

---

## **Multi-functional testing keyboard**



## **Operation Manual**

Before using the product, please carefully read the manual and the maintenance of this manual for future use



## **Preface**

This manual is for Multi-functional testing keyboard in monitoring systems. It has many contents, such as important safety and cautious information, function instruction, features and specifications, using methods, general failure as well as solutions included.

Regardless whether you have ever used this kind of products or not, we recommend that you'd better read the manual first.

The users should read it from the first page if possible, or if you just want to have a look at the important parts, please refer to the catalogue in advance.

## Simple Failure and Solution

Problem	Possible reason	Solution
White Screen	<ol style="list-style-type: none"> <li>1.lack of electricity for the battery</li> <li>2.when using outside-connection power, we should move “ Power on/off switch” continously on the side of it.</li> </ol>	<ol style="list-style-type: none"> <li>1. chagre.</li> <li>2. when using outside-connection power, we should move “ Power on/off switch” continously on the side of it. , Use it correctly according to the operation of the manual..</li> </ol>
Uncontrollable	<ol style="list-style-type: none"> <li>1 . RS485connection(fa use or bad )</li> <li>2.Wrong dome parameter edit</li> </ol>	<ol style="list-style-type: none"> <li>1. Check RS485 connection to assure correct contact..</li> <li>2. Check if dome’s parameter edit in the menu is the same as the dome’s parameter to be controlled</li> </ol>
Image Jumpping	<ol style="list-style-type: none"> <li>1 . Bad connection of video cable</li> <li>2. .lack of electricity for the battery</li> </ol>	<ol style="list-style-type: none"> <li>1. Pull out video cable and re-plug in, If the Image is still jumpping, please try another video cable</li> <li>2. Charge</li> </ol>

## Performance Parameter

### Technical Parameter

Voltage Inputs	9V±10% electrical current=2A or more than2A
Battery	Li battery rechargeable DC3.6V (1400mA)
Video Signal Format	NTSC/PAL (auto adaptation)
Video Output Mode	1.0Vp-p
P/T Control Protocol	PELCO-D、PELCO-P、SAMSUNG、BEIEOT、A01、B01、SANGLIN、LILING, According to the demands of users can add other protocols
Baud Rate	2400bps、4800bps、9600bps、19200bps
Data Transmission	RS232/RS485
Buzzer	ON/OFF
Inner Fuse	3A
Operating Temperature	-20℃~+60℃
Dimensio/weight	156mm*93mm *51mm/350g

## Catalogue

<b>Product Outline .....</b>	<b>1</b>
<b>Important Safety and Cautious Information.....</b>	<b>1</b>
<b>Transportation and Storage .....</b>	<b>1</b>
<b>Noticing Items While Using.....</b>	<b>2</b>
<b>Advised Wires.....</b>	<b>2</b>
<b>Performance .....</b>	<b>3</b>
<b>Product appearance .....</b>	<b>4</b>
<b>Front Panel .....</b>	<b>4</b>
<b>Side panel.....</b>	<b>6</b>
<b>Back panel.....</b>	<b>7</b>
<b>Function instruction.....</b>	<b>8</b>
<b>Menu instruction.....</b>	<b>10</b>
<b>Information display menu .....</b>	<b>10</b>
<b>Communication parameter edit menu .....</b>	<b>12</b>
<b>Operation instruction .....</b>	<b>15</b>
<b>Power on / off.....</b>	<b>15</b>
<b>Dome and decoder parameter edit.....</b>	<b>16</b>
<b>P/T and Len Control .....</b>	<b>17</b>
<b>Edit or call preset .....</b>	<b>18</b>

<b>Others.....</b>	<b>19</b>
<b>Operation of presets and key-press special function.....</b>	<b>22</b>
<b>    Main Menu Call (Speed dome) .....</b>	<b>22</b>
<b>    Scanning Function.....</b>	<b>23</b>
<b>    Other special orders of presets.....</b>	<b>23</b>
<b>    Special function of key-press.....</b>	<b>24</b>
<b>Performance Parameter .....</b>	<b>26</b>
<b>Simple Failure and Solution.....</b>	<b>27</b>
<b>After-sales service and measures .....</b>	<b>Error! Bookmark not defined.</b>

is “image choice;”; It means “enlarge privacy zones up and down” during “privacy zone edit”

- **Remarks:** That if P/T up-down orders are operated continuously can quicken changing speed during “dome menu operation”;The cursor will jump over directly if the current item is unprogrammable when we choose item up-down on the menu.

Call preset 98——Frame scan

Call preset 99——Auto scan

## Special function of key-press

Multi-function test keyboard not only has the function of its built-in menu's edit, operation,,dome control, but also has the function of built-in menu of the dome.

### 1、Function instruction of the keyboard

**【↑】** key, dome will move upwards when it is “image interface”; move the menu items or change the parameters when “menu edit”downwards.

**【↓】** key, dome will move upwards when it is “image interface”; move the menu items or change the parameters when “menu edit”downwards.

**【←】** key, means “camera trun left”

**【→】** key, means “camera trun right”

**【OPEN】** key, open iris order, enlarge iris when “image interface”.It means “enter into sub-menu or some item” when it is “dome menu edit”, and save edit value after programming.

**【CLOSE】** key, close iris order, minish iris when “image interface”.It means “exit up-menu or some item” when it is “dome menu edit”, and save edit value after programming.

**【FAR】** key, far focus, means images focused far. It means “enlarge privacy zone around” when it is “menu privacy zone edit”

**【NEAR】** key, near focus, means images focused not far. It means “minish privacy zone around” when it is “menu privacy zone edit”

**【WIDE】** key, push lens far, It means “minish lens' enlarging zoom”when it is “image choice;”; It means “minish privacy zones up and down” during “privacy zone edit”

**【TELE】** key, pull lens near, It means “enlarge lens' enlarging zoom”when it

## Product Outline

This product is researched and manufactured by ourselves independently, and can apply to many different situations, especially for projects' as debugging device in CCTV monitoring systems. It is helpful for projects builder in terms of eliminating hidden troubles, promoting efficiency, as well as lowering the projects cost.

## Important Safety and Cautious Information

### Transportation and Storage

1. You should be careful in transportation, and avoid rolling, colliding and falling off.
2. The keyboard is stored in the place where it is good for ventilation, temperature between -10 °C to +50 °C, humidity les than 90%, and no acid, alkali, and harmful gas.
3. It can be placed within 6 months on the condition that there is no cover and good ventilation. If you store it more than one year, it should be retested under the normal temperature.
4. If there is a big difference in temperature between different environments, please don't power on at once, it should be power on after some time. Don't use this product under the severe atmosphere. It is usually used under the circumstance-temperature between 0°C to +40°C, humidity less than 90%.
5. Please avoid using detergent to clean it, you should use dry clothand if it is dirty badly, please use neutral detergent lightly.

## Noticing Items While Using

Please read the following cautious information before using:

1. We should abide the local electric regulation during using.
2. Be careful to use it, to protect component and assure it work normally, we should avoid colliding and shaking it severely.
3. Don't use it in damp place, if it is effected with damp, please leave it power off and disconnected with other wires, and then consult to maintenance man . Because it may cause danger or destroy the system.
4. Don't dismantle it without permission, no users serviceable parts in it, and refer servicing to qualified service personnels.
5. We should test whether it is insulated well or not between circuit parts and cover after reinstalling or maintenance to insure there is no short circuit.

## Advised Wires

1. 9V/2A connecting distance and wires required:

Power line diameter	0.5mm	1.0mm	1.5mm	2.5mm
9V/2A power	25m	45m	70m	110m

2. General requirements of video cable:

Video Cable Model No.	The longest Distance
75-2	150m
75-3	about200m
75-4	about270m

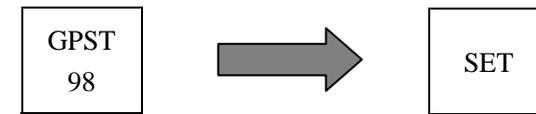
Video Cable Model No.	The longest Distance
75-5	about370m
75-7	about500m
75-9	about680m

- **Remarks:** It can be edited an operated by the partial keys on it after calling the main menu.Regarding the specific operation, please refer to the dome manual.

## Scanning Function

**Stop scan**——Any effective orders received can stop scan.

**Run frame scan**——Call preset 98



**Run auto scan**——Call preset 99



## Other special orders of presets

anThe operation methods of special orders of presets are the same as methods of "presets call", we will not give you more explanation.

Call preset 33——execute 180 degree auto flip.

Call preset 34——execute P/T horizontal zero recovery

Call preset 64——Enter into main menu

Call preset 95——Enter into main menu or stop PATTERN record

Call preset 96——Pattern1 scan

Call preset 97——Preset route 1 scan

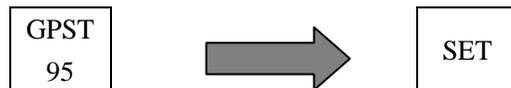
## Operation of presets and key-press special function

In this chapter, we will take our own intelligent speed dome that are researched and manufactured independently as example to introduce the products' special using methods of partial keys and presets.

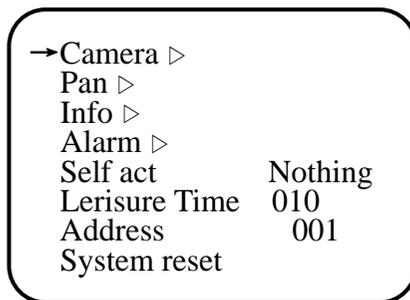
Well, we take our keyboard and speed dome as an example here. Controllers' methods of presets and menus call vary from manufacturer to manufacturer. Please be based on the current operation and manual of operating system and speed dome.

### Main Menu Call (Speed dome)

Call preset 95/64 to enter into main menu, choose "GPST" menu subject under the screen information display menu. press "↑"key continuously until jump to preset 95/64, press **【SET】** for confirmation.



### Dome Main Menu



- A** Camera function edit
- B** P/T function setup
- C** System information edit
- D** Alarm function edit
- E** Self-act function edit
- F** Lerisure time
- G** Address
- H** System reset edit

- **Remarks:** As for the same model No.. there is some difference due to various manufacturers, the above value regarding the video cable is just for reference.

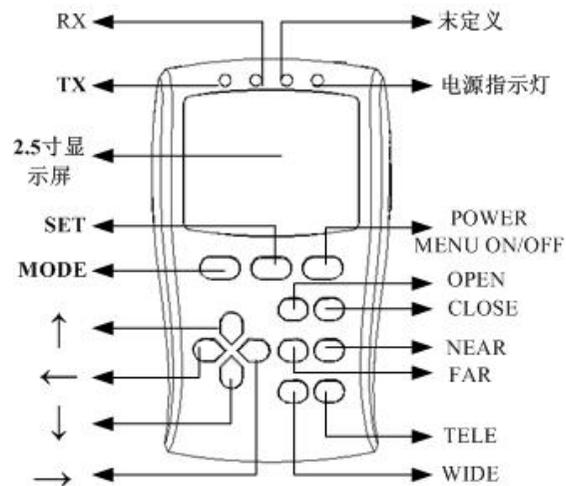
## Performance

- ✦ Portable, 2.5"LCD monitor(Video input/output)
- ✦ NTSC/PAL auto adaptive
- ✦ Control running of camera(or P/T),zoom, adjust aperture,focus as well as specification setup programme.
- ✦ Support multi-protocol and baud rate.
- ✦ Call or store preset freely, position accurately
- ✦ Support presets' special usage
- ✦ Save electricity mode (0-30 seconds selectable)
- ✦ Small and exquisite appearance、 integrated and practical.

## Product appearance

This section introduces its appearance features and basic operation of menu, such as moving menu items, choosing menu items, changing value, confirming saving setup value and exiting menu. As for the dome structure's menu keys instruction, Is the common market PECOL series of high-speed intelligent signal as an example of , so it is just for your reference.

### Front Panel



Various Key-press instruction:

**【2.5" display】** LCD area is used to display current controlling situation, video input images and other information to be showed.

**【TX indicator】** TXD indicator light, green

**【RX indicator】** RXD indicator light, green

**【POWER indicator】** Task indicator light, red

- **Don't put the battery in reverse when battery is in charging ( the logo of the positive and negative have been printed on the charger, please follow the instruction when charging);**
- **During charging, the indicator light will show in red. When the battery is fully charged, the indicator light will show in green;**
- **The battery's working voltage is between 3.7V~4.27V;**
- **Don't put the saturation battery into the charger, otherwise the battery will lost its power in a short time, and this will also affect the lifetime of the battery**
- **The lithium battery and charger can't stay in the high temperature environment or close to fire, or put it into the fire directly.**

and can be used.. while if there is no character on **【GPST】**, it means the net wire can't work(can not used in network communication)

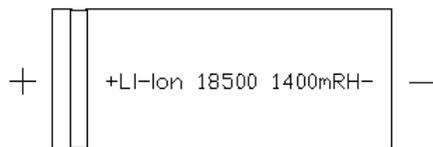
### ■ Storage Battery Charge

Our tester was made for the camera installation work, convenience carry when using the re-chargeable battery. 4-5 hours working time after one time fully re-charging. The battery capacity will affect the tester's function to be achieved, so we strongly recommend taking out the battery from the main unit after using.



#### Attention:

- **Instruction of the battery charging: External charger can re-charge 2pcs lithium battery at the same time;**
- **The Duration of One time fully re-charging (2 batteries): 8-10 hours, Tester working time after re-charging (2 batteries): 4-5 hours;**
- **Lithium battery's working voltage is between 2.75V~4.27V (When the voltage of the battery is under 2.75V, you must re-charge it in time. If you use the low voltage battery continuously, it might damage the battery perpetually; otherwise if the voltage of the battery is higher 4.27V, the battery will be over loaded);**
- **The directions of positive and negative:**



**【 POWER/MENU 】** Power supply switch command key&menu command key.

**【SET】** Menu edit key-press, choose menu bar and save menu edit.

**【MODE】** Mode edit key-press, choose menu items.

**【 ↑ 】** key , dome will move upwards when displaying image interface;move menu items upwards or change specification when it is “menu-editing”

**【 ↓ 】** key , dome will move downwards when displaying image interface;move menu items downwards or change specification when it is “menu-editing”

**【 ← 】** key , dome will move leftwards when displaying image interface;move menu items leftwards or change specification upwards when it is “menu-editing”

**【 → 】** key , dome will move rightwards when displaying image interface;move menu items rightwards or change specification downwards when it is “menu-editing”

**【OPEN】** key, aperture open order

**【CLOSE】** key, aperture close order、

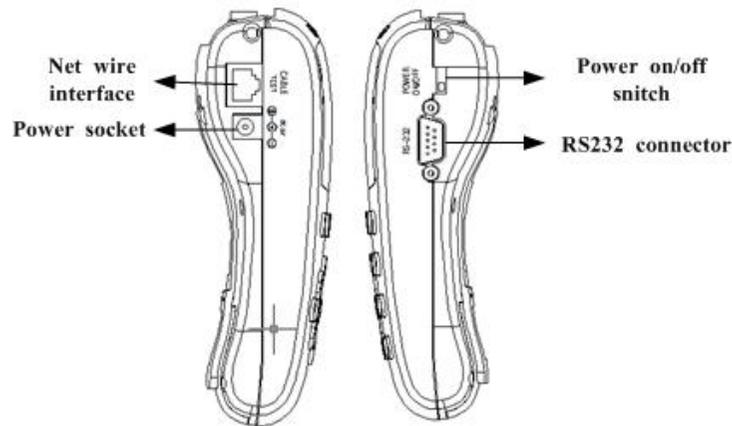
**【FAR】** key, far focus, means image focus far

**【NEAR】** key, near focus, means image focus near

**【WIDE】** key, push len far, stands for minishing len's enlarging zoom when it is “image-choosing”

**【TELE】** key, pull len near, stands for increasing len's enlarging zoom when it is “image-choosing”

## Side panel

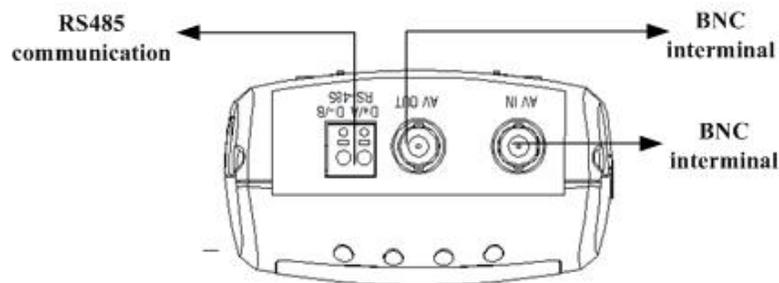


Interface instruction:

**CABLE TEST:** Net wire test interface

**Power Socket:** Power supply interface

**Disconnect switch:** ON/OFF



Interface instruction:

**RS485 communication terminal:** RS485 communication connection terminal.

- Remarks:** The saving of presets are finished by speed dome, so there is no need to save the preset when setting it, exit directly after programming.

## Others

### ■ Buzzer

For users, whether it is On/Off depends on the personal preference

1. Enter into menu communication parameter to edit menu, press P/T controlling key “↑”、“↓”, move to “BELL” state.
2. Press P/T controlling key “←”、“→” to choose “ON” / “OFF”, no need to control, exit directly.

### ■ Electricity-saving mode

It refers to dormancy/resting state due to auto power off when it is not used during setting time. You can setup the products' electricity-saving time by this item. And it is necessary for the users who take storage battery as power supply.

1. Enter into communication parameter edit menu, press P/T controlling key “↑”、“↓”, and move to “SLEEP” state.
2. Press P/T controlling key “←”、“→” to choose time to be set, 0-30MIN selectable. “→” stands for increase by degrees, “←” stands for decrease. Press “←”、“→” key continuously can quicken changing speed.

**Attention:** When electricity-saving mode is set 0MIN, it is power on instead of resting state no matter how long it is not used.

### ■ Net wire Test

It is equipped with net wire test port, just insert one side of the net wire to the wire test port, the other side of the net wire test terminal of the product. When testing, under OSD state, if **【GPST】** subject displays the following character- “**CABLE OK**”, then it means the net wire is good

If users want to control P/T or lens, set parameters according to “Dome and decoder edit” instruction, and then you can reach the needed picture just by using the above keys.

**Attention:** Iris adjusting key can't work under the auto iris mode, only when it is manual iris mode, can it be effective.

## Edit or call preset

We have showed you the simple introduction of menu setup, call preset. And now you will be provided reaching methods in detail.

### ■ Preset setup

- 1、 On the basis of P/T and lens controllable, adjust cameras to the position to be edited.
- 2、 Enter into screen information display menu, press **【SET】** key twice, “GPST” under the “screen information display menu” flickers.
- 3、 Press P/T key “←”、“→” to choose “SPST”.
- 4、 Press P/T key “↑”、“↓” to choose preset No. to be edited, press **【MENU】** to exit screen information display menu or press **【SET】** key to exit menu edit state.

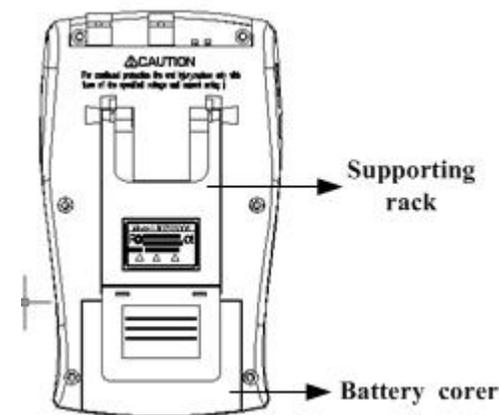
● **Remarks:** Speed dome can be controlled under the two situation.

### ■ Preset call

- 1、 after presets setup, turn the dome, move to other scene.
- 2、 enter into screen information display menu, press **【SET】** key, “GPST” under the screen information display menu flickers, press P/T controlling key “↑”、“↓” to choose preset No. to be called..
- 3、 Press **【SET】 for confirmation**, camera moves to the preset right away, and lens's zoom, focus, iris will change to the parameter set before. the image displays on the monitor.

**BNC interface:** video input/output interface

## Back panel



## Function instruction

This product's main function and general principle in CCTV monitoring system are introduced simply as follows except specific operation methods.

### 1. Image Test

Connect cameras to test keyboard directly by video cable, with built-in monitor, so as to see the image conveniently.

### 2. Dome or decoder control

Users can control P/T up-down, left-right running, as well as integrated dome's zoom, focus, apertures by controlling key-press on the panel on the condition that there is correct connection between RS485 or RS232 & test keyboard, matching the specification of dome.

- **Remarks:** Aperture adjusting key isn't useful under the auto aperture mode. Only during manual aperture mode, can it be effective.

### 3. Preset call or setup

This function means that the dome can store the current P/T horizontal angle, incline angle, camera lens's focus.... in the memorizer, operator can store or call "preset" out quickly by controlling keyboard, have P/T and cam adjusted to the position. This model can store 256 presets upmost.

In addition, this test keyboard support some special usage, Is the common market PECOL series of high-speed intelligent signal as an example of, just call preset 64/95 by the test keyboard, you can enter into main menu, and also can edit the specification by operating it.

### 4. Net wire test

Unique network test function, can test the network problem simply, practically, conveniently in short notice.

It is equipped with one testing gadget for the users after leaving factory.

### ■ Dome parameter edit

- 1、Enter into menu screen information display menu, "ADDR" flickers, can choose menu subjects by using P/T controlling key "→"、"←". "→" means "move right-hand side", "←" means "move left-hand side".
- 2、To change parameters of menu subjects, you can edit by P/T control key "↑"、"↓".
- 3、Press editing key **【SET】** to save after programming
- 4、Press editing key **【SET】** to exit editing state (information display menu on menu screen still exist), or press **【MENU】** to exit.

**Attention:** The speed dome can be controlled under the screen information display menu. (when choosing no edit subject), additionally, during dome parameter edit, be sure to enter into communication parameter edit menu to have communication terminal and baud rate programmed in advance, or, only carry out "BAUDRATE" item can't be effective to the speed dome

## P/T and Len Control

There are 10 keys on the panel for controlling P/T and len:

↑	P/T up
↓	P/T down
←	P/T left
→	P/T right
OPEN	Aperture on
CLOSE	Aperture off
FAR	Focus far
NEAR	Focus near
WIDE	Visual angle wide
TELE	Visual angle tele

- **Remarks:** At this time, the equipment is in low power consumption, and still consume small part of electricity.

Power off:

1、 Set on the right-hand side of the product“Power On/Off Switch” on the side of it under “OFF” state

- **Remarks:** the power supply is cut off here, won't consume battery's electricity. Use this method to power off when long time no ues.

2、 press **【POWER】** key continuously ( more than 3seconds)

**Attention:** when we use storage battery as its power supply, be sure to keep battery full,. We recommend you keep “Power On/Off Switch” on the side of it under “OFF” state and take out the storage battery.

## Dome and decoder parameter edit

As we all know, controller's dome address, protocol, baud rate should be matched with speed dome, only in this way, can controller be effective.

Let's introduct the editing methods of dome parameter regarding this product. Please operate it as following steps.

- Communication serial interface chiose

1、 Enter into communication edit menu, use P/T controlling key-press “↑”、“↓” to choose menu subject, when the subject flickers, it is in editing situation.

2、 Change parameter of menu subject, can edit by controlling P/T key “→”、“←”。

3、 Press editing key **【SET】** to save after programming

4、 Press **【MODE】** to exit communication parameter menu, enter into information display menu or press **【MENU】** to exit menu display.

## 5. Lithium Rechargeable battery

Multi-functional test keyboard can use both DC 9V/2A and 3.6V lithium battery power supply in the same time. In our standard package, you will find 4pcs 3.6V lithium battery and 1pcs charger in the box. Please kindly refer to the page 19 for the guidance of recharging operation.

- The storage battery must fully charge and discharge one time during the first 3 month using, otherwise it will have a serious influence on the life time of the battery.

- **Remarks:** when there is something unusual happened, please refer to“Simple failure and solutions”in appendix, if you can't solve the problem, please don't dismantle yourself, contact with manufacturer or maintenance man timely, and deliver to the manufacture or eliminate the trouble under the guide of qualified personnel.

## Menu instruction

When it is power on, input video image displayed, information display menu popped up, power indicator LED is on.

Display information menu and communication parameter menu are the same as restore factory after re-power on if power failure. And we'd like to remind you that you have to re-edit menu contents in this case.

### Information display menu

It will be popped out actively when power on, the main contents : dome parameter, camera FM and preset, dome horizontal/vertical control speed.... By the way, the camera signal system can't be edited. The users can edit other items by using the key-press on the panel.

#### ■ Enter into information display menu

Press **【MENU】**, open information display menu, click and press editing-key- **【SET】**, enter into display menu (editing menu).

Information display menu as follows:

ADDR	PROTOCOL	BAUDRATE
1	PELCO-P	9600

PAL

GPST	SPST	PSPD	TSPD
1	1	16	16

## Operation instruction

Menu built-in, users can edit matched address, control protocol, baud rate with dome or decoder, and communication serial interface or serial interface baud rate available. In order to avoid causing unnecessary problem, for the first-time users, be sure to read the manual in advance, and the operation details are as follows:

### Power on / off

#### ■ Connect 9V/2A outside (out:- inner:+)

Power on: 1、 auto power on when electrical source connected  
2、 Dormancy state power on: press **【POWER】** key continuously (more than 3 seconds)

Power off: press **【POWER】** key continuously (more than 3 seconds)

**Attentions:** when connect 9V/2.5A, don't move side switch freely, and check the power supply if it is "out:-inner:+", otherwise, it may destroy dome and affect its life-span further!

In addition, if it is not used for a long time, we recommend you keep "Power On/Off Switch" on the side of it under "OFF" state or cut off the power source.

#### ■ Storage Battery

Power on:

- 1、 Keep its "Power On/Off Switch" during "ON" state
- 2、 Dormancy time power on: press **【POWER】** key continuously (more than 3 seconds)

## 3. USE COM

COM interface setup, RS485、RS232communication serial interface selectable, press “→”、“←”key to carry out, factory default value COM is RS232

## 4. BELL

Buzzer switch setup, factory default value is “OFF”, press “→”、“←” key to edit.

## 5. SLEEP

Dormancy/resting time setup,0~30MIN available。 Factory default value is 10MIN

■ **Remarks:** the table mentioned above presents the factory default value,users can alter the parameters practically, as for the specific operating methods, please see the instruction as follows:

■ **Exit information display menu**

1. Exit editing situation, press “→”、“←” key continuously until there is no flicker for the menu subject;
2. Press **【MODE】** key, exit this item and switch tocommunication parameter menu;
3. Press **【MENU】** key, exit menu display.

■ **Menu instruction**

1. ADDR (speed dome or decoder add selection)  
1-255selectable, when choose their add, press “↑”、“↓” keys, “↑” stands for increase by degrees “↓” means depression. press “↑”、“↓” , can improve speed of figure.
2. PROTOCOL (control protocol setup)  
Integrated multi-protocol, such as PECOL-D、PECOL-P、SAMSUNG, also include our own protocol “BEIEOT”, can add protocols according to the customer’s requirement.
3. BAUDRATE (baudrate setup)  
2400bps、4800bps、9600 bps、19200 bps selectable, press “→”、“←” keys to carry out, “→” means increase by degree, “←” means depression.
4. PAL/NTSC (video signal system)  
Auto adaptive, no need to be edited by users.If the cameras used is PAL, then PAL will display on the video signal system column; if the cameras are NTSC, then NTSC will display; these two kinds can’t be displayed simultaneously.

## 5. GPST (GOTO PRESET Preset call)

Presets quantity is decided by controlling protocol, 256 presets available for this model, without lower limit. When choosing preset No. press “↑”、“↓”, “↑” means increase by degree, “↓” means degression .press “↑”、“↓” key continuously, can improve speed of figure.

## 6. SPST (SETUP PRESET )

Presets quantity is decided by controlling protocol, 256 presets available for this model, without lower limit. When choosing preset No. press “↑”、“↓”, “↑” means increase by degree, “↓” means degression .press “↑”、“↓” key continuously, can improve speed of figure.

## 7. PSPD (PAN SPEED )

It depends on controlling protocol, 0-64levels selectable.press “↑”、“↓” keys to carry out. “↑” means increase by degree, “↓” means degression .press “↑”、“↓” key continuously, can improve speed of figure.

## 8. TSPD (TILT SPEED )

It depends on controlling protocol, 0-64levels selectable.press “↑”、“↓” keys to carry out. “↑” means increase by degree, “↓” means degression .press “↑”、“↓” key continuously, can improve speed of figure.

## Communication parameter edit menu

It is mainly used in “Communication serial interface chois”, such as communication serial interface, baud rate, buzzer situation, dormancy time editing.

- Enter into communication parameter edit menu
- Enter into information display menu first, press **【MODE】** key: Enter into communication parameter edit menu, contents as follows:

232	BAUDRAT	9600
485	BAUDRAT	9600
USE	COM	COM 232
BELL		OFF
SLEEP		10 MIN

- **Remarks:** the table mentioned above presents the factory default value, users can alter the parameters practically, as for the specific operating methods, please see the instruction as follows:

### ■ Exit communication parameter edit menu

1. press **【SET】** key twice, then you can exit;
2. press **【MODE】** key, Exit communication parameter edit menu, and switch to information display menu.;
3. press **【MENU】** key, exit menu display.

### ■ State instruction

1. 232 BAUDRAT  
232 communication serial interface baud rate setup, 2400 bps、4800 bps、9600 bps、19200 bps 4 selections Baud rate selectable, press “→”、“←” key, “→” means degression, “←” stands for increase by degree. Factory default value is 9600bps.
2. 485 BAUDRAT  
485 communication serial interface baud rate setup, 2400 bps、4800 bps、9600 bps、19200 bps 4 selections, press “→”、“←” key, “→” means degression, “←” stands for increase by degree. Factory default value is 9600bps.