
Medium Variable Speed Intelligent PTZ User Manual

V1.0

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1. Safety Precautions.

1.1 Warning

1.1.1 Before installing and using this equipment, please read the user manual carefully and keep it for the future use.

1.1.2 Observe all warnings of the user manual, and follow all operation of it.

1.1.3 Before cleaning, power off firstly, do not use liquid or spray cleaner, please clean it with wet cloth

1.1.4 Should use the dealer or our company recommended accessories, otherwise it may lead to failure.

1.1.5 This product should use the type and voltage of the power supply specified in the user manual, such as the power supply at the installation site, and the voltage is not clear, please contact the dealer or our company.

1.1.6 The power cord, plug and camera cable should be properly protected

1.1.7 PTZ RS-485 and video signal using lightning protection and TVS transient technology, can be effective to prevent the less than 2000 V lightning, surge and other types of pulse signal damage to the equipment, RS-485

and video signal during transmission should keep enough distance between high pressure equipment or cable, if necessary, make a good job of anti-lightning, anti-surge and other protective measures. To prevent lightning, please install lightning arrester

Cable must be in accordance with national standard GB 50198 (civil closed-circuit monitoring television system engineering technical specifications) to do reliable

Ground, if not take the appropriate lightning protection grounding measures, will damage the PTZ, the ground and the ptz, the resistance is less than 4Ω.

1.1.8 Avoid fire or electric shock, do not allow the installation cable of the equipment too long to cause an overload

1.1.9 Should prevent the foreign body into the ptz and do not let corrosive liquid splashed ptz, to prevent danger.

1.1.10 Do not install on the not strong bracket and wall, otherwise casue people or ptz damaged

1.1.11 Please do not store, install and use PTZ in flammable and explosive areas

1.1.12 Please do not install and use the cloud near too wet, dusty, dusty places and heat sources station.

1.1.13 If ptz has abnormal smell or smoke should be discontinued immediately and power off the power supply, then contact the supplier.

1.1.14 Due to open the back housing, it may cause electric shock or other dangerous, do not maintain by yourself, all maintain cases please contact our company directly.

1.1.15 If you meet the following situation, please contact us:

a. Power supply, RS485 control cable damaged

b. Use wrong power supply type and voltage

c. If fall down or housing damaged

d. Abnormal in function

e. Can not work normally according to user manual operation

1.1.16 When replacing parts, please use parts that are approved by our company or have

the same performance as the original parts. Acceptable substitutes may cause danger.

1.1.17 When the product is installed to strengthen the fastening, it is recommended to use the thread fastening glue.

1.2 Precautions

1.2.1 Transport, storage and installation process, should prevent heavy pressure, severe vibration and flooding, otherwise it will cause damage to the equipment.

1.2.2 Keep the pan / tilt away from vibrations or where magnetic fields interfere with.

1.2.3 If you want to change the installed PTZ position, please ensure the power off, then you mobile it or install PTZ once again

1.2.4 Install the equipment in a well ventilated location.

1.2.5 If PTZ doesn't work abnormal, please contact supplier, do not disassemble or modify the PTZ. The manufacturer is not responsible for any problems caused by unauthorized modifications or repairs.

1.2.6 Do not use chemical clean the PTZ surface, it may cause deformation of the PTZ surface or damage to the protective layer.

1.2.7 Do not aim the camera installed PTZ of a light object, whether it is used or not, It must never be aimed at the sun or other bright objects, otherwise it may cause the camera CCD is permanently damaged.

1.2.8 PTZ is installed outdoor, should be effective to take waterproof, moisture-proof, anti-dust immersion measures, for example: PTZ waterproof connector must be tightened.

NOTE: Before power on, must insulate all the leaky wire bundles of the pan / tilt to shield to avoid of product damaged because of short circuit

2. Product Introduction.

2.1 Product Application.

Variable speed PTZ as a high-performance monitoring products, the fuselage and shell are selected high-strength aluminum alloy material, with a comprehensive, stable and reliable, easy to use and installation features, and because of its high cost, will become security industry's mainstream products. This section of the PTZ has a reliable speed, 360 degree continuous rotation, automatic scanning, automatic cruise and other functions, suitable for large area area monitoring, can achieve high-end products, popular features, widely used in airports, railway stations, roads, forests, coastal defense, transportation, enterprises, warehouses, squares, residential areas and other important areas.

2.2 Product Features.

2.2.1 Variable speed intelligent PTZ, body and shell selection of high-strength aluminum alloy materials, PTZ transmission using the worm mode, and the PTZ running smoothly

2.2.2 Top load mode, max load 20kg.

2.2.3 With preset, automatic scanning, automatic cruise and other functions.

2.3 Technical parameter

Input voltage	AC24V / DC24V ±10%
Power	≤90W
PTZ housing cable	Output power ≤48W

AC24V	
PTZ housing cable DC12V	Output power $\leq 24W$
Pan rotation angle	0 ~ 360 °continuously rotation
Tilt rotation angle	-75 ° ~ +40 ° Max up to- 90 ° ~ +40 ° (customized)
Pan rotation speed	0.01 %s ~ 40 %s
Tilt rotation speed	0.01 %s ~ 15 %s
Lens control	PTZ with lens preset interface
Protocol	PECLO-D / PELCO-P
Communication baud rate	2,400/4,800/9,600/19200 bps
Communication mode	RS485/RS422 (optional)
Preset	Can set 256 pcs
Auto scanning	8
Auto cruise	8
Watch	Supports line sweep / cruise / presets
Independent video BNC	1channel/pass through
Relay auxiliary switch output	2 Groups
Protect grade	IP66
Electromagnetic compatibility	GB/T17626.5-2008
Installation	Outdoor
Working temperature	-35 ~ °C 55°C
Environment humidity	<90%RH
Dimension	261*277*333 (mm)
PTZ Weight	15KG
Max load	Top load 20kg
Material	Body and shell selection of aluminum alloy material

3. Installation.

3.1

Based on this product can be achieved 360 ° continuous rotation, when need to install the housing or other top load, make sure that the installation site has enough space to accommodate the product and its mounting components. As this product contains rotation parts, and it is necessary to confirm that the product installation is enough strength. To ensure safety, the supports supporting the pan / tilt and shield shall bear at least 2 times the total weight of the pan / tilt and shield.

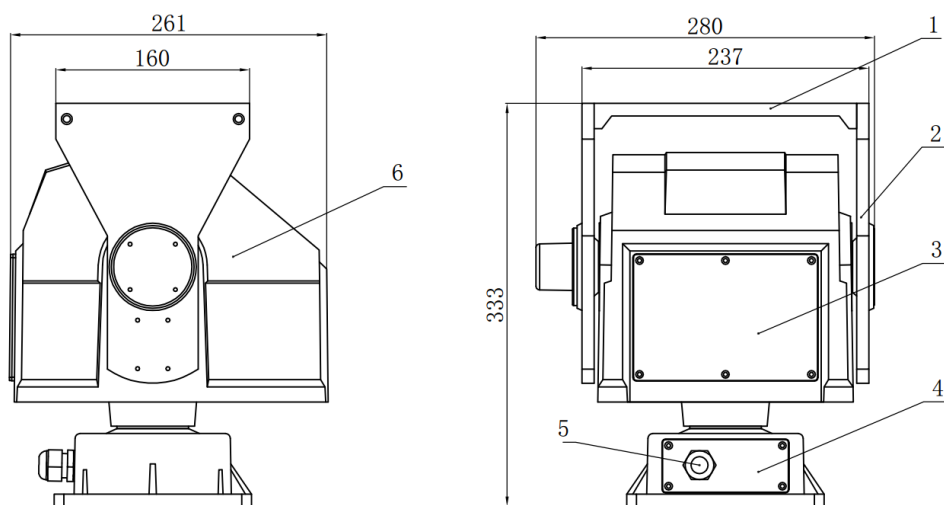
3.2 Cable preparation.

Choose cable according to transmission distance:

3.3 AC24V power cable: Use a power cable that is sufficient to withstand the load. The following data for your reference

Cable diameter (mm)	0.80	1.00	1.25	2.00
Distance (m)				
Power (w)				
30	28	45	72	183
40	21	34	54	137
50	17	27	43	100
60	14	22	36	91
70	12	19	31	78
80	10	17	27	68
90	9	15	24	61
100	8	13	21	55
110	7	12	19	49
120	7	11	17	45
130	6	10	16	42
140	6	9	15	39
150	5	9	14	36
160	5	8	13	34
170	4	7	12	32
180	4	7	11	30
190	4	7	11	28
200	4	6	10	27

3.4 Structural description



Graphic:

- | | |
|--------------------|---------------------|
| 1、 Top plate | 4、 Base |
| 2、 Side plate | 5、 Base outlet hole |
| 3、 Mainboard cover | 6、 Shell |

3.5DIP switch setting and terminating connection.

Use the Phillips screwdriver to loosen the six crosshead countersunk stainless steel screws on the front cover of the housing. Remove board, you can see DIP switch on the circuit board.

- 1.ID choose DIP switch(SW2) ten DIP
- 2.Baud rate protocol choose DIP switch(SW3) six DIP
- 3.6.Set PTZ terminal resistance

ID choose DIP switch(SW2) the ninth DIP connect RS485's 120Ω terminal resistance, When PTZ is setted RS485 at the end of communication bus, it should be setted ON position

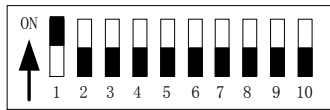
3.7Set PTZ communication protocol.

SW2 set ptz address, PTZ address range 1~255。 From DIP-8 to DIP-1 equivalent to one 8 bit binary number。 DIP-8 is highest position, DIP-1 is the lowest position.Each position's“ON” means 1, “OFF” means 0。 The following is part of the address code of the DIP table

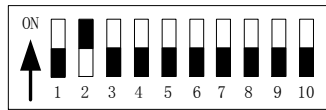
Dome Address	The status of the DIP switch							
	DIP-1	DIP-2	DIP-3	DIP-4	DIP-5	DIP-6	DIP-7	DIP-8
1	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF
5	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF
6	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF
7	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
8	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF
9	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF
10	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF
11	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
12	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF
13	ON	OFF	ON	ON	OFF	OFF	OFF	OFF
14	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
15	ON	ON	ON	ON	OFF	OFF	OFF	OFF
16	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF
17	ON	OFF	OFF	OFF	ON	OFF	OFF	OFF
18	OFF	ON	OFF	OFF	ON	OFF	OFF	OFF
...
255	ON	ON	ON	ON	ON	ON	ON	ON

Table 1

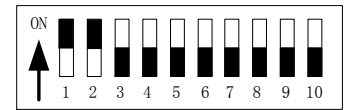
Example:



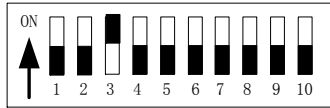
Speed Dome Address=1



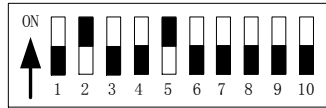
Speed Dome Address=2



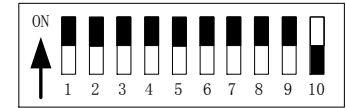
Speed Dome Address=3



Speed Dome Address=4



Speed Dome Address=18



Speed Dome Address=512

3.8 Protocol and the default baud rate is set. Figure 2 shows, SW3 set PTZ using communication protocol and baud rate. SW3's DIP-4 choose protocol, set DIP-4 to be OFF, is PELCL-D protocol.

Protocol	Communication protocol choose				Commonly used baud rate	
	DIP-1	DIP-2	DIP-3	DIP-4	DIP-5	DIP-6
PELCO-D				OFF	OFF	OFF
PELCO-P				ON	OFF	ON

Table 2

3.9 Communication baud rate set. Figure 2 as shown, SW1 set PTZ communication protocol and baud rate. SW2's DIP-6, DIP-5 choose communication baud rate, at most choose 4 kinds of baud rate. If the controller using nonstandard baud rate, please follow the table below to adjust the baud rate used in PTZ to match the host.

Communication baud rate	DIP-1	DIP-2	DIP-3	DIP-4	Baud rate setting	
					DIP-5	DIP-6
2400bps					OFF	OFF
4800bps					ON	OFF
9600bps					OFF	ON
19200bps					ON	ON

4. Cable definition

4.1 PTZ base integrated cable definition.

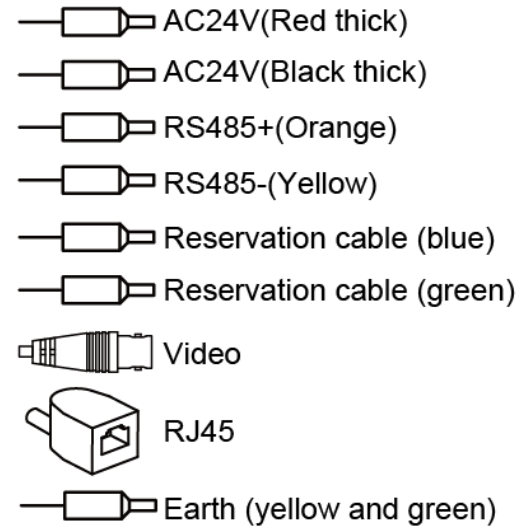


Figure 1

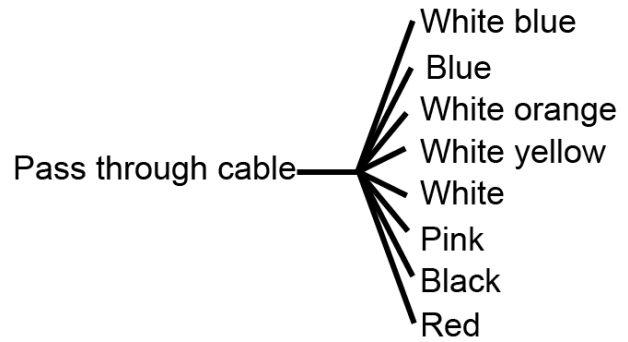


Figure 2

Remarks: Integrated cable pass through cable color and the color of the housing cable is one to one correspondence.

*After installation of PTZ earth cable (yellow green cable) Must be effective and reliable grounding.

4.2 PTZ output cable (housing cable) .

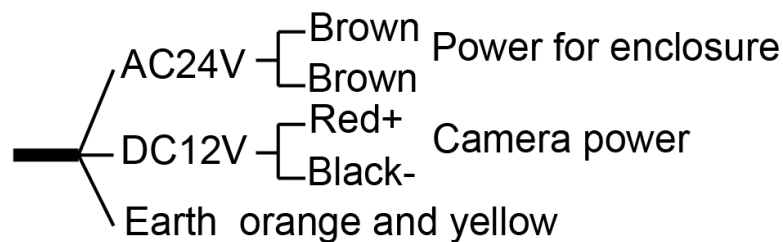


Figure 3

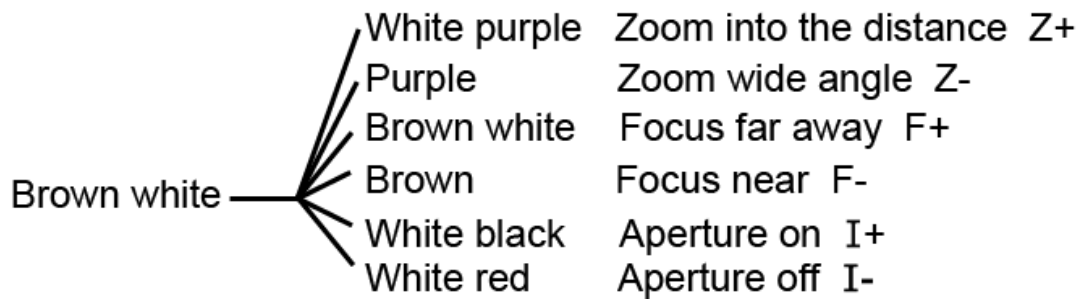


Figure 4

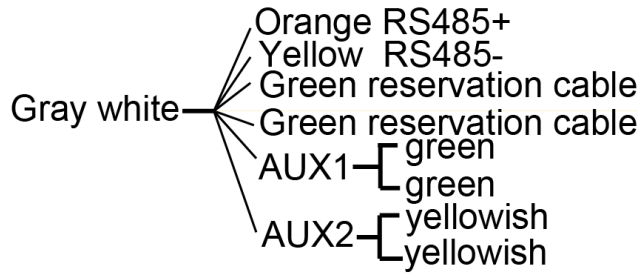


Figure 5

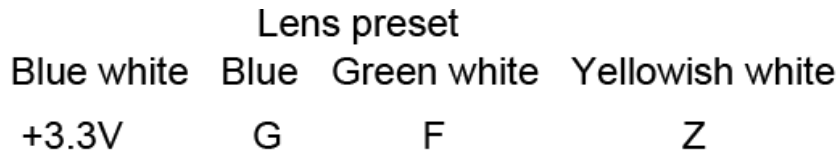


Figure 6

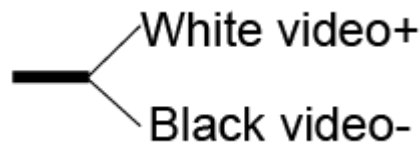


Figure 7

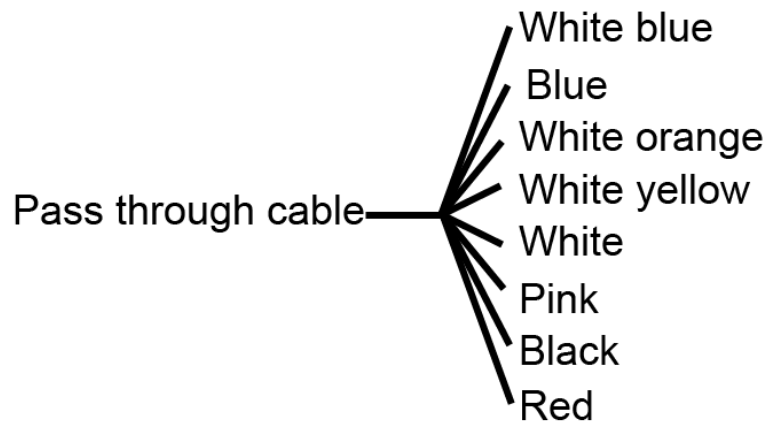


Figure 8

Remarks: The pass through cable in the house corresponds to the pass through cable color of the PTZ integrated cable.

RJ45 Internet cable and PTZ integrated cable pass through the cable.

4.3 Installation dimension

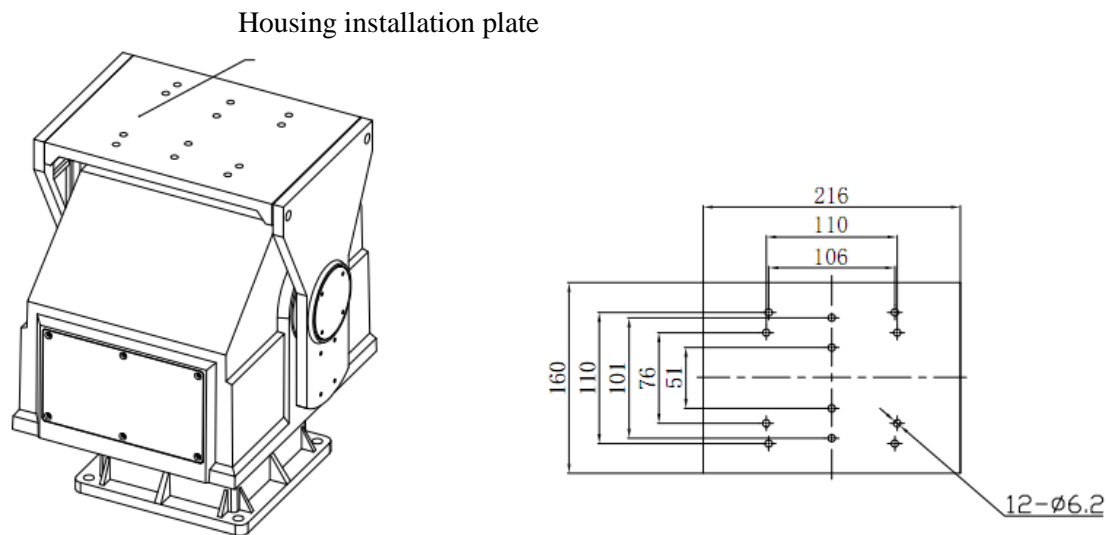
4.3.1 Housing installation plate dimension schematic diagram

Note: The dimensions in parentheses are the ptz after installation housing dimension, to prevent the housing from colliding with the workbench during operation, the base needs to be dimensioned.

4.3.2 Before housing installation, using M4 Hexagon wrenches handle the hood mounting plate with the left and right side plates 4 pcs M5×14 Hexagon socketless stainless steel screws

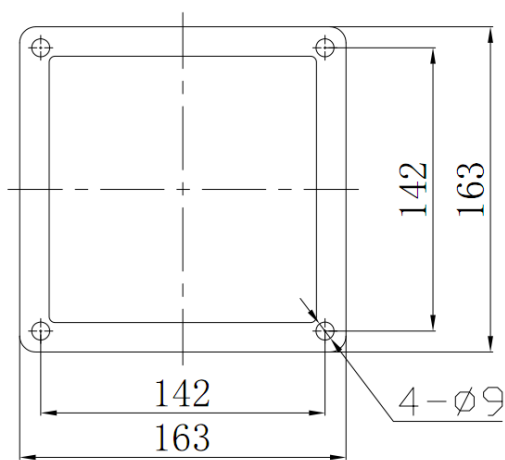
loose, then remove housing installation plate, fixed the housing to the housing installation plate with the appropriate screws

4.3.3 Using installation housing plate with 4pcs M5×14 Hexagon socketless stainless steel screws are fixed with left and right side plates.



Housing installation plate schematic diagram

4.3.4 Base mounting dimensions schematic diagram



Base dimension schematic diagram

5.PTZ Special function operation:

8 channels Linear scanning

5.1 Steps:

- ① SET 92、93 preset Set the left and right scan boundaries separately
- ② SET 80 (81/82/83/84/85/86/87) preset, set 1 channel linear scanning;
- ③ Repeat①、② step can set other scan path
- ④ Through 88、89 preset set scan speed: **Default is medium speed**

SET 88 : low speed CALL 88 : medium speed SET 89: high speed

- ⑤ CALL 80 (81/ 82/ 83/ 84/ 85/ 86/ 87) preset, call the corresponding scan
- ⑥ CLEAR 80 (81/ 82/ 83/ 84/ 85/ 86/ 87) preset, cancel the corresponding scan
- ⑦ CALL 96 preset, stop scan(or call PTZ any instruction to stop scan)

For example: Set the first line sweep scan, target A object, SET 92 preset, then control PTZ to B object, SET 93 preset. Then operate SET 80 preset, save the first line sweep scan position. SET 88 preset, set PTZ line sweep scan speed into low speed. CALL 80 preset, PTZ carries out the first line sweep scan.

Set second line sweep scan, target C object SET 92 preset, then control PTZ to D object SET 93 preset. Then operate SET 81 preset, save the second line sweep scan position. SET 88 preset, set PTZ line sweep scan speed into low speed. CALL 81 preset, the PTZ carries out the second line sweep scan.

3-8 operation analogize

8 channel cruise

5.2 Operation step:

- ① SET 70 (71/72/73/74/75/76/77) preset, set cruise's position
(Can set other 7 channels at the same time)
- ② Select the preset number to be added, use "SET preset" order, at most add 32pcs preset position (Note: can repeat, useless preset also takes up the quantity)
- ③ SET 96 preset, complete this set
- ④ Repeat ①、②、③ steps complete other cruise set;
⑤ Use NO. 78、79 preset set cruise interval: **the default is 15s.** SET NO. 78: 5s
CALL NO. 78: 15s SET 79: 30s CALL 79: 60s
- ⑥ CALL NO. 70 (71/72/73/74/75/76/77) preset, call the corresponding cruise
CLEAR NO. 70 (71/72/73/74/75/76/77) preset, cancel the corresponding cruise
(no CLEAR ignore it)
- ⑦ CALL NO. 96 preset, stop cruise(or give PTZ any instruction to stop cruise)

For example: Set the first cruise: set the preset to monitoring environment, for example 1-8 preset.

Then SET 70 preset, select the cruise preset to be added, for example 1,2,3,4 preset, SET 1、SET 2、SET 3、SET 4 preset. Operate SET 96 preset, now 1 – 4 preset to be added into the first cruise, SET 78 preset the cruise preset interval is set to 5 seconds. CALL 70 preset, start the first cruise.

Set the second cruise: set the preset to monitoring environment, for example 1-8 preset. Then SET 71 preset, select the cruise preset to be added, for example 5,6,7,8 preset, SET 5、SET 6、SET 7、SET 8 preset. Operate SET 96 preset, now 5 – 8 preset has been added in to the first cruise, SET 78 preset the cruise preset interval is set to 5 seconds.

CALL 71 preset, start the second cruise.

3-8 operation analogize

Keep watching position set

1、 Operation steps

- ① Use NO. 64、 65 preset select keep watching way: **the default is 66 preset** (need set);
- ② Set No. 66 preset, as keep watching call preset;
- ③ Use No 67 preset on、 off keep watching function,(**default is on**);
- ④ Use 68、 69 presetselect keep watching silent time limited: **default is 30s**

Preset No		SET	CALL
Keep watching (3 kinds)	64	Keep watching NO. 66 preset	Keep watching the first line sweep (need set)
	65	Keep watching the first cruise (need set)	
Keep watching switch	67	Turn Off keep watching function	Turn On keep watching function
Silent time limited	68	30s	60s
	69	300s	600s

Other special preset

1、 Cancel intruction, cancel instruction needs operates twice, avoid mistake operation

- SET 90: Cancele all users preset (operate twice)
- CALL 90: Reset factory setting (operate twice)
- SET 91: Cancel 8 channels scan (operate twice)
- CALL 91: Cancel 8 channels cruise (operate twice)
- CALL 94: PTZ reset the self test (operate twice)
- SET 51: Turn on AUX1 (AUX1 turn on two sides)
- CALL 51: Turn off AUX1 (AUX1 turn off two sides)
- SET 52: Turn on AUX2 (AUX2 turn on two sides)
- CALL 52: Turn off AUX2 (AUX2 turn off two sides)

6. Simple fault and handling.

Why the PTZ doesn't work according to my operation?

We mentioned maybe there is problem during you use PTZ, the following is the solve way when you meet the simple fault.

Fault	Possible causes	Method of exclusion
Power on, not self-test, no image	Power cable is wrong	Rewiring
	The power adapter is damaged	Replace the power adapter
Self-test is not normal, or with noise	Power supply is insufficient	Replace the power
	Mechanical failure	Need to be repaired

Self-test action is normal, but no video	Video wire poor connection	Rewiring
	The video switcher is misplaced or improperly operated	Follow the user manual Connect wire, operation
Video image is unstable	Wire poor connection	Rewiring
	Video switcher or circuit failure	Need to be repaired
	Wire is wrong	Rewiring
Self-test is normal, but can not control PTZ	Control wire connection is wrong	Rewiring
	PTZ ID or protocol, baud rate set is wrong	Reset PTZ DIP
	Keyboard address, protocol, or baud rate, the setting does not match the PTZ	Reset the keyboard
The selected camera is not shown	The camera number corresponds to the video switch wiring incorrectly	Rewiring and set camera number
Can not control the camera focus, zoom	The camera control wire is wrong	Re-wiring according to the user's manual