed dome	Press 【TELE】, increase the multiple of lens
	【WIDE】	High speed dome	Press 【WIDE】, reduce the multiple of lens
	【FAR】	High speed dome	Press 【FAR】, far focus
	【NEAR】	High speed dome	Press 【NEAR】, near focus
	【CLOSE】	High speed dome	Press 【CLOSE】, reduct iris
	【OPEN】	High speed dome	Press 【OPEN】, increase Iris
	【SET】+【N】+【PRESET】	High speed dome	Adjust the image to object position, Press 【SET】to input the preset, and press 【PRESET】to set the preset
	【N】+【PRESET】	High speed dome	Input preset ID, press 【Preset】to call the preset
	【SET】+【1】+【SCAN】	High speed dome	Adjust the image to object position, press Set to input 【1】,then press Scan to set 【scan】left limit.
	【SET】+【2】+【SCAN】	High speed dome	Adjust the image to object position, press Set to input 【2】, then press 【Scan】to set scan right limit.
	【1】+【SCAN】	High speed dome	Input 【1】, press 【Scan】to run scan.

Working Mode	【SET】+【N】+【PATTERN】	High speed dome	Press 【Set】to input pattern number, press 【Pattern】 to record pattern path.
	【SET】+【0】+【PATTERN】	High speed dome	Press 【SET】 and input0, Press 【PATTERN】 to save path
	【N】+【PATTERN】	High speed dome	Input the pattern path（1-4）, Press 【PATTERN】to start pattern
	【N】+【TOUR】/【TOUR】	High speed dome	Input the TOUR NO, press 【TOUR】 or directly press 【TOUR】to start the Tour
	【9】+【5】+【PRESET】	High speed dome	Input 95 and press 【Preset】 to call the menu
Direct Control Mode and PELCO Matrix Mode	【SHIFT】+【SET】	Matrix	Press 【SHIFT】and 【SET】 to call the matrix menu
	【PREV】	Matrix	Press 【PREV】skip to the previous dome, hold on 2sec on 【PREV】 to continuously skip the sixteen domes of connection matrix forwards。
	【NEXT】	Matrix	Press 【NEXT】skip to the previous dome, hold on 2sec on 【NEXT】 to continuously skip the sixteen domes of connection matrix backwards。
	【Stop】	Matrix	Stop switch
	【ENTER】	Matrix	After program, press 【Enter】 to confirm.。
	【N】+【MON】	Matrix	Input monitor ID, press 【Cam】 to select object monitor

Annotated: 【PRE】=【PRESET】 【AT】=【PATTERN】
【SHI】=【SHIFT】 【ENT】=【ENTER】