



# **BMK-1010K Keyboard User Manual**

V1.0

Thanks a lot for purchasing our product. If there is any question, please feel free to contact us.

This manual may have something inaccurate in technology, unsuited with the product's functions and operations or the misprints. The manual's content will change with the enhanced functions of the product, as well as give the regular advance or renew the product and procedure in this manual. The renewed content will be added in the new edition of this manual and no separate notice will be given.

Notes:

- LCD display can be easily damaged. Please do not press or exposure in sunshine for a long time;
- The joystick can be easily damaged. If it needs to be repaired, please wrap and ship it by using original or safety packaging;
- This keyboard should be used in certain range of temperature and humidity, referring the technical index.
- Please connect the keyboard correctly as this manual requires.

Items list

<b>Items</b>	<b>Quantity</b>	<b>Note</b>
DC12V power adapter	1	
10PIN connector	1	
CD with user's manual	1	

# Contents

Main Features.....	4
Install Introduction.....	5
Back panel interface introduction .....	5
BMK-1000K front panel introduction .....	6
Key button function introduction .....	6
Joystick control introduction.....	7
LCD display indication introduction.....	7
BMK-1010K front panel introduction .....	7
Key button functions introduction .....	8
Joystick control introduction.....	9
LCD display indication introduction.....	9
Keyboard configuration and query.....	10
Keyboard menu tree .....	10
Configuration illustration.....	10
Typical wiring diagram.....	11
Control speed dome .....	11
Control DVR.....	12
Technical Specification.....	13

## **Main Features**

BMK-1000K and BMK-1010K keyboards are compatible with all of our company's full series embedded DVRs. These keyboards can control speed dome and PTZ either directly, or through the DVRs. Also they can control DVRs as well.

### **Control**

Completely replace the all functions of DVR front panel.

Any operation is indicated in LCD display.

One keyboard can manage 31 DVRs maximum.

Control speed dome and PTZ: The speed dome and PTZ address is among 0~254.

### **Control protocol**

Contain 9 kinds of speed dome and PTZ protocol. Users can require installing other specific protocol if the keyboard has not contained. We will send the modified procedure to you to update keyboard procedure via RS-485 communication port, as it does not need to change hardware in advance.

### **Divided control by host and auxiliary keyboard**

Classifying control can be supported in controlling embedded DRV, and 15 auxiliary keyboard can be connected, and the ID ranging from 0 to 15

Classifying control can be supported in controlling quick DOME and decoder, and 15 auxiliary keyboard can be connected, and the ID ranging from 0 to 15.

### **Features and functions**

The flexibility of system is improved wisely as any equipments connect with RS485 can be set in different protocols and baud rates. Due to all the configuration can be done on the LCD display, it is not needed to look for how to change the protocol.

## Install Introduction

### Back panel interface introduction

Introduction: **BMK-1000K、BMK-1010K Back panel interfaces are the same**

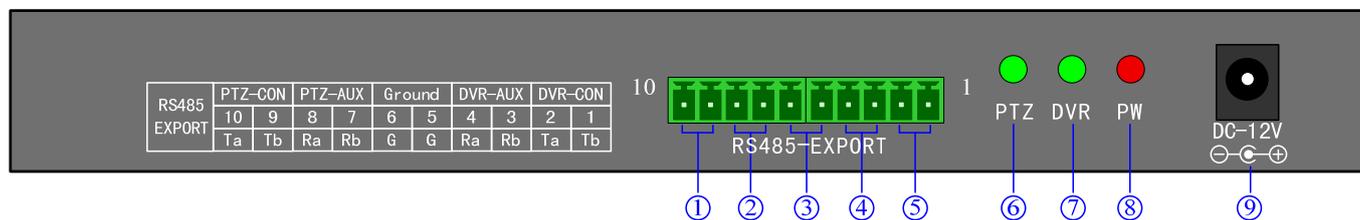


Fig 1

No	Physical interface	Connect introduction
1	Output of control PTZ <b>PTZ-CON</b>	Host keyboard connects PTZ RS485 port. Ta is for RS485+, and Tb is for RS485-
2	Input of auxiliary keyboard for PTZ control <b>PTZ-AUX</b>	Host keyboard connects auxiliary keyboard for PTZ control. Host keyboard pin8 ( <b>Ra</b> ) connects auxiliary keyboard pin10 ( <b>Ta</b> ), and host keyboard pin7 ( <b>Rb</b> ) connects auxiliary keyboard pin9 ( <b>Tb</b> ). Then auxiliary keyboard can control PTZ.
3	<b>Ground</b>	Ground control signal line terminal
4	Input of auxiliary control keyboard for DVR control <b>DVR-AUX</b>	Host keyboard connects auxiliary keyboard for DVR control. Host keyboard pin4 ( <b>Ra</b> ) connects auxiliary keyboard pin2 ( <b>Ta</b> ), and host keyboard pin3 ( <b>Rb</b> ) connects auxiliary keyboard pin1 ( <b>Tb</b> ). Then auxiliary keyboard can control DVR.
5	Output of control DVR <b>DVR-CON</b>	connect host keyboard pin2 ( <b>Ta</b> ) with DVR <b>KB</b> port <b>D+</b> , and connect host keyboard pin1 ( <b>Tb</b> ) with DVR <b>KB</b> port <b>D-</b>
6	<b>PTZ</b> control indicator light	In PTZ control mode, the led is green lighted and twinkling.
7	<b>DVR</b> control indicator light	In DVR control mode, it is green and twinkling.
8	Power light <b>PW</b>	The lamp of keyboard is constantly red lighted on the working state
9	Power input <b>DC-12V</b>	DC 12V power input

## BMK-1000K front panel introduction

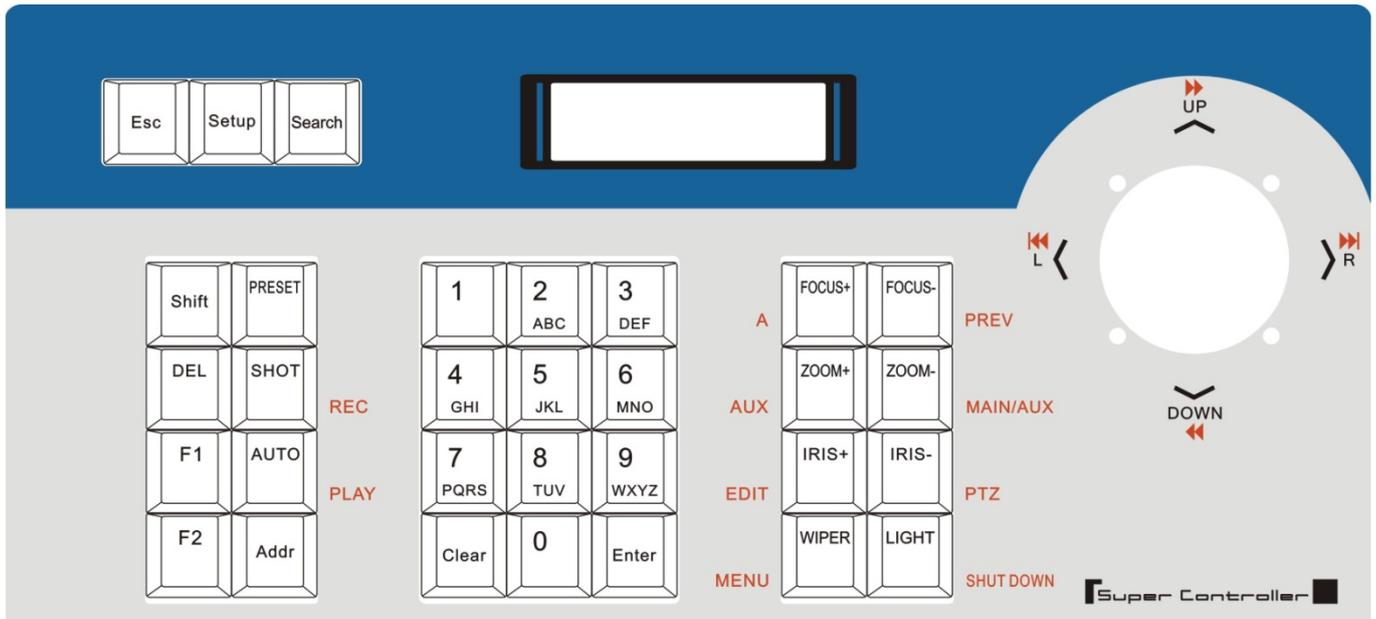


Fig 2

### Key button function introduction

Button name	Function introduction
ESC	back to up-level menu
Setup	hold for 3 seconds, enter into keyboard configuration state (default password: 8888)
Search	press 1 second, check keyboard Configuration: the PTZ protocol
Shift	switch the control mode of embedded DVR or speed dome
PRESET	In PTZ control mode: setup the speed dome preset position.
DEL	In PTZ control mode: clear the speed dome preset position.
SHOT	In PTZ control mode: call PTZ preset
(REC)	In DVR control mode: enter into DVR manual recording menu
F1	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation.
Auto (PLAY)	In PTZ control mode: set the speed dome to auto rotate (depend on speed dome itself, please reference the speed dome's manual )
	In DVR control mode: enter into DVR playback menu
F2	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation
Addr	choose addresses of PTZ or the device ID of embedded DVRs
Clear	clean currently input content
ENTER	confirm currently input content
0-9	Number: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
Letter	A-Z (26 letters)
FOCUS+ (A)	In PTZ control mode: set the lens focus near
	In DVR control mode: switch input method
FOCUS- (PREV)	In PTZ control mode: set the lens focus far
	In DVR control mode: switch DVR preview mode
ZOOM+	In PTZ control mode: zoom in the lens

(AUX)	In DVR control mode, this button is reserved
ZOOM- (MAIN/AUX)	In PTZ control mode: zoom out the lens
	In DVR control mode: switch the main/aux output port (hold for 2 seconds)
IRIS+ (EDIT)	In PTZ control mode: open the lens iris
	In DVR control mode: edit input, same function as DVR front panel [EDIT] button
IRIS- (PTZ)	In PTZ control mode: close the lens iris
	In DVR control mode: enter the embedded DVR pan/tilt control function
WIPER (MENU)	In PTZ control mode: on/off the wiper relay
	In DVR control mode: show the DVR main menu
Light (Shut down)	In PTZ control mode: on/off the light relay
	In DVR control mode: power off DVR

### Joystick control introduction

fig	operation	function introduction
	up	In PTZ control mode: control the movement of pan/tilt
		In DVR control mode: play record file fast
	down	In PTZ control mode: control the pan/tilt to move upon
		In DVR control mode: play record file slowly
	left	In PTZ control mode: control pan/tilt to move left
		In DVR control mode: control record file backward
	right	In PTZ control mode: control pan/tilt to move right
		In DVR control mode: control record file forward

### LCD display indication introduction

Any operation is displayed and corresponding in LCD. The LCD will turn into electricity-save mode (minimum the lightness) in 30 seconds without any input signal.

### BMK-1010K front panel introduction

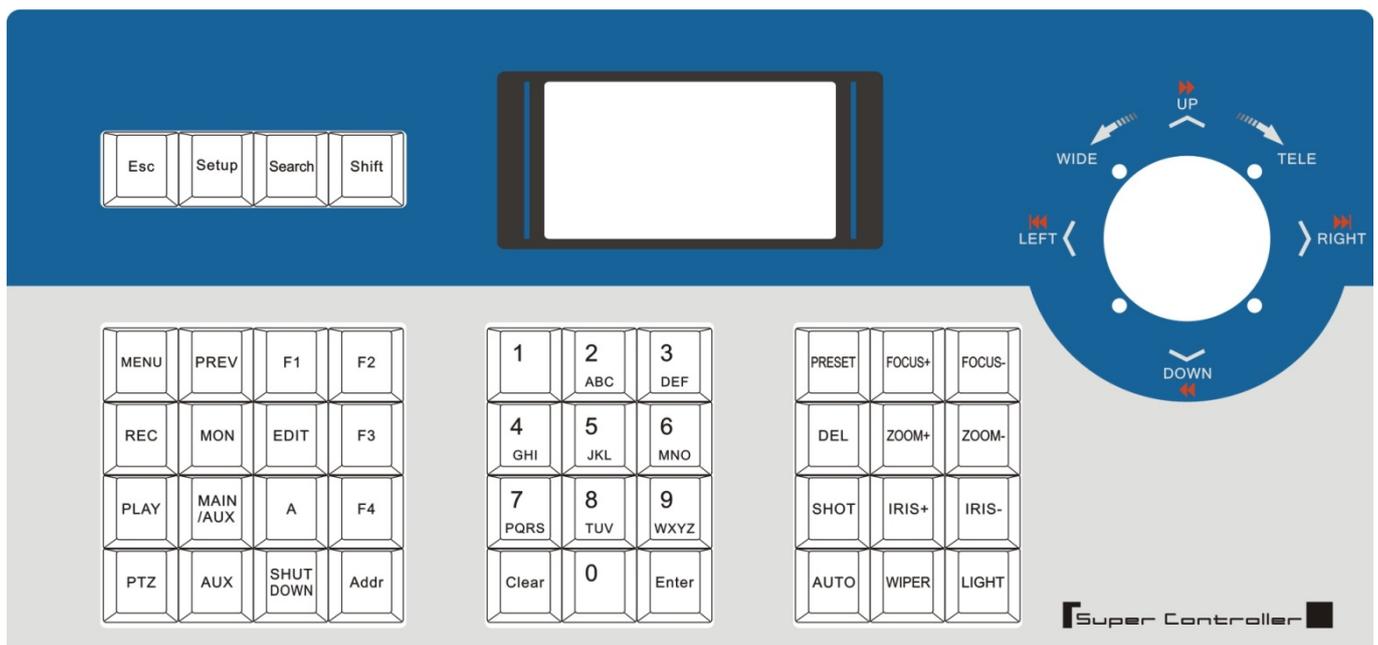


Fig 3

**Key button functions introduction**

<b>Button name</b>	<b>Function introduction</b>
ESC	back to up-level menu
Setup	hold for 3 seconds, enter into keyboard configuration state (default password: 8888)
Search	press 1 second, check keyboard configuration: PTZ protocol
Shift	switch the control mode of embedded DVR or speed dome
MENU	show the main menu
PREV	switch the previews of single, four, nine, twelve, sixteen screens
F1	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation.
F2	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation.
REC	Enter into DVR manual record menu.
MON	specially control the four auxiliary display output ports of DS-8016HSI (hold for 2 seconds )
EDIT	Enter into DVR edit mode.
F3	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation.
PLAY	Enter into DVR playback menu.
MAIN/AUX	switch the main/aux output port (hold for 2 seconds)
A	switch input ways
F4	Quick key-press of setup speed dome, it is related to used protocol, refer to LCD explanation.
PTZ	Enter into DVR PTZ control menu.
AUX	In DVR control mode, this button is reserved.
Shut Down	power off DVR
Addr	choose addresses of PTZ or the device ID of embedded DVRs
Clear	clean currently input content
ENTER	confirm currently input content
0-9	Number.: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9
A – Z	A-Z (26 letters)
PRESET	Setup the speed dome preset position
FOCUS+	set the lens focus near
FOCUS-	set the lens focus far
DEL	Delete the speed dome preset position
ZOOM+	zoom in the lens
ZOOM-	zoom out the lens
SHOT	Call the speed dome preset position
IRIS+	open the lens iris
IRIS-	close the lens iris
Auto	Set the speed dome to auto rotate ( depend on speed dome itself, please reference the speed dome's manual )
WIPER	on/off the wiper relay

Light	on/off the light relay
-------	------------------------

### Joystick control introduction

fig	operation	function introduction
	up	In PTZ control mode: control the movement of pan/tilt
		In DVR control mode: play record file fast
	down	In PTZ control mode: control the pan/tilt to move upon
		In DVR control mode: play record file slowly
	left	In PTZ control mode: control pan/tilt to move left
		In DVR control mode: control record file backward
	right	In PTZ control mode: control pan/tilt to move right
		In DVR control mode: control record file forward
	rotate left	zoom in the lens
	rotate right	zoom out the lens

### LCD display indication introduction

Any operation is indicated and corresponding in LCD display. The LCD will turn into electricity-save mode (minimum the lightness) in 30 seconds without any operation.

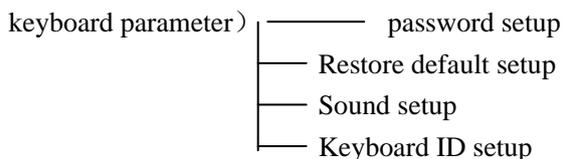
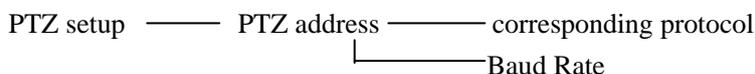
o

## Keyboard configuration and query

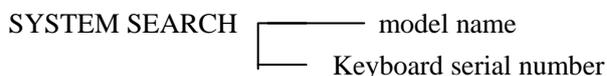
All the operation of keyboard configuration and query can be done via joystick and certain key buttons.

### Keyboard menu tree

Configuration menu tree:



Inquire Keyboard parameter:



### Configuration illustration

Here is a example to illustrate how to set dome: change the communication protocol of dome 002 to PELCO-D, and change the baud rate to 4800.

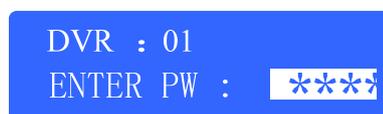
1. In the mode of standby (fig a), hold the “Setup” button for 3 seconds, login the main menu (fig b);
2. Enter the password (fig c, default password: 8888);
3. Press [Enter], enter into setup menu, operate the Joystick up and down to choose [PTZ SETUP] or [SYS SETUP] (fig d);
4. Choose [PTZ SETUP], press [Enter] to enter in [PTZ SETUP];
5. Operate the Joystick left and right to choose the address of speed dome, e.g. 002 (fig e, f), then press [Enter] to enter the next level menu (fig g);
6. Operate the Joystick up and down to choose communication protocol, e.g. PELCO-D (fig h);
7. Operate the Joystick right to change the baud rate (fig i), and then choose the baud rate up and down (fig j);
8. Press [Enter], then press “ESC” until back to the standby mode (fig a);
9. Configuration is done



a



b



c



d



e



f



g



h



i

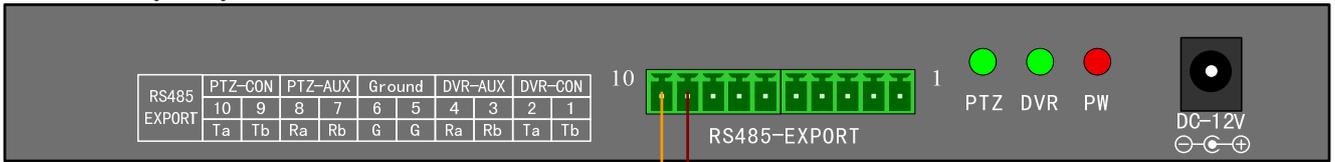
CAM :  
 P: PELCOD BR: 048

j

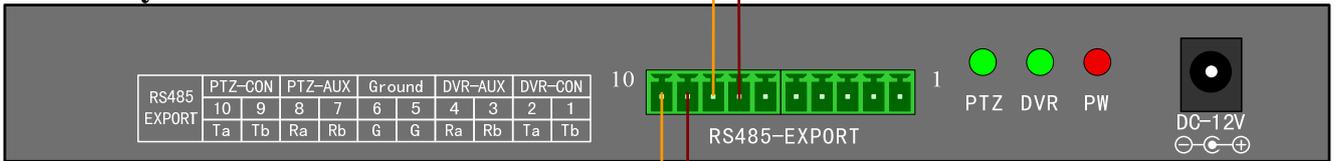
**Typical wiring diagram**

**Control speed dome**

**Auxiliary keyboard**



**Host keyboard**



Connect host keyboard pin8 (Ra) with auxiliary keyboard pin10 (Ta)  
 Connect host keyboard pin7 (Rb) with auxiliary keyboard pin9 (Tb)

Connect host keyboard pin10 (Ta) with PTZ RS485+  
 Connect host keyboard pin9 (Tb) with PTZ RS485-

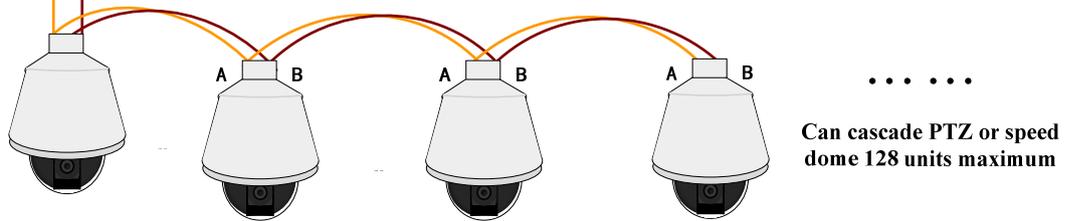


Figure 4



## Technical Specification

<b>Keyboard model</b>	BMK-1000K	BMK-1010K
<b>Supported DVR number</b>	31	31
<b>Supported PTZ number</b>	255	255
<b>Control mode</b>	RS-485 half-duplex mode Baud rate: 1200 ~ 19200bps	
<b>Communication interface</b>	RS-485 port	
<b>LCD screen</b>	122mm* 32mm	128mm*64mm
<b>Joystick</b>	2D	3D
<b>Maximum cable length</b>	1200m	
<b>Power supply</b>	DC 12V	
<b>Working temperature</b>	-10℃-- +55℃	
<b>Working humidity</b>	10%--90%	
<b>Size</b>	300mm*180mm*86mm	360mm*200mm*108mm
<b>Weight</b>	3.2Kg	3.3Kg