

User Manual

DR-3207 Matrix Switching System



ⓘ Before using the matrix, please read this manual carefully.

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1. Introduction

The matrix video switcher/control system is a modular, assembled CCTV security system combining both video switching and system control functions. Each matrix system provides 32 camera inputs, 7 monitor outputs and 4-8 keyboard controllers. The system achieves digital display and screen status display through system keyboards and monitors. Through RS485 port the system can control various equipments such as Pan/Tilt, lens and alarm detectors. The system also features alarm response, auto and manual control functions.

The system can include one or several matrixes. One matrix includes the sections of power module, communication module, VIM(video input module) & VOM (video output module). All the equipment in the system is controlled by a CPU and one or more keyboards.

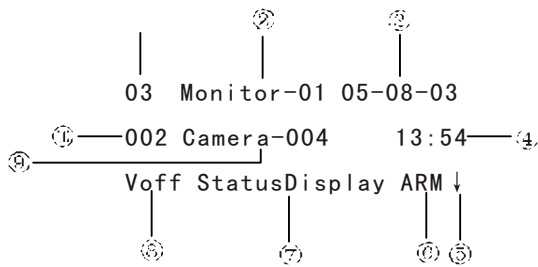
2. Precautions

- Only qualified technician or installer is permitted to conduct the installation of this unit.
- Do not block or cover the ventilation openings in the enclosure.
Place the unit at least 5cm away from the wall to prevent it from overheating.
- Do not drop metallic parts into the ventilation openings.
Dropping parts will lead to unit malfunction. If this does happen, switch off the power and notify qualified engineer to service the unit.
- Do not open or remove covers yourself.
Opening or removing covers may expose you to dangerous voltage or other hazards.
There is no user serviceable part. Only qualified engineer can service the unit.
- Handle with care.
Avoid excessive force or vibration to the unit, which will cause damage to it.
- Keep the unit away from water or moisture.
Do not operate the unit near a wet location.
If entered water or moisture cause malfunction of the unit, switch off the power and notify qualified engineer to service the unit. Water or moisture can damage the unit that can also expose you to dangerous electric shock.
- Do not use strong or abrasive detergent to clean the unit.
Use a dry soft cloth to clean the unit and remove any dust on it.
Use neutral detergent to clean the unit carefully when necessary.
Operate the unit within the required temperature, humidity ranges and under required power supply conditions.
- Do not operate the unit in high temperature or humidity conditions.
The operating environment ranges are:
Temperature : -0 ~ +40 , humidity <90%.

3. Features

3.1 System Status Display on Monitor

The monitor can display the camera number, camera title, monitor number, time, date, status, alarm and error information.



Monitor Number: the number of matrix video output port and the number of port connecting monitor to matrix. The number is also the camera ID number.

Monitor Title: user can edit any memorial characteres.

Date Display: the selectable date display of system. Three formats are available: Asian format YY/MM/DD, International format DD/MM/YY & U.S. format MM/DD/YY.

Time Display: the 24H time display of system.

Arming/disarming alarm: when the column displays , it means the alarm area is armed; when the column displays , it means the alarm area is disarmed.

Alarm signal: when ARM flashes, it means an alarm event arises in the alarm area. If ARM keeps on flashing after user responds to the alarm, the detector wire is open or short.

System status display: (1)When a alarm event arises, the column displays the alarm mode and the alarm area number. The display 1 [MODE1 AREA001] means the alarm display is of Mode 1 and occurs in alarm area No.1. (2)When one monitor runs the sequential scan, the column l. Displays [SCAN xxx xxx]. [SCAN 001 032] means the monitor is running the sequential scan from Camera No.1 to NO.32. 3)When one monitor runs the standard sequential switch, the column displays [TOUR xxx S xxx]. [TOUR 001 S640] means the monitor is running the Tour NO.1 with the current Step NO.640. 4) When one monitors display [SALVOXXX SXXX]. [SALVO001 S0640] in means the monitor is running Salvo Group No.1 with the current Step No.64.

Video loss: when there is video display on monitor the column displays V-ON; when there is no video display on monitor the column displays V-OFF.

Camera Title: the user self-edited title of camera for easy memorization and usage.

Camera Port Number: the number of port connecting camera to Matrix. The number is also the camera ID number.

3.2 Video Switch

The matrix can switch any video of any camera or any preset of any camera to any designated monitor to display. The heart of the system is an all-cross matrix switch which can switch 32 cameras and 7 monitors.

3.3 Independent Video Automatic Sequential Scan

The scan can display the videos automatically from the first camera to the end camera by ID number numeric sequence set by user. The video switch speed is independent and settable.

3.4 Salvo Switch

The system can switch multiple videos to different monitors for display simultaneously. The system has up to 16 groups of salvo switches and each group has up to 64 steps. The dwell time of videos is programmable and the videos can be pre-sets of cameras. The system has SYSTEM SALVO SETUP menu to set the program.

3.5 Standard Sequence Switch

it is a group of switches of any video of any camera. The system can program and store 30 groups of standard sequence switches, including 20 groups with 128 steps each, 6 groups with 256 steps each, 2 groups with 512 steps each and 2 groups with 640 steps each. Each group can include videos of multiple cameras and the dwell time of each video is Programmable. The video can be any preset of any Camera. In a group of sequence switch, a video can be repeated as different steps. All the steps of all groups added up are up to 6400. The same group of sequence switch can be displayed on different monitors which do not interfere with each other.

3.6 Switch to Previous Camera

To display the video of previous camera by ID number.

3.7 Switch to Next Camera

To display the video of next camera by ID number.

3.8 Video Loss Check

User can check video loss on any monitor. Even there is no video input, user can edit system menu.

3.9 Automatic Alarm Switch

The system has 32 alarm inputs and 4 respondent alarm outputs. The control mode is parallel BUS control. When the system receives alarm signal it will switch to the video with alarm event, activate preset, auxiliary switch, video recorder and alarm sound. The system can also display the alarm status information on the monitor. The video to switch, dwell time, preset and open/close time of auxiliary switch of an alarm event can be set through menu.

3.10 System Alarm Mode

There are two modes: Auto and Manual. When AUTO mode is selected, the system will process the alarm information automatically as per the programmed AUTO ALARM SETUP menu commands, and the system will process manual commands sent through the keyboard; When MANUAL mode is selected, the system will only process manual commands to arm/disarm alarms and the AUTO ALARM SETUP is not available now.

3.11 Arm/disarm Alarm

The system can set the time of arming & disarming alarms. The system can execute the alarm arming/disarming commands as per the time schedule.

3.12 The Alarm Handling Mode

1) BASIC MODE: under this mode, all the alarm signals will be

displayed on the designated main monitor #1. If there are multiple alarm signals, the alarm videos will be switched to the Monitor # 1 one by one. The system can store the alarm status. Even the alarm signal is disconnected, if the user does not respond to the alarm, the alarm status still exists. If the alarm signal exists all the time, even the user responds to the alarm the alarm status cannot be cleared, but the monitor will not display the alarm video.

- 2) **AUTO-BUILD MODE:** the designated main Monitor #1 and #2 will display the alarm videos. When multiple alarm signals exist simultaneously, the signals will be separated into two groups to be displayed on the monitors separately. The alarm video display on each monitor are similar to that of Basic Mode. The system can store the alarm status. Even the alarm signal is disconnected, if the user does not respond to the alarm, the alarm status still exists. If the alarm signal exists all the time, even the user responds to the alarm the alarm status cannot be cleared, but the monitor will not display the alarm video.
- 3) **SEQUENCE DISPL:** the designated main Monitor #1 and #2 will display the alarm videos. When multiple alarm signals exist simultaneously, the Monitor #1 will display the first alarm video that is not responded to. When the first alarm is responded to, the Monitor #1 will display the second alarm that is not done so. While monitor #2 displays circularly all the alarm videos that are not responded to. Each alarm video has a dwell time of 1 second. The system can store the alarm status. Even the alarm signal is disconnected, if the user does not respond to the alarm, the alarm status still exists. If the alarm signal exists all the time, even the user responds to the alarm the alarm status can not be cleared, but the monitor will not display the alarm video.

3.13 Alarm Clearance

There are two modes of alarm clearance: automatic clearance and manual clearance. The modes can cause the system to exit the alarm event status and return to the working status before the alarm event. The system master can authorize any keyboard (user) the right to clear an alarm. The unauthorized keyboard does not have the right. After clearing a alarm, the user will not hear the alarm sound. If the alarm event still exists, the ARM word in the alarm status display column on the monitor flashes.

- 1) **Automatic clearance** (after the alarm contact points become disconnected or connected for 20 seconds, the system will clear alarm automatically); after the alarm contact points become disconnected for 20 seconds, the alarm video will disappear from the monitor automatically. By this mode, any alarm video can be caught on time. After the first alarm video is cleared from the monitor, the next alarm video is displayed on the monitor. Under the automatic clearance mode, the user can also clear the alarm manually.
- 2) **Manual clearance:** under the manual clearance mode, the alarm video remains on the respondent monitor until the user visits the monitor through the keyboard. The master can set and authorize any keyboard the right to clear alarms; unauthorized keyboard can not clear the alarms.

3.14 Lock Functions

To reinforce the safety and reliability, the system sets lock functions specially. They are to limit the control scope of keyboards to monitors and cameras. They are two modes:

- 1) **Lock cameras to keyboards:** set which keyboard can control

which cameras;

- 2) **Lock monitors to keyboards:** set which keyboard can control which monitors.

3.15 Receiver

The system sends control signals to receiver through RS-485. Receiving the signals, the receiver translates the commands to control the operations of camera, Pan/Tilt, Lens and light.

3.16 Keyboard Controller

The system can connect 8 keyboards and 1 multi-media PC controller, including all-function main keyboard controller with menu programming, multi-media PC controller and auxiliary keyboards.

3.17 Variable Speed Joystick Control

The joystick can control constant or variable speed Pan/Tilt and Dome camera. User can also use joystick to select items when editing programs.

3.18 Impedance Switch of Video

Input Impedance switch for video input: all video inputs have been connected to the terminal impedances with high or low ohm on the matrix mainboard. By using the DIP switch in the matrix user can select the high or low impedance for each video input.

3.19 Dome Camera Phase Setting

If the cameras are out of phase, vertical roll on monitor appears when user switches between cameras. The phase setting is used to set the cameras in phase so that vertical roll on monitor can be eliminated.

3.20 Storage and Memory

The system can store the latest 5 turning on time and turning off time, alarm arming time, alarm disarming time, alarm time, alarm events, and alarm clearance.

3.21 Multi-media Control

The system can connect PC through a RS232 port to transmit the information to the PC. The PC is a wholly new controller apart from the keyboard.

3.22 Communication Ports

The system provides eight groups of RS-485 BUS to connect receivers, four 6-pin RJ-11 ports to connect keyboards, and a RS232 port to connect PC.

3.23 Ports and Connectors

- 1) **Video Input and Output:** standard BNC connectors.
- 2) **Looping Video Connection:** two 34-pin flat cable ports.
- 3) **Keyboard:** four 6-pin RJ-11 ports to connect keyboards.
- 4) **Alarm Input and Output:** 32 inputs through removable screw terminal blocks. Four Normal open/Normal close relays output alarm signals.
- 5) **RS-232 port:** 9-pin D-Sub ports to connect PC. The stored information in Matrix can be transmitted to PC. At the same time, PC can control the whole system instead of keyboard.
- 6) **RS-485 port:** removable screw terminal block to connect 8 groups of 485 BUS that control all the dome cameras.

4. Specification

Item	Description		Item	Description
Video Inputs	Minimum 32 inputs, can be expanded to 128 inputs. 1V (p-p, 75 Ω)		Date Format	3 selectable displays
Video Outputs	7 outputs, 75 Ω (BNC)		Preset	100 (each camera)
Video Specification	Frequency characteristics (-3db Band Width)	50Hz-8MHz	Alarm Inputs	Built in 32 inputs. Open circuit mode or short circuit mode selectable. (can extend to 128)
	S/N Ratio(weighted)	52db	Alarm Display	3 selectable displays
	Differential Gain	0.6%	Alarm Outputs	4 relay outputs, normal open/normal close modes, 30VAC/0.6A resistance load. (can extend to 20 outputs)
	Differential Phase	1.1 $^{\circ}$	RS232 Port	9-pin D-Sub connector
	Insert Gain	± 0.5 db	RS485 Port	8 RS485 Bus. Communication distance up to 1500m, control up to 255 cameras
	Adjacent Channel Isolation Degree(Input to Input)	≥ 50 db	Keyboard	Up to 8 keyboards can be connected to the system
	Adjacent Channel Crosstalk (Input to Output)	-40db	User	Each user has his own registered password and priority.
	Synchronous Nonlinear Distortion	1%	Data Store	EEPROM (64K)
	Luminance Nonlinear Distortion	1.5%	Alarm Event Record	1024 pieces of alarm events, 1024 pieces of alarm arming/disarming information and the latest 5 system turning on and turning off time.
	Intermodulation Distortion	0.5%	Automatic Switch	30 sequences, maximum 640 steps for each sequence
	Short Time Waveform Distortion	3.5%	Salvo Switch	16 sequences, maximum 64 steps for each sequence
	Cluster Frequency Delay Characteristics	6ns	Power Supply	Refer to power cable label
	Brightness/Color Time Offset	2.5ns	Operating Environment	0 $^{\circ}$ C -- 40 $^{\circ}$ C. Humidity < 90%
	Brightness/Color Gain Offset	8%	Power	30W
Video Check	to check any video loss on any monitor.		Dimensions	436 (L) x 295 (W) x 90 (H) mm
Title	Camera	One line 16 characters	Weight	6.5kg
	Monitor	One line 12 characters		

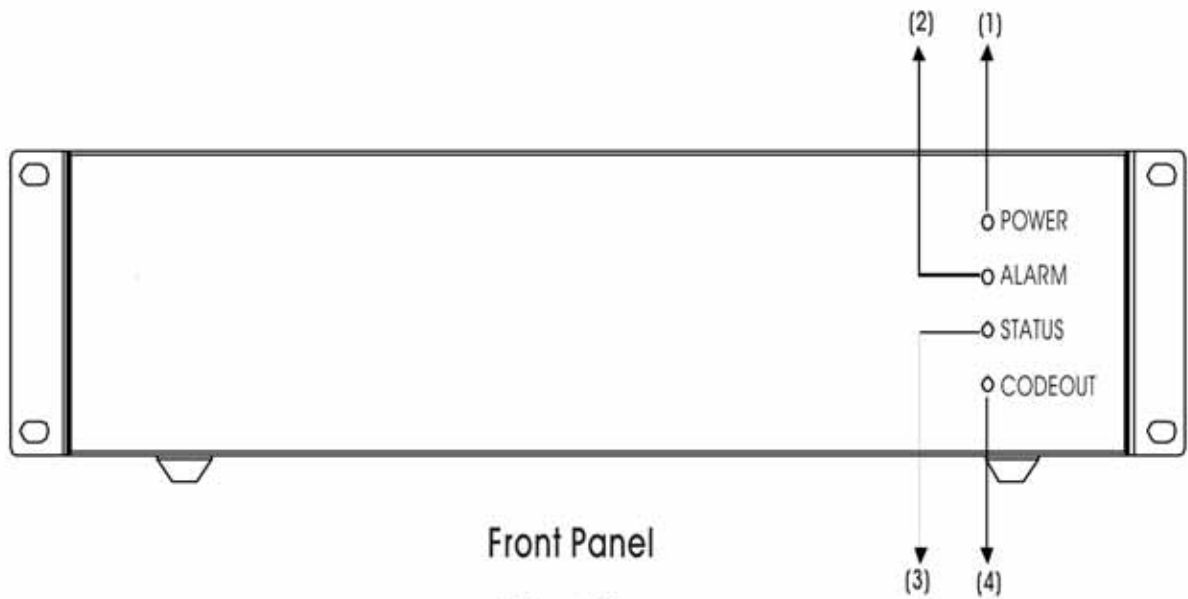
4. Function

Functions		Descriptions
System Function	1	Keyboard registration The system can connect 8 keyboards. Each keyboard should register one of the eight priority levels. The different priority levels (8 is the highest, 1 is the lowest) can grant different functions of the keyboards.
	2	User registration Each keyboard can register users with different priority.
	3	Baud rate Setting Using the keyboard joystick, the user can select the baud rates of the following items: 1. Dome camera baud rate 2. Keyboard baud rate 3. Extend port baud rate #1 4. RS232 baud rate
	4	Clear password The system master (the highest priority level user) can delete the passwords set by other users when necessary.
Dome Camera Control	1	Focus control Using keyboard, user can adjust the lens focus to obtain a clear video on monitor.
	2	Zoom control Using keyboard, user can adjust lens zoom to obtain a video with desired size.
	3	Iris control Using keyboard, user can open or close the iris of lens to obtain a video with desired brightness.
	4	Pan/tilt control Using the keyboard joystick, user can adjust the pan/tilt angle of the lens. User can move the joystick in eight directions: up and down, left and right, upper-left and down-left, upper-right and down-right.
Preset Control	1	Preset setting It is to memorize the parameters of focus, zoom, pan/tilt angle of a camera video. When necessary, the preset can be recalled.
	2	Call preset It is to display the programmed preset.
	3	Run preset tour It is to activate the preset tour.
	4	Delete preset tour It is to delete the preset tour.
Switching	1	Video switch It is to switch any video of any camera to be displayed in any selected monitor.
	2	Standard sequence switch It is a group of sequence switches between any videos of any cameras. The system can program and store up to 30 groups of standard sequence. Each sequence can have up to 640 switch steps that include different videos of 128 cameras. The dwell time of each step can be programmed and the video can be the preset of a camera.
	3	Salvo switch The system can switch a group of videos from different cameras to be displayed on several monitors simultaneously. The function can be set through the salvo switch sub-menu.
	4	Camera sequential scan The sequential scan tours are independent from each other.
Lock Commands	1	Lock a camera Users with different priority levels have different access rights to the locked camera (1. No right of access to the dome camera; 2. Has right of access to the video only; 3. Has right of access to the video and right of control of the dome camera).
	2	Lock a monitor Users with different priority levels have different access rights to the locked monitor (0. No right to use; 1. Has right to use).

Functions		Descriptions
Alarm Functions	1	Arm/disarm alarm Entering arm/disarm sub-menu, user can set arm/disarm time manually or automatically. The system will execute arm/disarm commands automatically as per the time schedule.
	2	Alarm display mode 1. Basic Mode: it displays all alarm videos on the main monitor#1. 2. Auto-build Mode: it designates two main monitors #1 & #2 to display alarm videos. When there are multiple alarms happening at the same time, the alarms will be separated into two groups to be displayed in the two monitors separately. 3. Sequence & Display Mode: it designates two main monitors #1 & #2 to display alarm videos. When there are some alarms happening at the same time, Monitor#1 will display and hold the first alarmed camera video until it is manually acknowledged through the keyboard. When the first video is cleared from Monitor#1, the second alarmed video will be displayed until cleared; operation continues in this manner. The display on Monitor#2 displays circularly all the alarm videos that are not responded to. And each alarm video has a dwell time of 1second.
User Functions	1	Adjust character position Move the joystick up and down, left and right to adjust the characters position on the monitor. 1. Adjustment of characters in OSD menu on Monitor #1. 2. Adjustment of characters in System Status Display on Monitor #1-7.
	2	Adjust character brightness User can adjust the brightness of characters through keyboard (two modes available: brighter or dimmer). User can set this item in Monitor#1-7 separately.
	3	Set time The format of time is 24H. Move the joystick left and right to select between data items to be set. Move the joystick up and down to count the data item up or down. User can also input data by the numeric keypad.
	4	Set date Three date formats are available. The date setting operation is similar to time setting.
	5	Set date format Move the joystick up or down to select the desired format. 1 U.S. Format---MM/DD/YY 2 Int'l format---DD/MM/YY 3 Asian format---YY/MM/DD
	6	Set camera title Enter relating sub-menu to set camera title. Move the joystick up and down to select the dome camera to be set. Move the joystick left and right to select between character items to be set. Turn the joystick clockwise to enter the character menu. Move the joystick up and down, left and right to select character; turn the joystick anticlockwise to exit the character menu.
	7	Set monitor title Enter relating sub-minu to set monitor title. The setting operation is similar to that of camera title setting.
	8	Set dome camera protocol Enter relating sub-menu to set dome camera protocols. The system now supports seven protocols: SAE, PELCO-D, PELCO-P, VCL, PHILIPS, KALATEL, VICON.
	9	Set channel status Using the joystick to select camera display channel status (ENABLE or DISABLE).
	10	RS232 The system can be connected with PC through a 9-pin D-Sub RS232 connector. The information of matrix system can be transmitted to PC: such as alarm information (including alarm input, alarm output and alarm response), sequence events, keyboard operation and video loss and so on. The information of event can be displayed on the PC monitor at the same time when it happens.
	11	Set Camera Phase Select the phase of each dome camera by using the keyboard joystick (altogether seven modes available:0 °、 60 °、 120 °、 180 °、 240 °、 300 ° and FREE SWITCH).
	12	Revise user password User can set a six-digit password as he wants .
	13	Alarm event recording The system can record multiple alarm events, arm/disarm alarm time and the latest 5 system turning on/off time.

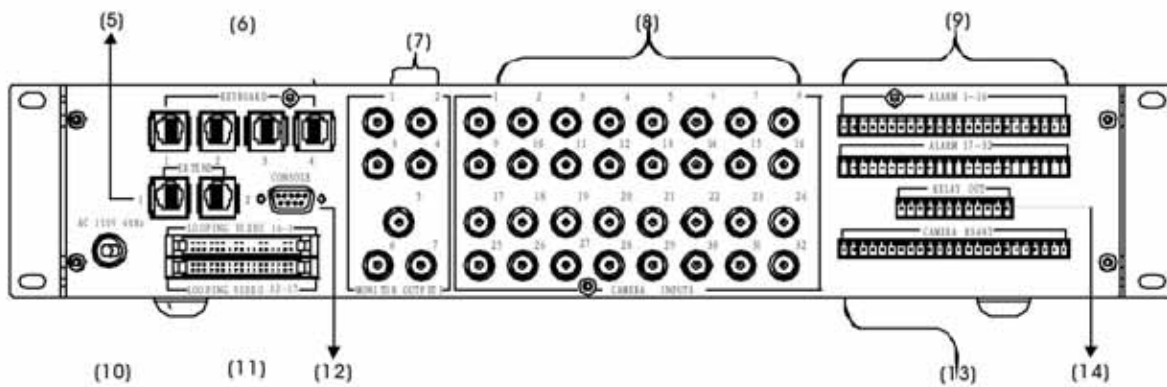
#1 The step of setting the subsidiary matrix baudrate: Set the subsidiary matrix on main mode first, then modify the extend port baudrate through keyboard. After doing this set the subsidiary matrix on subsidiary mode.

6 Profile



Front Panel

Picture 6-1



Back Panel

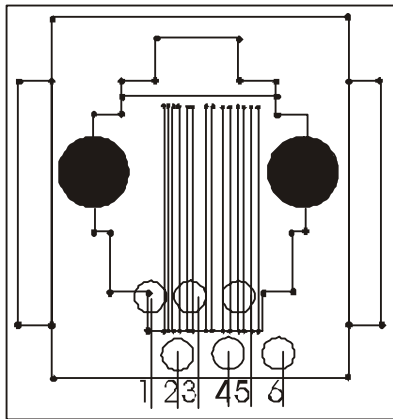
Picture 6-2

6.1 Light and Connection (Refer to picture6-1)

- 1) POWER: lit light indicates that the power supply is normal.
- 2) ALARM: lit light indicates that there is alarm event happening.
- 3) STATUS: flashing light indicates that the system is running normally.
- 4) CODEOUT: flashing light indicates that the system is sending codes out or receiving codes.

6.2 Connection (Refer to picture6-2)

- 5) EXTEND: the two ports are for extension to parallel connections with other matrixes. The connector is RJ-11. Refer to Picture 6-3 for profile and refer to Form 6-1 for pin designation. Refer to Section 7.8 for connections.



Picture 6-3

Pin	1	2	3
Designation	GND	GND	+
Pin	4	5	6
Designation	-	GND	GND

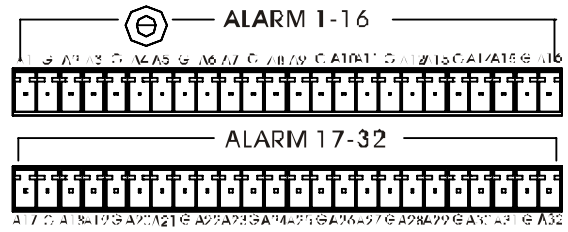
Form 6-1

- 6) KEYBOARD PORT: the four ports are for 6-pin RJ11 plugs that connect keyboards. Refer to Picture 6-3 for profile and refer to Form 6-2 for pin designation. Refer to Section 7.3 for connections.

Pin	1	2	3
Designation	GND	GND	+
Pin	4	5	6
Designation	-	GND	-12V

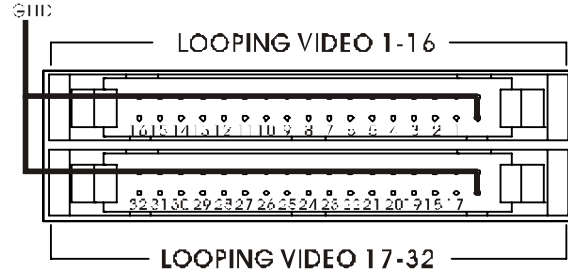
Form 6-2

- 7) MONITOR OUTPUTS: standard BNC connectors providing 7 video outputs. Refer to Section 7.2 for connections.
- 8) CAMERA INPUTS: standard BNC connectors providing 32 video inputs. Refer to Section 7.1 for connections.
- 9) ALARM INPUTS: 32 alarm inputs through 12 contact removable screw terminal blocks. Refer to Picture 6-4 for profile and pin designations. Refer to Section 7.1 for connections.



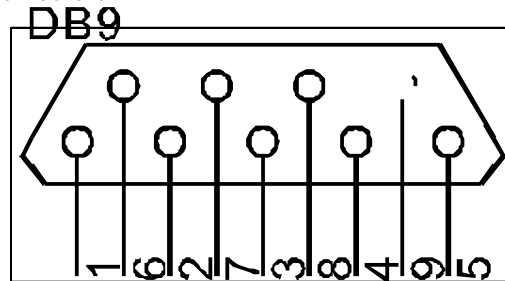
Picture 6-4

- 10) POWER SUPPLY CABLE: connecting power supply.
- 11) LOOPING VIDEO: two 34-pin flat ribbon sockets for 32 looping video inputs and outputs. Refer to Picture 6-5 for profile and pin designations. Refer to Section 7.5 for connections.



Picture 6-5

- 12) RS232 PORT (CONSOLE): this port is for 9-pin D-Sub, connecting PC for transmitting stored message in Matrix to it. PC can also control the whole system. Refer to Picture 6-6 for profile and refer to Form 6-3 for pin designations. Refer to Section 7.9 for connections.



Picture 6-6

Pin	1	2	3	4	5
Designation	GND	Data in	Data out	Reserved	GND
Pin	6	7	8	9	
Designation	Reserved	Reserved	Reserved	Reserved	

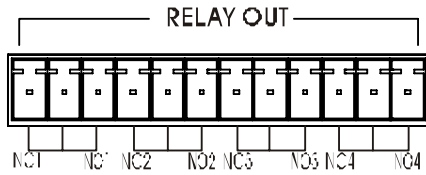
Form 6-3

- 13) RS485 PORT (CAMERA RS485): using 12 contact removable screw terminal block that connecting 8 groups of RS485 BUS outputs. Refer to Picture 6-7 for profile and pin designations. S means shield. Refer to Section 7.1 for connections.



Picture 6-7

- 14) RELAYOUT: 4 relay outputs using 12 contact removable screw terminal block, two modes of normal open/normal close. Refer to Picture 6-8 for profile and pin designations.



Picture 6-8

6.3 Switch Setting

1 Matrix mainboard (219-PBM-Main)

- 1) SW1-SW4: switches for video input high/low impedance connection setting. If one video input is connected to a terminal equipment such as monitor with high impedance, the switch bit to this video input should be set as ON with a 75 ohm impedance load; if the terminal equipment such as monitor has already been connected to a 75 ohm impedance, the switch bit to this video input should be set as OFF and this is to reach high impedance status. Refer to the following form for the switch bit number to each video input. Factory default setting are all as ON.

SWITCH NO.	8	7	6	5	4	3	2	1	
VIDEO OUTPUT	SW1	2	26	10	18	1	25	9	17
	SW2	4	28	12	20	3	27	11	19
	SW3	6	30	14	22	5	29	13	21
	SW4	8	32	16	24	7	31	15	23

- 2) SW5: this group of switches are for system setting.
- Switch bit 1, switch bit 2 are for system reset setting. If the two bits are all set as ON, the system is reset and all data in the memory are cleared. Switch bit 3, switch bit 4 are for factory reserved.

NOTE: After completing system reset using the two bits (and self-testing is normal after switching power on), user should set the three bits as OFF again.

Switch bit 5, bit6, bit7 & bit 8 are for work mode setting, please refer the following for more details.

switch bit5	switch bit6	switch bit7	switch bit8
ON	ON	ON	ON
OFF	ON	ON	ON
OFF	ON	ON	OFF
OFF	ON	OFF	ON
OFF	ON	OFF	OFF
ON	ON	ON	OFF
ON	ON	OFF	ON
ON	ON	OFF	OFF
ON	OFF	ON	ON

- Main matrix (when only one matrix is to be connected)
- Main matrix (when two matrixes are to be connected)
- Main matrix (when three matrixes are to be connected)

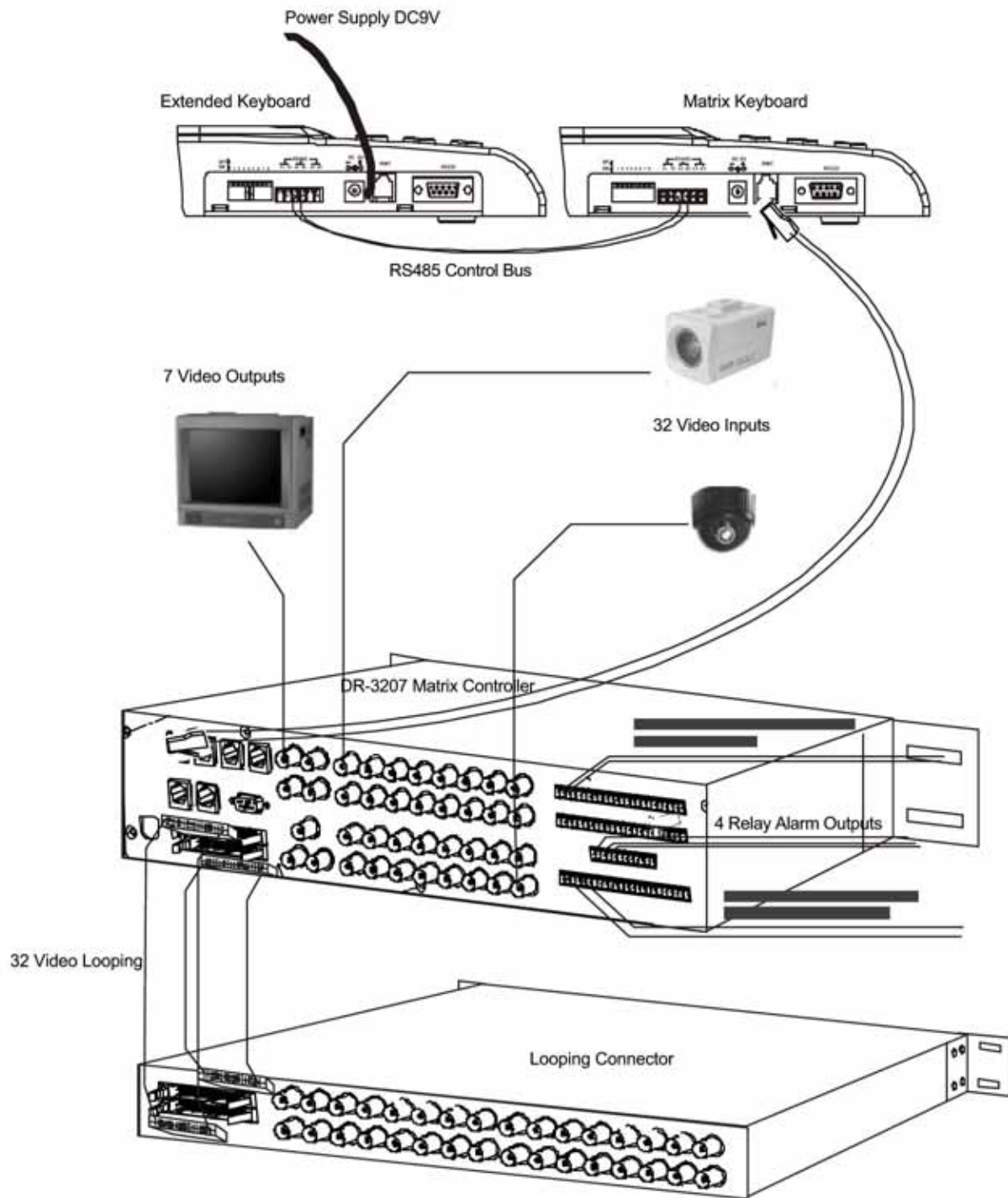
- Main matrix (when four matrixes are to be connected)
- Main matrix (when five matrixes are to be connected)
- 1# subsidiary matrix
- 2# subsidiary matrix
- 3# subsidiary matrix
- 4# subsidiary matrix

- 3) SW6: this switch is for communication matching impedance setting. In the communication process, when the communication distance is too long or the internal resistance of transmitting line is too large, abnormal communication will arise. Now user should connect the matching impedance to the communication equipments.
- Switch bit 1, bit 2 & bit 3 are not in use now and should be set as OFF.
 - Switch bit 4 is set as ON, the expansion communication port is connected to matching impedance (default setting is OFF).
 - If switch bit 5 is set as ON, the RS485 communication port 1 is connected to matching impedance (default setting is OFF).
 - If switch bit 6 is set as ON, the RS485 communication port 2 is connected to matching impedance (default setting is OFF).
 - If switch bit 7 is set as ON, the RS485 communication port 3 is connected to matching impedance (default setting is OFF).
 - If switch bit 8 is set as ON, the RS485 communication port 4 is connected to matching impedance (default setting is OFF).

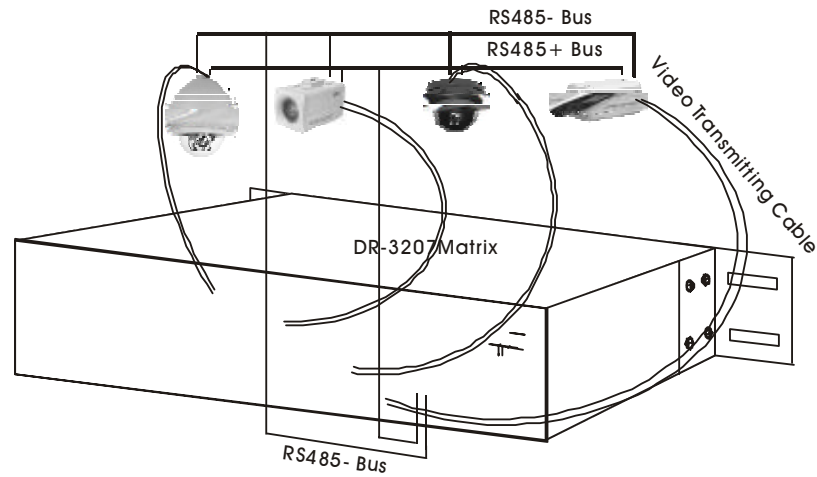
2 Matrix alarm board (219-PBM-Alarm)

- 1) SW1: this switch is for setting RS485 communication port impedance.
- If switch bit 1 is set as ON, the RS485 communication port 3 is connected to matching impedance (default setting is OFF).
 - If switch bit 2 is set as ON, the RS485 communication port 4 is connected to matching impedance (default setting is OFF).
 - If switch bit 3 is set as ON, the RS485 communication port 2 is connected to matching impedance (default setting is OFF).
 - If switch bit 4 is set as ON, the RS485 communication port 1 is connected to matching impedance (default setting is OFF).
 - If switch bit 5 is set as ON, the RS485 communication port 5 is connected to matching impedance (default setting is OFF).
 - If switch bit 6 is set as ON, the RS485 communication port 6 is connected to matching impedance (default setting is OFF).
 - If switch bit 7 is set as ON, the RS485 communication port 7 is connected to matching impedance (default setting is OFF).
 - If switch bit 8 is set as ON, the RS485 communication port 8 is connected to matching impedance (default setting is OFF).

7. BOLIDE Matrix Connection Configuration



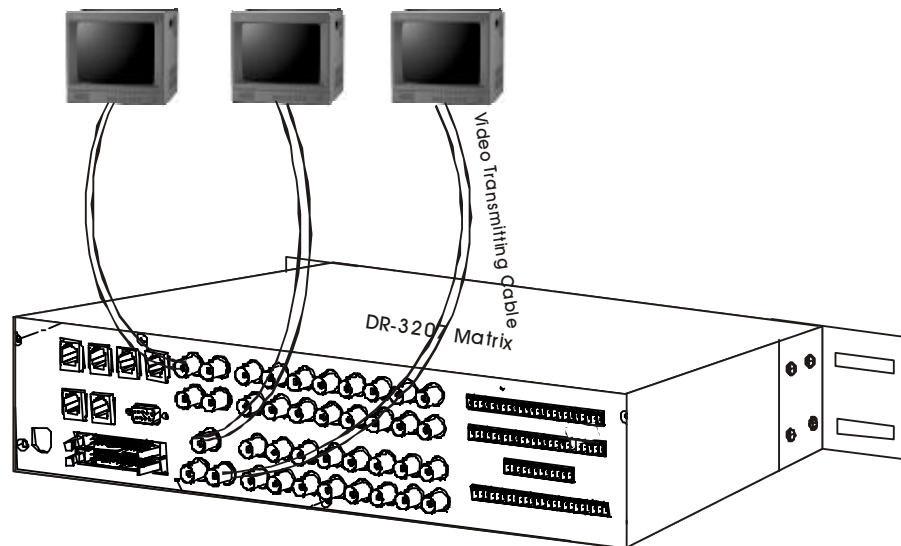
7.1 Video Input Connection Configuration



Note: pay attention to the following when conducting video input connections.

1. There are 1-32 video inputs which can be extended to 128 video inputs.
2. 1V(p-p, 75 Ω). When using RG-59 cable the maximum, transmittance distance dose not exceed 300m.
3. The RS485 lines of each dome camera must be connected to the RS485 control BUS of the matrix. The polarities in the connection must be correct (refer to Picture 6-7 for polarity indication);
4. The dome ID address must be the same with its video input port number of the matrix (the numbers are silkscreened on the back panel of the matrix). For example, when one dome is connected to the video input port number 1 in the matrix, the ID address of the dome must be set as 1.

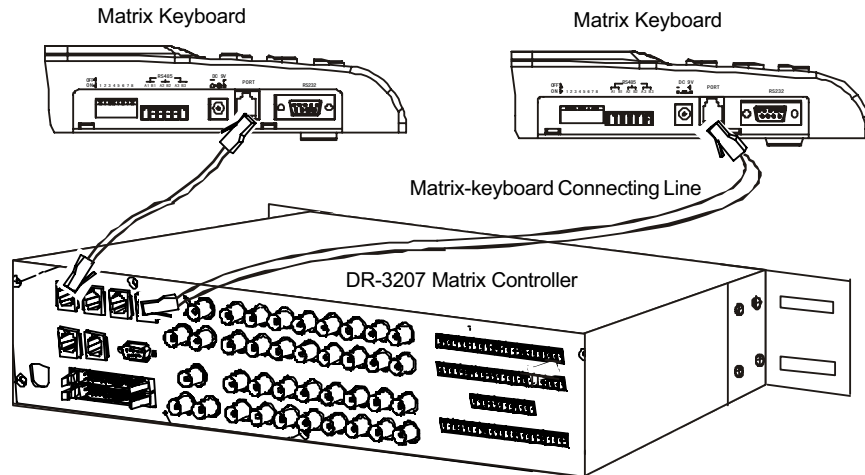
7.2 Video Output Connection Configuration



Note: pay attention to the following when conducting the video output connections.

1. There are 7 video outputs;
2. 1V(p-p, 75 Ω). When using RG-59 cable the maximum transmittance distance dose not exceed 300m.

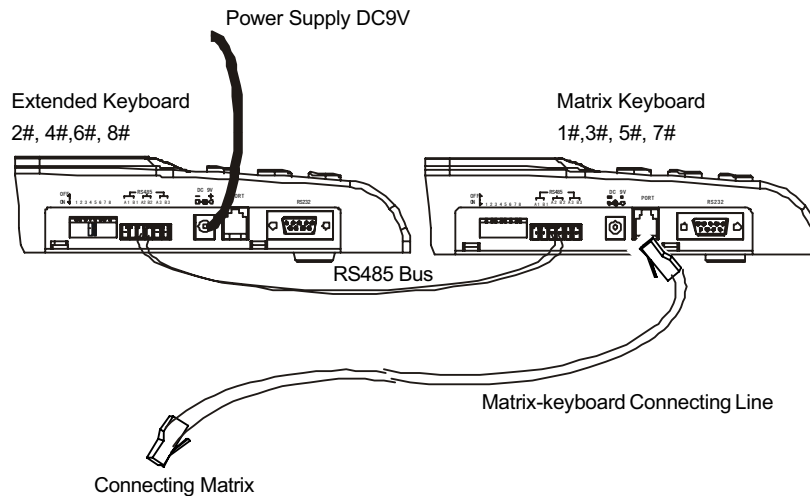
7.3 Matrix-Keyboard Connection Configuration



Note: pay attention to the following when conducting matrix-keyboard connections.

1. The matrix system can connect 4 matrix keyboards and the connection can be extended to 8 keyboards (refer to the next section for details).
2. Set all the bits of the DIP switch of the matrix keyboard as OFF.
3. When the matrix keyboard is connected to the matrix, the RS485 signal is transmitted to the keyboard by the matrix. There is no need to connect RS485 signals separately to the RS485 port of the keyboard.
4. When the matrix keyboard is connected to the matrix, the power is supplied to the keyboard by the matrix. There is no need to connect power supply to the power port of the keyboard.
5. The ID address of the keyboard must be the same with the number of the connecting port to the matrix (the numbers are silkscreened on the back panel of the matrix). Port no. 1 has the corresponding keyboard ID addresses 1 or 2; port no. 2 has the corresponding keyboard ID addresses 3 or 4; port no. 3 has the corresponding keyboard ID addresses 5 or 6; port no. 4 has the corresponding keyboard ID address 7 or 8.

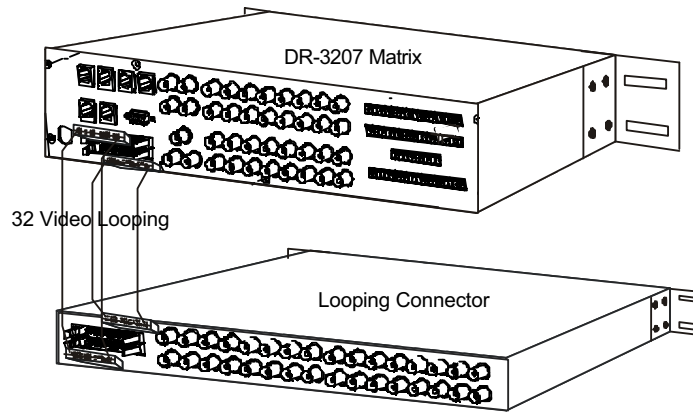
7.4 Extended Keyboard Connection Configuration



Note: pay attention to the following when conducting extended keyboard connections.

1. Each matrix keyboard can only connect one extended keyboard;
2. Connect the matrix keyboard with the matrix directly with the matrix-keyboard connection line;
3. Connect the A2, B2 ports of the RS485 socket group in the extended keyboard with the A2, B2 ports of the RS485 socket group in the matrix keyboard correspondently;
4. The power port of the extended keyboard should be connected to DC9V power supply separately;
5. The ID addresses of each group of matrix keyboard and extended keyboard must be different.

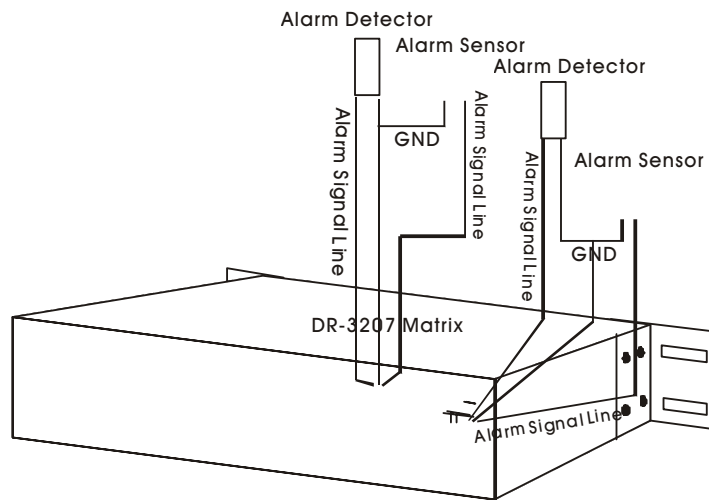
7.5 Video looping Connection Configuration



Note: pay attention to the following when conducting looping video connections.

1. Two 34-pin flat cable ports are used together with the looping connector for the looping video connections.
2. Please refer to the above picture for the connection between the 34-pin flat cable ports and the looping connector.(refer to Picture 6-5 for port numbers)
3. The BNC video port of the looping connector is connected to the matrix BNC video input port with the same number. For example, The No.1 BNC video port Of the looping connector is connected to the No.1 BNC video input port of the matrix.
4. The looping connector can connect the output video from the matrix to other equipment. On the other hand the looping connector can also connect input video to the matrix, but now the BNC video input port with a certain number in the matrix can only be connected to the video from the camera with the same number as its ID address.

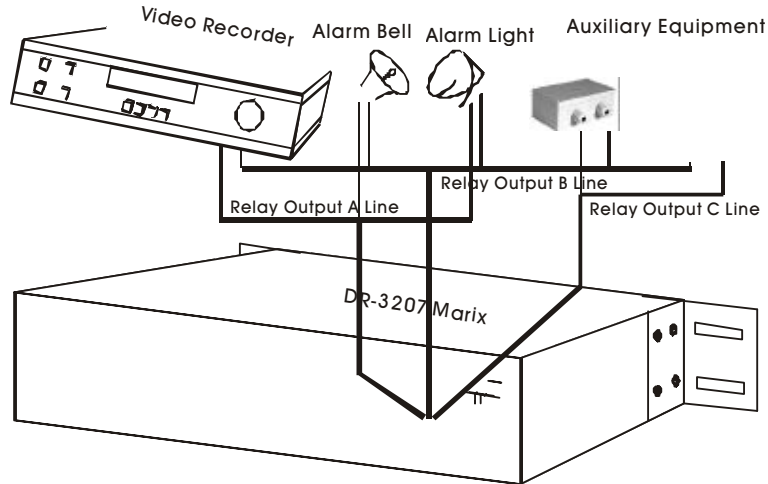
7.6 Alarm Input Connection Configuration



Note: pay attention to the following when conducting alarm input connections.

1. Each matrix has 32 built-in alarm inputs (can be extended to 128 inputs). Two alarm modes of Normal Open and Normal Close are available.
2. Each alarm detector must be connected to an alarm signal transmitting line and must be grounded simultaneously.(refer to Picture6-4 for port numbers)
3. Every two alarm signal transmitting lines have the same ground wire. All the ground wires must be connected.
4. The alarm area number of each detector must be the same with the number of the alarm input port in the matrix (the numbers are silkscreened on the back panel). For example, if the alarm input port is No.1 , its corresponding alarm area must be set as No.1 .

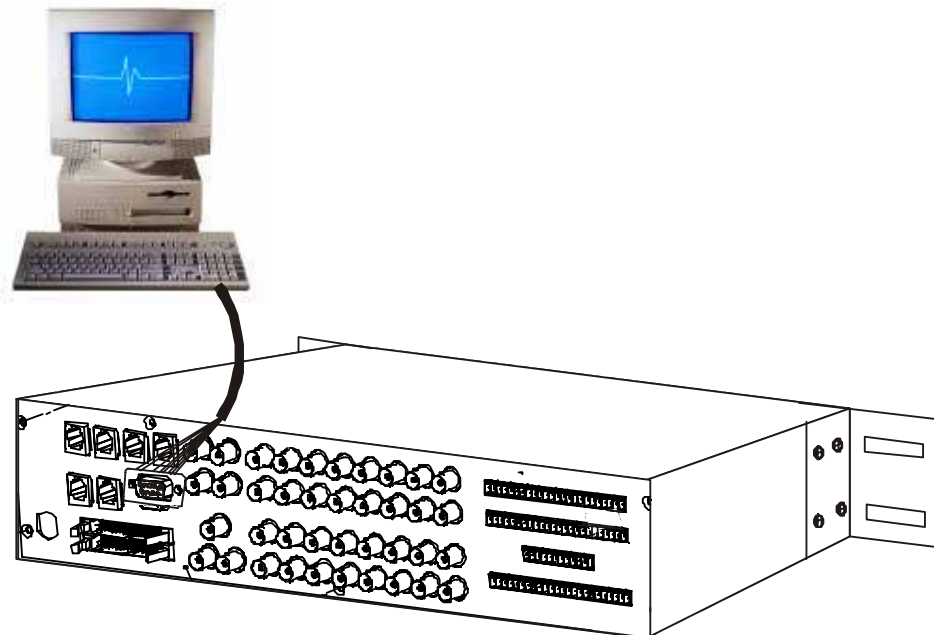
7.7 Alarm Output Connection Configuration



Note: pay attention to the following when conducting alarm input connections.

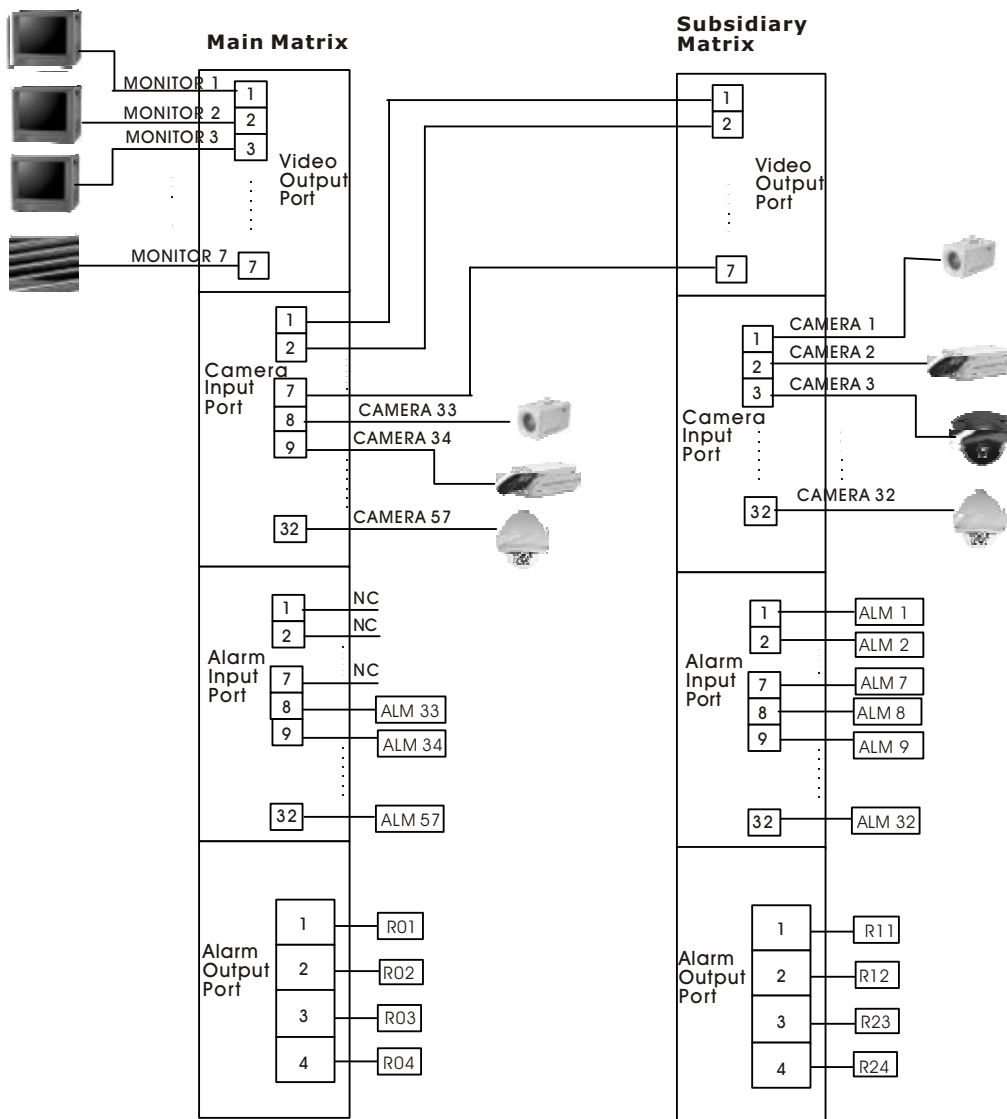
1. Each matrix has 4 built-in alarm outputs;
2. When setting the number of the driven relay of each alarm area through the system menu, the number must be the same with the corresponding matrix alarm output port number (the numbers are silkscreened on the back panel of the matrix).
3. Each device is connected to relay output B line. This is because when the system is in normal working condition relay output B line is connected to relay output C line and relay output B line is disconnected to relay output A line. When there is alarm event relay output B line will be connected to C line and B line will be disconnected to C line (refer to Picture 6-8 for port numbers).

7.8 RS232 Connection Configuration

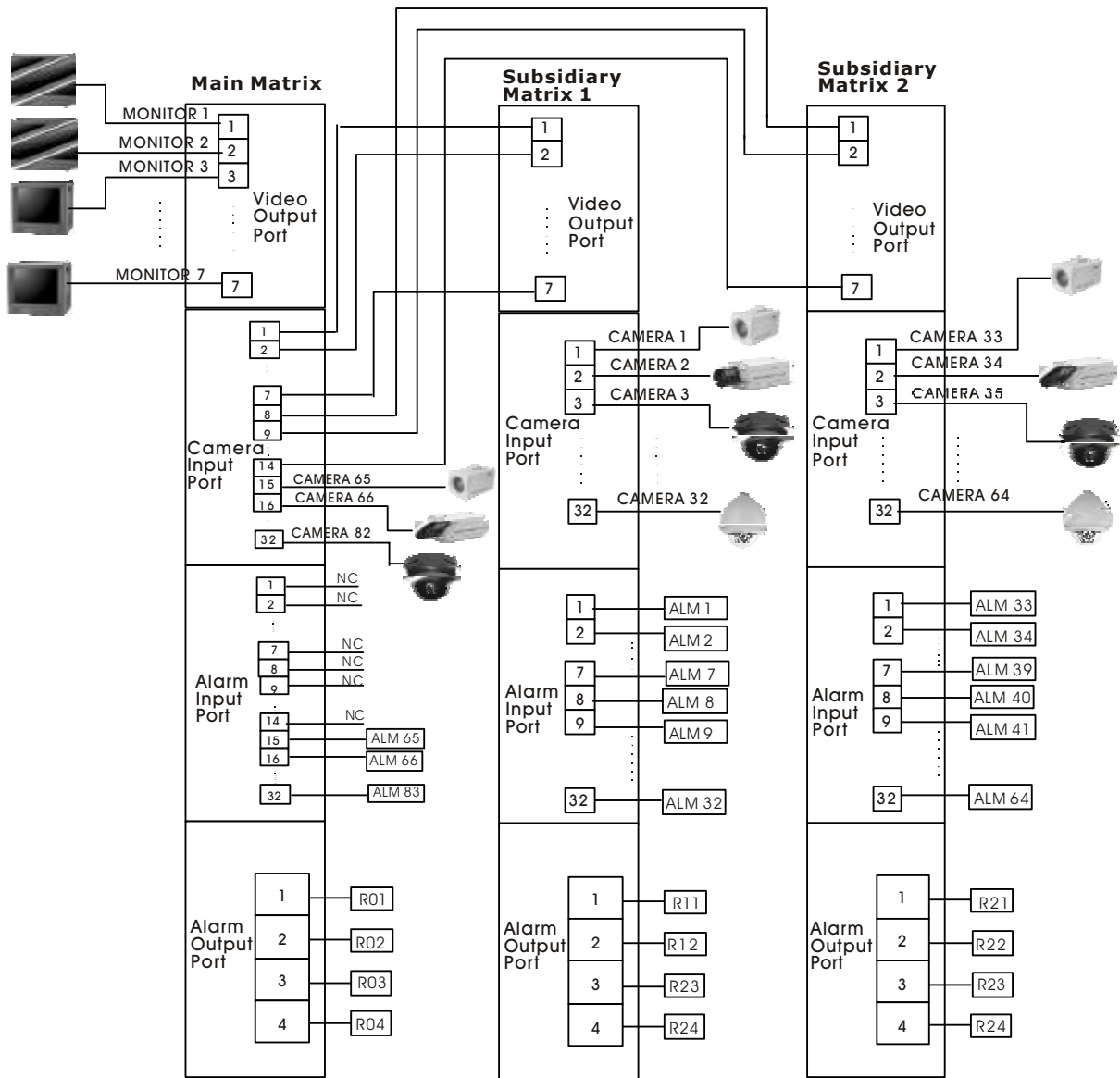


7.9 The Matrix Parallel Connection Configuration

1. Two Matrixes are to be connected



2. Three Matrixes are to be connected



Monitor x-- Connecting x# monitor.

NC--Connecting none.

Camera N--Camera's ID, also is the number of the matrix alarm input port.

Note: pay attention to the following when conducting the parallel connection between matrixes.

1. Up to 5 matrixes can be connected in the system with parallel connection;
2. In the parallel connection, only one matrix is to be the main matrix and up to 4 subsidiary matrixes can be connected. Use the DIP switch inside the matrix to set the matrix as main matrix or subsidiary matrix.
3. All the video output ports of subsidiary matrixes must be connected to the video input ports of the main matrix. The video output ports of the main matrix must be connected to the monitors.

8. User Logs in & Logs out

Keyboard password function is for safety purpose. The function only allows for authorized people to enter the system with a preset password. The factory default password is (000000), that is, no password setting. The system can include 8 different users with individual passwords.

The newly purchased system or the reset system has no password (the default password 000000 means no password has been set), thus the user can enter the system directly.

System master sets users' passwords: enter the system menu through keyboard #1, set passwords of all the users in advance. After determining the priority level of each user, system master should give passwords to each user based on his priority level. User must register before entering the system (refer to 9.1 System Setup for password setting operation).

If necessary system master can clear users' password.(refer to 9.1 System Setup for password clearance operation)

User registers with the system: after the keyboard is powered up, the LCD displays "SYSTEM PASSWORD". input the password given by the system master to enter the system.

User changes password: press "SHIFT-OPEN" keys and change the password as per the instructions on the LCD (system master cannot change but can clear the new passwords set by users).

User logs out: press "SHIFT CLOSE" keys to log out the system. The LCD displays "SYSTEM PASSWORD" If reentering the system, user must input the password.



NOTE: The causes of non-successful password changing:

- 1) Input old password is not correct;
- 2) Confirmed new password is not the same with the new password;
- 3) New password includes non-digital character (character other than 0-9);
- 4) New password is the same with the old password.

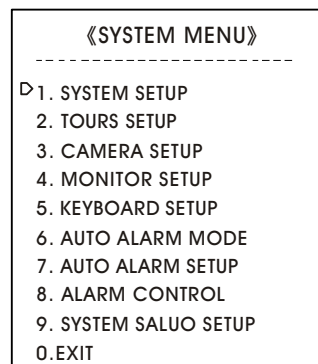
9. Program Setup

Stipulation

We set the following stipulations in order to help understand the manual.

1. The stipulations are only effective to this chapter (Program Setup)
 2. The key commands connected by "-" mean that user should press the keys in front of "-" first, and press the key after "-" later. For example: "1"(camera number) -"CAM" - "OPEN" means pressing"1" firstly, secondly "CAM", lastly "OPEN".
 3. Turning the joystick clockwise is the same function of pressing WIDE on the keyboard. Turning the joystick anti-clockwise is the same function of pressing TELE on the keyboard.
 4. All the following operations are completed by keyboard #1 with display on Monitor#1.
- SYSTEM MENU provides the control functions that can not be done by direct manual control operations. For a user, the access to SYSTEM MENU is limited by its priority level.
 - Enter SYSTEM MENU: press SHIFT-SET keys. The SYSTEM MENU will be displayed on Monitor #1 as Picture 9-0-1 shows. The following operation is applicable to SYSTEM MENU.
 - Joystick: to move the cursor to the desired item; move the joystick right to enter the setting.
 - ENTER key: to confirm the operation or selection.
 - Numeric keypad: to input digits to select desired items.
 - Exit SYSTEM MENU: Press 0 or move the cursor to 0.EXIT and move the joystick right to exit SYSTEM MENU.

The SYSTEM MENU has the following 9 items: SYSTEM SETUP, TOURS SETUP, CAMERA SETUP, MONITOR SETUP, KEYBOARD SETUP, AUTO ALARM MODE, AUTO ALARM SETUP, ALARM CONTROL, SYSTEM SALVO SETUP.

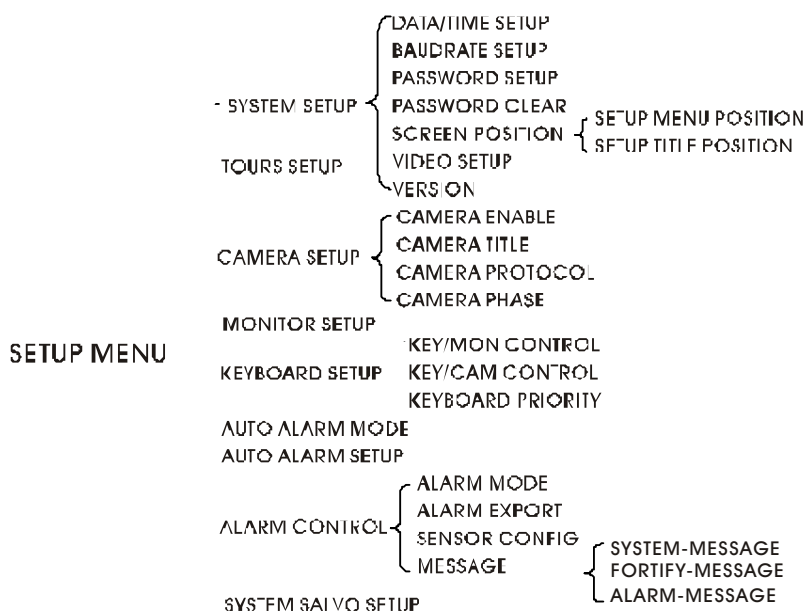


Picture 9-0-1

Select any one of 9 items from the menu as Picture 9-0-1 shows.

To select one item from the SYSTEM MENU:

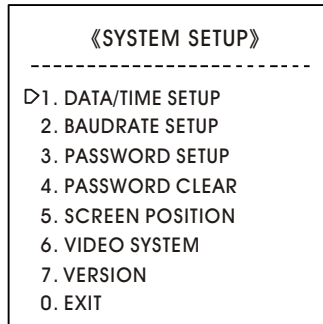
1. Move the joystick up and down to let the cursor point to the desired item. Move the joystick right to enter the setting or press the item number directly to enter the setting.
2. If there is no other item to be set, press 0 or move the joystick up and down to let the cursor point to the 0.EXIT item and move the joystick right to exit SYSTEM MENU.



9.1 System Setup

Enter the SYSTEM SETUP menu as picture 9-1-1 shows.

The menu includes the items as DATA/TIME SETUP, BAUDRATE SETUP, PASSWORD SETUP, PASSWORD CLEAR, SCREEN POSITION, VIDEO SETUP and VERSION.

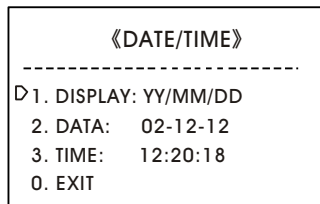


Picture 9-1-1

- 1) To choose one item from the menu, move the joystick up and down to let the cursor point to the desired item. Move the joystick right to enter the setting of the item or input the item number using the keyboard numeric keypad;
- 2) If there is no other setting, move the joystick left to return to higher level menu. Input 0 using the numeric keypad or move the cursor to 0.EXIT and then move the joystick right to exit SYSTEM MENU.

1. Date/Time setup

As picture 9-1-2 shows, Date/Time set includes DISPLAY (Asia Mode YY/MM/DD, Int'l Mode DD/MM/YY & USA Mode MM/DD/YY), DATE, TIME.



Picture 9-1-2

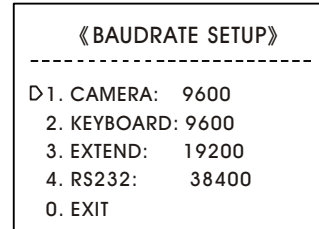
The setting procedure is as follows:

- 1) Move the joystick up and down to let the flashing cursor point to the desired item. Turn the joystick clockwise to enter the setting or just input the item number by using the numeric keypad to enter the setting.
- 2) After entering the setting, move the joystick left and right to select between the data items (only applicable to DATE and TIME). Move the joystick up and down to set the data or input the data by using the numeric keypad.
- 3) Turn the joystick anticlockwise to exit the setting. If there is other item to be set, repeat the above steps.
- 4) If there is no need to edit any item, move the joystick left to return to higher level menu; input 0 by using the numeric keypad or move the flashing cursor to 0.EXIT and turn the joystick clockwise to exit SYSTEM MENU.

NOTE: When changing the DISPLAY mode, the second item DATA will change accordingly. TIME mode remains as 24H.

2. Baud rate setup

As picture 9-1-3 shows, the menu includes the baud rate setup of the items as CAMERA, KEYBOARD, EXTEND, RS232.



Picture 9-1-3

- 1) Move the joystick up and down to let the flashing cursor point at the desired item. Turn the joystick clockwise to enter the setting or just input the item number by using the numeric keypad to enter the setting;
- 2) After entering the setting, move the joystick up and down to set the data.
- 3) Turn the joystick anticlockwise to exit the setting. If there is other item to be set, repeat the above steps.
- 4) If there is no need to edit any item, move the joystick left to return to higher level menu; input 0 by using the numeric keypad or move the flashing cursor to 0.EXIT and turn the joystick clockwise to exit SYSTEM MENU.

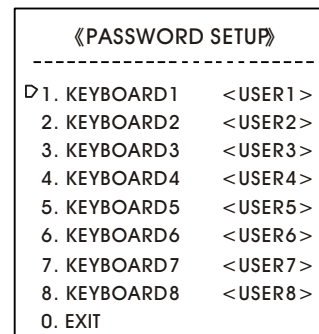
NOTE: All the revised data can only be stored after exiting the menu.

NOTE: If there is power cut during the setting, the revised data will not be stored.

NOTE: When revising the baud rate of the keyboard (only to be 9600 or 19200), the system will exit menu after a BEEP sound. Baudrate of keyboard must be the same as that of system.

3. User password setup

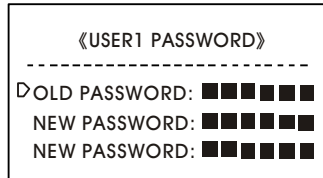
The system allows each keyboard to register a different priority level. There is a factory default 6-digit password for each user. User can modify the password when necessary. Enter the PASSWORD SETUP menu as Picture 9-1-4 shows.



Picture 9-1-4


The setting procedure is as follows:

- 1) Move the joystick up and down to let the cursor point to the desired item. Move the joystick left to enter the setting or input the item no. to enter the setting. Refer to Picture 9-1-5.



Picture 9-1-5

- 2) Input the OLD PASSWORD, NEW PASSWORD, and confirm NEW PASSWORD, lastly press ENTER. If successful the system will display PASSWORD UPDATE SUCCEED and return to the higher level menu automatically. If not successful, the system will display PASSWORD UPDATE FAIL and the menu still remains in the password setup page.
- 3) To set other passwords repeat the above steps. If there in no other setting, move the joystick left to return to the higher level menu. User can also press 0 or move the cursor to 0. EXIT and move the joystick right to exit SYSTEM MENU.

 NOTE: User should input the three passwords one by one and confirm by pressing ENTER.

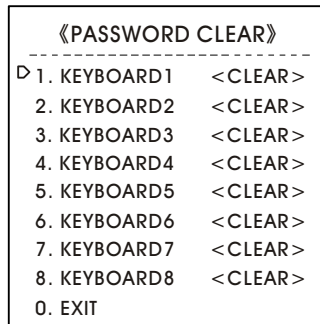
NOTE: If moving the joystick left during the password modification the system will return to the higher level menu and the modification is not successful.

The causes of unsuccessful setup:

- The old password is not correct;
- The new password and the confirmed new password are not the same;
- The new password is the same as the old password.

4. Clear user password

The system master (highest level user) can clear passwords set by lower level users when necessary. Enter the PASSWORD CLEAR menu as Picture 9-1-6 shows.



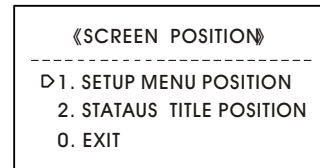
Picture 9-1-6

The setting procedure is as follows:

- 1) Move the joystick up and down to let the cursor point to the desired item. Turn the joystick clockwise to enter the setting or press the item number to enter the setting. Now the word CLEAR flashes.
- 2) Press ENTER key to clear the user password.
- 3) To clear other passwords repeat the above steps. If there in no other setting, move the joystick left the return to the higher level menu. User can also press 0 or move the cursor to 0.EXIT and move the joystick right to exit SYSTEM MENU.

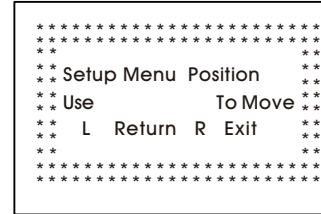
5. Screen position setup

It is to adjust the menu display position, status title display position on monitor. Refer to picture 9-1-7.

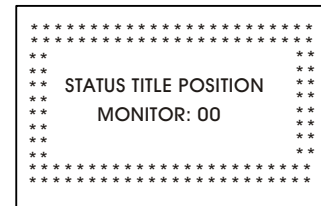


Picture 9-1-7

There are two menuitems: SETUP MENU POSITION & STATUS TITLE POSITION. Refer to Picture 9-1-8 and Picture 9-1-9 for setting details.




Picture 9-1-8



Picture 9-1-9

- 1) Move the joystick up and down to let the flashing cursor point at the desired item. Move the joystick right to enter the setting or just input the item number by using the numeric keypad to enter the setting;
- 2) After entering the setting, move the joystick left and right, up and down to adjust the screen display positions.
- 3) For STATUS TITLE POSITION setting, firstly move the joystick up and down to select the monitor (1-7), and turn the joystick clockwise to enter the setting. Move the joystick up and down, left and right to adjust the screen display position. At the same time, user can press the NEXT and PREV keys to change the brightness of characters.
- 4) After completing one setting, turn the joystick anticlockwise to exit the setting. If there is other setting repeat the above steps.
- 5) If there is no need to edit any item, move the joystick left to return to higher level menu; Input 0 by using the numeric keypad or move the flashing cursor to 0.EXIT and move the joystick right to exit SYSTEM MENU.

 NOTE: SETUP MENU POSITION is only applicable to Monitor #1. L in picture 9-1-8 means turning the joystick anticlockwise to return to higher level menu, and R in picture 9-1-8 means turning the joystick clockwise to exit.

6. Video setup

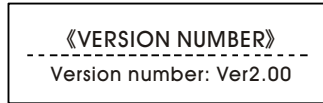
It is to adjust video module. There are two video modules: PAL, NTSC. Refer to picture 9-1-10. Move the joystick up and down to select the module. Move the joystick left to return to higher level menu.



Picture 9-1-10

7. Version

It is to inquire the version number. Move the joystick left to return to higher level menu.(Refer to picture 9-1-11)



Picture 9-1-11

9.2 Standard Switching Sequence Program Setup

Enter the TOURS SETUP menu as picture 9-2-1 shows. The list is for programming or editing standard switching sequence. The system can set and program 30 different switching sequences, and each sequence can have up to 640 steps. Each step can be any video of a camera. Within the same sequence, the same video can repeat for multiple times.

TOURS SETUP			

GROUP 01	LENGTH 0007		

STEP	CAM	DWELL	PRE
0001	001	002	010
0002	002	004	020
0003	003	002	088
0004	004	003	099
0005	005	002	100
0006	006	005	000
0007	007	003	011

Picture 9-2-1

GROUP n: sequence number (1-30 groups).

LENGTH n: the steps in the sequence (1-640 steps).


STEP: step number (1-640 steps).

CAM: camera number of each step (1-128).

DWELL: dwell time of each step video (1-128 seconds).

PRE: preset number of each camera (0-100, 0 iiiiii designate the current video).

- 1) After entering the TOURS SETUP menu, user can find the GROUP number flashes. Move the joystick up and down to select group number (1-30). Turn the joystick clockwise to enter the sequence list.

 NOTE: If the sequence has been edited (with steps), the steps will be displayed. If the sequence has not been edited, only LENGTH 0000 will be displayed (no steps); now if turning the joystick clockwise, user can add one step with default setting as 0001 000 000 000; the LENGTH is displayed as LENGTH 0001.

- 2) After entering the step settings, just switch the joystick up and down to select STEP number. Turn the joystick clockwise to enter the settings of CAM, DWELL, PRE.
- 3) Move the joystick left and right to point the cursor to the desired item. Set the data by using the numeric keypad .
- 4) Turn the joystick anticlockwise to exit the setting of the current step.
- 5) Insert a step: move the cursor to the step that is to be inserted after, such as STEP0005 . Press the NEXT key on keyboard for more than 2 seconds. This is to insert a step STEP0006 after STEP0005. The STEP0005 and the above steps remain unchanged. The original numbers of all the steps after STEP0005 will be changed by adding 1 , but the settings of all the steps remain unchanged. The inserted STEP0006 has the original data as 0006(STEP), 000(CAM), 000(DWELL), 000(PRE) , so the user should set the CAM, DWELL, PRE data. After the insertion, the LENGTH number will be changed by adding 1.
- 6) Delete a step: move the cursor to the step that is to be deleted. For example, to delete STEP0005 , just press PREV key on keyboard for more than 2 seconds. The 4 steps before the original STEP0005 remain unchanged. The step numbers after the original STEP0005 will be changed by decreasing 1.
- 7) After completing all the above settings, turn the joystick anticlockwise to return to the GROUP number selection menu.
- 8) If there is other group to be edited, select the group number and repeat the upper steps to complete the programming. To exit, move the joystick left.

EXAMPLE: for picture 9-5-1, there are 6 steps for GROUP01 .

Step 1: Camera No.1 Dwell Time: 2 seconds Preset No: 10

Step 2: Camera No.2 Dwell Time: 4 seconds Preset No: 20

Step 3: Camera No.3 Dwell Time: 2 seconds Preset No: 88

Step 4: Camera No.4 Dwell Time: 3 seconds Preset No: 99

Step 5: Camera No.5 Dwell Time: 2 seconds Preset No: 100

Step 6: Camera No.6 Dwell Time: 5 seconds Preset No: 0

OPERATION: After entering the SYSTEM SALVO SETUP menu, the GROUP number will flash. Input 1 by using the numeric keypad or by moving the joystick up and down to select, thus the GROUP01 sequence number is set. Press ENTER or turn the joystick clockwise to enter the detailed settings. Move the joystick up and down to select between steps. For example, after selecting step 1 , move the joystick left and right to select items CAM, DWELL, and PRE. To set the data, input the digits by using the numeric keypad or by moving the joystick up and down to select. After completing, turn the joystick anticlockwise to exit the setting. Set the data for the other 5 steps with the similar operation as above. Turn the joystick anticlockwise to exit the setting.

9.3 Dome Camera Setup

The items in the menu include CAMERA ENABLE (dome usage status setting), CAMERA TITLE (title setting), CAMERA PROTOCOL (protocol setting) and CAMERA PHASE(phase setting). Refer to picture 9-3-1.

«CAMERA SETUP»	

D1.	CAMERA ENABLE
2.	CAMERA TITLE
3.	CAMERA PROTOCOL
4.	CAMERA PHASE ANGLE
5.	MACRO FUNCTION
0.	EXIT

Picture 9-3-1

The setting procedure is as follows:

- 1) Move the joystick up and down to let the flashing cursor point to the desired item. Move the joystick right to enter the setting or just input the item number by using the numeric keypad to enter the setting.
- 2) After completing one setting, move the joystick left to exit the setting. If there is other setting repeat the above steps.
- 3) If there is no more need to edit any item, move the joystick left to return to the higher level menu; Input 0 by using the numeric keypad or move the flashing cursor to 0.EXIT and move the joystick right to exit SYSTEM MENU.

1. Dome camera usage status setting

Enter the CAMERA ENABLE menu as picture 9-3-2 shows. Dome camera usage status setting is to set the video display status of each camera.

«CAMERA TITLE»	

CAMERA	CAMERATITLE

001	Camera-001
002	Camera-002
003	Camera-003
004	Camera-004
005	Camera-005
006	Camera-006
007	Camera-007
008	Camera-008

Picture 9-3-2

The setting procedure is as follows:

- 1) Move the joystick up and down to select camera number. Turn the joystick left and right to select ENABLE or DISABLE. ENABLE means the camera channel is opened and the camera is in use. DISABLE means the camera channel is not opened and the camera is not in use.
- 2) If there is no other items to be edited, move the joystick left to return to the higher level menu.

2. Camera title setting

Enter CAMERA TITLE menu as picture 9-3-3 shows. It is to set the titles of cameras.

«CAMERA TITLE»	

CAMERA	CAMERATITLE

001	Camera-001
002	Camera-002
003	Camera-003
004	Camera-004
005	Camera-005
006	Camera-006
007	Camera-007
008	Camera-008

Picture 9-3-3

The setting procedure is as follows:

- 1) Move the joystick up and down to select dome camera. The number of the camera may be 32, 57, 82, 96, 128 with different configures. Two Matrixes are to be connected. Each page can display 8 titles. When moving the cursor to the top or end of each page, if user still move the joystick up or down, the system will turn pages automatically. After selecting camera number, turn the joystick clockwise to enter the setting of title characters.
- 2) Move the joystick left and right to select between the character items.
- 3) Move the joystick up and down to select the number. When select "?", it means that you select a blank on the position. The character of the title sequence is as follows:

```

ABCDEFGHIJKLMN OPQRSTUVWXYZ
acdefghejklmno pqrstuvwxyz
0123456789 < > / ▶ ◀ * YZyz
    
```

- 4) Turn the joystick anticlockwise to return to the camera selection status. Repeat the above steps to complete all the cameras' titles setting.
- 5) If there is no more items to be edited, move the joystick left to return to the higher level menu.

3. Dome camera protocol selection

Enter CAMERA PROTOCOL menu as picture 9-3-4 shows. The system supports multiple protocols, user can select the supporting protocol as he wants. (the system just supports SAE protocol at present.)

«CAMERA PROTOCOL»	

CAMERA	PROTOCOL

001	PELCO
002	PELCO
003	PELCO
004	PELCO
005	PELCO
006	PELCO
007	PELCO
008	PELCO

Picture 9-3-4

The setting procedure is as follows:

- 1) Move the joystick up and down to select dome camera (1-128). Each page will display 8 domes. When moving the cursor to the top or end of the page, user can move the joystick up or down to turn the pages.
- 2) After selecting the dome camera, turn the joystick clockwise to select the protocol.
- 3) Repeat the above steps to complete the protocol settings of all dome cameras.
- 4) If there is no other item to be set, move the joystick left to return to the higher level menu.

4. Dome camera phase setting

Enter the CAMERA PHASE menu as Picture 9-3-5 shows.

《CAMERA PHASE ANGLE》	
CAMERA	PHASE/ANGLE
001	Free Switch
002	0 DEGREE
003	60 DEGREE
004	120 DEGREE
005	180 DEGREE
006	240 DEGREE
007	300 DEGREE
008	Free Switch

Picture 9-3-5

- 1) Move the joystick up and down to select between domes (1-128). Each page will display 8 domes. Move the joystick up and down further to turn the pages when the cursor is at the top or bottom of the page;
- 2) After selecting a dome, turn the joystick clockwise to set the phase of the dome;
- 3) Repeat the above steps to complete the phase settings of all the domes;
- 4) If there is not any other item to be changed, move the joystick left to return to the higher lever menu.

5. Macro Function Setting

Refer to Picture 9-3-6 for entering MACRO FUNCTION menu. A group of domes can run designated operations at the same time through MACRO FUNCTION setting.

《MACRO FUNCTION》	
MACRO NO:01	
001	AUTO PAN
002	TOUR
003	AUTO PAN
004	NO ACT
005	TOUR
006	PATTERN
007	END_ACT
008	NO_ACT

Picture 9-3-6

Set it as following steps:

1. Move the joystick up and down to select MACRO #, and then rotate the joystick right or press the TELE key on the keyboard to enter the setting of MACRO FUNCTION.
2. Move the joystick up and down to select the camera, and then move the joystick right and left to select different functions. The MACRO FUNCTION can set as TOUR, AUTO PAN, PATTERN, NO_ACT or END_ACT. Their meanings define as follows:
 TOUR—run Tour No. 1
 AUTO PAN—run Auto Pan
 PATTERN—run Pattern No. 1
 NO_ACT—no action
 END_ACT—stop running MACRO FUNCTION
 The actions run by TOUR, AUTO PAN, or PATTERN should be set previously and run at least one time. The speed of running TOUR or AUTO PAN is same as the speed of the latest time of running this function.
3. Repeat the above steps to set all the MACRO FUNCTIONS.(8 MACRO FUNCTIONS can be set at most)
4. If there isn't any item needed to be modified, move the joystick left to back to previous menu.

9.4 Monitor Setup

Enter MONITOR SETUP submenu as picture 9-4-1 shows. It is to set the monitor title. Refer to camera title setting section for similar setting operation.

《MONITOR SETUP》	
MONITOR	MONITORITEL
001	Monitor-001
002	Monitor-002
003	Monitor-003
004	Monitor-004

Picture 9-4-1

9.5 Keyboard Setup

Refer to picture 9-5-1. The menu items include KEY/COMCONTROL (keyboard to control dome camera), KEY/MONCONTROL (keyboard to control monitor) and KEYBOARD PRIORITY (keyboard priority setting).

《KEYBOARD SETUP》	
▷1.	KEY/MON CONTROL
2.	KEY/CAM CONTROL
3.	KEYBOARD PRIORITY
0.	EXIT

Picture 9-5-1

The setting procedure is as follows:

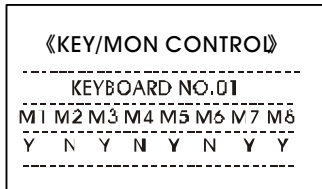
- 1) Move the joystick up and down to let the flashing cursor point at the desired item. Move the joystick right to enter the setting or just input the item number by using the numeric key-

pad to enter the setting;

- 2) After completing one setting, move the joystick left to exit the setting. If there is other setting repeat the above steps.
- 3) If there is no need to edit any item, move the joystick left to return to higher level menu; Input 0 by using the numeric keypad or move the flashing cursor to 0.EXIT and move the joystick right to exit SYSTEM MENU.

1. Keyboard to control the monitor

Enter the KEY/MON CONTROL MENU as picture 9-5-2 shows. It is to set the monitors that can be controlled by a certain keyboard.



Picture 9-5-2

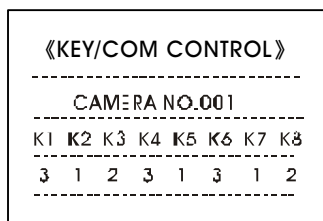
The setting is as follows:

- 1) Move the joystick up and down to select keyboard no., and turn the joystick clockwise to enter the setting of the controllable keyboards.
- 2) Move the joystick up and down to adjust the control status of the keyboards (Y or N). Turn the joystick clockwise or anticlockwise to select monitor numbers. Y means the monitors can be controlled by the keyboard and N means the monitors cannot be controlled by the keyboard.
- 3) After completing turn the joystick anticlockwise to return to the keyboard selection menu. If there is setting to other keyboards, repeat the above steps.
- 4) If there is no other item to be set, move the joystick left to return to higher level menu.

Picture 9-5-2: Keyboard No. 01 has the right to control Monitor #1,3,5,7, 8, and has no right to control Monitor #2,4,6.

2. Keyboard to control the dome

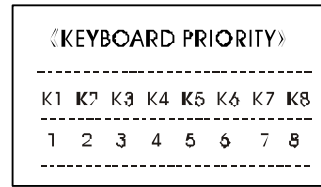
It is to set the keyboards that can control a certain dome camera. The setting procedure is similar to that mentioned in the above section. Picture 9-5-3 designates that for a certain camera No. 1, keyboards # 1,4,6 have the right level 3 to control, keyboards # 2,5,7 have the right level 1 to control, and keyboard # 3,8 have the right level 2 to control. (1. No right of access to the dome camera; 2. Has right of access to the video only; 3. Has right of access to the video and control of the dome camera.)



Picture 9-5-3

3. Keyboard priority setup

Enter the KEYBOARD PRIORITY submenu as picture 9-5-4 shows. The priority level of each keyboard limit the functions of it.



Picture 9-5-4

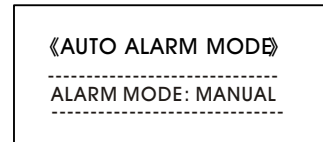
The setting procedure is as follows:

- 1) Move the joystick up and down to adjust priority level. Turn the joystick clockwise or anticlockwise to select keyboard.
- 2) If there is no other item to be set, move the joystick left to return to higher level menu.

Picture 9-5-4 shows that the priority levels of keyboard #1-8 are 1-8 (highest level is 8 and lowest level is 1).

9.6 Alarm Mode

Enter AUTO ALARM MODE submenu as picture 9-6-1 shows to set alarm arming mode: MODE1: MANUAL; MODE2: AUTO. Move the joystick up and down to select. Move the joystick left to exit and return to higher level menu.



Picture 9-6-1

9.7 Auto Alarm Setup

Enter the AUTO ALARM SETUP submenu as picture 9-7-1 shows. There are two modes to arm alarms: AUTO or MANUAL. When AUTO mode is selected, the system will process the alarm information automatically as per the programmed AUTO ALARM SETUP commands, and the system will process manual commands sent through the keyboard; When MANUAL mode is selected, the system will only process manual commands to arm/disarm alarms and the AUTO ALARM SETUP is not useful now. Refer to the following for details.

AUTO ALARM SETUP		
AREA	START	END
001	13:00	09:30
002	14:00	10:30
003	15:00	12:30
004	16:00	23:30
005	17:00	09:30
006	18:00	08:30
007	19:00	07:30
008	20:00	06:30

Picture 9-7-1

- 1) Move the joystick up and down to select between alarm areas (1-128). 8 alarm areas display on each page. When user moves the joystick to the top or the end of the page and still moves the joystick up or down, the system turns to the previous or next page automatically.
- 2) After selecting alarm area, turn the joystick clockwise to enter the arming /disarming time setting.
- 3) Move the joystick left and right to select between data items. Move the joystick up and down to set the data or input data by using the keyboard numeric keypad.
- 4) After completing the setting turn the joystick anticlockwise to exit. If there is need to set other alarm area, repeat the above steps.
- 5) If there is no other setting, turn the joystick left to return to higher level menu.

AREA: alarm area sequence number.

START: the time to arm an alarm (24H).

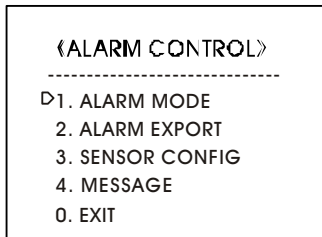
END: the time to disarm an alarm (24H).

EXAMPLE: To arm an alarm at 13:00 the first day and disarm it at 9:30 the second day on alarm area 001, the operation is as follows:

Enter the AUTO ALARM SETUP submenu, move the joystick up and down to select alarm area 001, or just press 1 using the numeric keypad. Turn the joystick clockwise to enter START item, input 13:00 using the numeric keypad or move the joystick up and down to select data. Move the joystick to enter END item, input 09:30. Turn the joystick anticlockwise to return to the AREA item, move the joystick up and down to select another AREA number. After completing all the operation, move the joystick left to return to higher level menu.

9.8 Alarm Control

Enter ALARM CONTROL submenu as picture 9-8-1 shows. It includes the items of ALARM MODE, ALARM EXPORT, SENSOR CONFIG and MESSAGE.

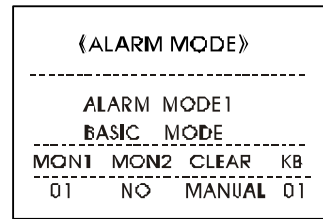


Picture 9-8-1

- 1) To select one item in the submenu, move the flashing cursor to the item to be selected, move the joystick right to enter the setting of the item or just input the item number using the numeric keypad.
- 2) If there is no need to edit any item, move the joystick left to return to higher level menu; input 0 using the numeric keypad or move the flashing cursor to 0.EXIT and move the joystick right to exit.

1. Alarm mode

Enter ALARM MODE submenu as picture 9-8-2 shows. As mentioned before, there are three kinds of alarm display modes: BASIC MODE, AUTO-BUILD, SEQUENCE DISPL.



Picture 9-8-2

The setting is as follows:

- 1) After entering the Alarm Mode item, move the joystick up and down to select the desired mode.
- 2) After selecting alarm mode, turn the joystick clockwise to display the detailed setting list of each mode. Move the joystick left and right to select between the data items. Move the joystick up and down to set the data.
- 3) Turn the joystick anticlockwise to return to ALARM MODE selecting menu.
- 4) If there is no other setting, move the joystick left to return to the higher level menu.

NOTE: MON1 & MON2 designate the monitors to display the alarm videos, and numbers below are the monitor sequence numbers. CLEAR designates the mode of clearing an alarm (MANUAL or AUTO). KB designates the keyboard that has the right to clear the alarm.

2. Alarm output

Enter ALARM EXPORT submenu as picture 9-8-3 shows.

The following list is for programming or editing alarm output control. Alarm output control is to control the operations of dome cameras in the alarm area and the driving of periphery equipments when there is alarm event happening.

AREA: alarm area sequence number (1-128).

CAM: camera number (1-128).

PRE: the preset number of camera (0-100, 0 designates the current video).

AX: relay number (R1-R4).

CTRL: driving mode of the relay (ON, OFF)

DWL: time of response.

```

  <<ALARM EXPORT>>
  -----
  AREA CAM PRE AX CTRL DWL
  -----
  001 001 000 R01 ON 010
  002 002 000 R02 OFF 010
  003 003 000 R03 ON 010
  004 004 000 R04 OFF 010
  005 005 000 R01 ON 010
  006 006 000 R02 OFF 010
  007 007 000 R03 ON 010
  008 008 000 R04 OFF 010
  
```

Picture 9-8-3

The setting procedure is as follows:

- 1) After entering the ALARM EXPORT submenu, move the joystick up and down to select between the alarm area numbers (1-128). Turn the joystick clockwise to enter the alarm output

setting of the selected alarm area.

- 2) Move the joystick left and right to select between the data items. Move the joystick up and down to set the data.
- 3) After the setting is completed, turn the joystick anticlockwise to exit the setting. If there is setting for other alarm area, repeat the above steps.
- 4) If there is no other setting, move the joystick left to return to the higher level menu.

3. Alarm sensor configuration setting

Enter the SENSOR CONFIG submenu as Picture 9-8-4 shows. It is to set the alarm mode of each alarm sensor. OPEN means the alarm is activated when the circuit is open and CLOSE means the alarm is activated when the circuit is closed.

《SENSOR CONFIG》	
AREA	CONFIG
001	OPEN
002	CLOSE
003	OPEN
004	OPEN
005	CLOSE
006	CLOSE
007	OPEN
008	CLOSE

Picture 9-8-4

The setting steps are as follows:

- 1) Move the joystick up and down to select between area numbers. Turn the joystick anti-clockwise or clockwise to set OPEN or CLOSE.
- 2) If there is no other changing, move the joystick left to return to the higher level menu.

4. Message display

Enter the MESSAGE submenu as picture 9-8-5 shows. The items include SYSTEM---MESSAGE, FORTIFY---MESSAGE, ALARM---MESSAGE.

Select one item from the following submenu.

《MESSAGE》
▷1. SYSTEM - MESSAGE
2. FORTIFY - MESSAGE
3. ALARM - MESSAGE
0. EXIT

Picture 9-8-5

- 1) Move the joystick up and down to let the flashing cursor point the desired item. Move the joystick right to enter the setting of the item or just input the item number using the numeric keypad.
- 2) After entering one setting, press PREV and NEXT to turn pages.

- 3) If there is no other item to be set, move the joystick left to return to higher level menu; or just input 0 using the numeric keypad or move the joystick up and down to let the cursor point to 0.EXIT and then move the joystick right to exit SYSTEM SETUP.

Explanation:

- 1) The recorded system turning on/off time is the latest 5 one.
- 2) The recorded alarm arming/disarming information is of the latest 1000 operations. The information includes the alarm area number, date and time of each arming/disarming operation.
- 3) The recorded alarm events are of the latest 1000 ones. The recorded information includes alarm area number, date and time of each alarm event.

9.9 Salvo Switch Setup

Enter the SYSTEM SALVO SETUP menu as picture 9-9-1 shows. The list is for programming or editing the salvo switch sequence. Salvo switch means that different videos are switched to different monitors simultaneously. The system can program 16 groups of salvo switch sequences. Each sequence can have up to 64 steps. Each monitor can display any preset of any camera.

《SYSTEM SALVO SETUP》		
GROUP: 01	STEP: 01	LEN: 01
MONITOR	CAMERA	PRE
01	002	001
02	128	002
03	099	003
04	028	100
05	067	000
06	005	100
07	100	100

Picture 9-9-1

GROUP: salvo switch sequence number (1-16).


STEP : switch step number (1-64).

LEN : the total steps (1-64)


MON : monitor number (1-7)

CAM : the camera number (1-128)

PRE : the preset number of a camera (0-100; 0 is the current video)

 NOTE: When setting or editing a program, the running salvo switch sequence will be stopped.

- 1) After entering the salvo switch setup, the GROUP number will flash. Move the joystick up and down to select the GROUP number (1-16).
- 2) Move the joystick right to let the cursor to point to the STEP number. The number flashes. Input the number by Move the joystick up and down to select the STEP number (1-64).
- 3) Turn the joystick clockwise to enter the program list as picture 9-9-1 shows.

 NOTE: If the sequence has been edited, the details will be displayed; if it is a new sequence, only STEP 00 LENGTH 0000 will be displayed (no content in the list).

- 4) Move the joystick up and down, left and right to select between MON, CAM, PRE settings. Input the numbers by using the numeric keypad.
- 5) Insert a step: move the cursor to the step that is to be inserted after, such as STEP0005. Press the NEXT key on keyboard for more than 2 seconds. This is to insert a step $\$C$ STEP0006 $\$C$ after STEP0005. The STEP0005 and the above steps remain unchanged. The original numbers of all the steps after STEP0005 will be changed by adding 1. The inserted step will be STEP0006. After the insertion, the LENGTH number will be changed by adding 1.
- 6) Delete a step: move the cursor to the step that is to be deleted. For example, to delete STEP0005, just press PREV key on keyboard for more than 2 seconds. The 4 steps before the original STEP0005 remain unchanged. The step numbers after the original STEP0005 will be changed by decreasing 1. The LENGTH number will be changed by decreasing 1.
- 7) After completing all the above settings, turn the joystick anticlockwise to return to the GROUP number selection menu.
- 8) If there is other GROUP to be edited, select the GROUP number and repeat the upper steps to complete the programming. To exit, move the joystick left.

10 Keyboard Operations

10.1 Video Switching Control

1. Manual switching

To display a video in a certain monitor.

OPERATION: Press X CAM

(X: 1-32 ,camera ID; 1-CAM1 32-CAM32)

EXAMPLE: to display CAM4 to the current monitor, the operation is:

Press 4 CAM.

2. Choose monitor

OPERATION: Press X MON

(X: 1-7, monitor ID; 1-MON1 7-MON7)

EXAMPLE: to choose MON4 as the current monitor, the operation is:

Press 4 MON.

3. Camera sequential scan

1) Set scan range


To display videos of cameras by numeric sequence with switching on the current monitor, OPERATION: Press X PREV Y NEXT.

(X- start camera ID, Y-end camera ID)

If x=y: invalid command

If x>y: scan from x, one by one to y with a reverse sequential turn, lastly go back to x and cycle.

If x<y: scan from x, one by one to y with a forward sequential turn, lastly go back to x and cycle.

 NOTE: X,Y must be set together. If user does not set the numbers, the system will adopt default sequence 1-32. The numbers may be 1-32, 1-57, 1-82, 1-96, 1-128 with different configure.

EXAMPLE: to switch No.3 camera to No.8 camera

Operation: press : 3 PREV 8 NEXT

2) Activate camera sequential scan

OPERATION: Press SHIFT X SCAN

(X-dwell time in second for each camera video, 1-255)

EXAMPLE: to run camera sequential scan on the current monitor with dwell time as 3 seconds, the operation is:

Press SHIFT 3 SCAN.

3) Stop camera sequential scan

OPERATION: press SHIFT 0 SCAN

4. Previous camera

To display the previous camera video by ID number sequence, press PREV.

5. Next camera

To display the next camera video by ID number sequence, press NEXT.

6. Salvo switch

To run the programmed salvo switch, the operations are as follows.

1) Set dwell time

OPERATION: Press SHIFT X DWELL.

(X-dwell time in second for each step, 1-255)



NOTE: The default dwell time for each step is 2 seconds. The set dwell time is effective for each salvo switch sequence group (1-16). Even if a salvo switch sequence is running, the user can set the dwell time.

2) Activate salvo switch sequence

OPERATION: Press SHIFT X PATTERN.

(X- salvo switch sequence group number, 1-16)



NOTE: The sequence group must be a programmed one, otherwise you will hear a sound of BEEP and no operation is activated.

3) Stop salvo switch sequence

OPERATION: Press SHIFT 0 PATTERN.

7. Standard sequence switch

1) Activate standard sequence switch tour: to run the tour on a certain monitor (refer to 7.5 for program setup).

OPERATION: Press X MON SHIFT Y TOUR.

(X- 1-7, monitor number; Y- 1-30, sequence group number)

EXAMPLE: to run sequence group 3 on MON2, the operation is: Press 2 MON SHIFT 3 TOUR.

The sequence group must be a programmed one.

2) Exit standard sequence switch tour

OPERATION: Press X MON SHIFT 0 TOUR

(X- 1-7, monitor number)

EXAMPLE: to exit running standard sequence tour on MON2, the operation is:

Press 2 MON SHIFT 0 TOUR.

10.2 Pan/Tilt Control

1. Direction Operation

- 1) Move the joystick on keyboard to achieve the up, down, left, right and up-left, down-left, up-right, down-right movements of the Pan/Tilt.

EXAMPLE: to achieve the UP movement of the Pan/Tilt, the operation is:

Press: X (camera ID) CAM , then move the joystick up.

2. Autopan


This is to control the Pan/Tilt to pan automatically.

- 1) Set Autopan left limit: Press SCAN 0 ENTER
OPERATION: move the joystick to reach the left limit of view, then press SCAN 0 ENTER and the left limit is set.
- 2) Set Autopan right limit: Press SCAN 1 ENTER
OPERATION: move the joystick to reach the left limit of view, then press SCAN 1 ENTER and the right limit is set.
- 3) Activate Autopan: Press X CAM Y SCAN (X-camera ID; Y-scan velocity, 1-255)
EXAMPLE: to run Autopan in CAM3 at the highest velocity, the operation is:
Press 3 CAM 255 SCAN, the autopan will run continuously.
- 4) Stop Autopan of a certain camera: Press X CAM 0 SCAN (X-camera ID)
EXAMPLE: stop autopan in CAM3, the operation is:
Press 3 CAM 0 SCAN.

3. Set and call preset

The camera can store up to 100 presets that store the pan/tilt angles and lens parameters(zoom) into the dome receiver memories. We necessary the preset can be recalled.

- 1) Set preset: to record the current pan/tilt angles and zoom as the preset parameter for later recalling purpose.
OPERATION: Press X CAM PRESET (X-camera ID), hold PRESET for more than 2 seconds to enter keyboard menu; move joystick to let the camera get the desired video, then Press X ENTER (X- preset number 1-100, this procedure can be repeated), finally Press SET.
EXAMPLE: Set two presets No. 1 & 2 in CAM1, the operation is:
Press 1 CAM PRESET, stay for more than 2 seconds to enter the keyboard menu, move the joystick to let the camera get the desired video, press 1 ENTER to store preset 1, move the joystick to let the camera get the desired video, press 2 ENTER to store preset 2, and Press SET to complete.

 Camera can store up to 100 presets. If the newly set preset is of the same number as that of a previous set one, the new preset will replace the old one.

- 2) Recall preset: The preset must be a set one, otherwise the operation is valid. When the preset is set, the lens turns to the preset position quickly.
OPERATION: Press X CAM Y PRESET (X-camera ID, Y-preset number)
EXAMPLE: To turn the CAM2 to the No. 5 preset position, the operation is:
Press 2 CAM 5 PRESET .

4. Preset tour

- 1) Set preset tour
This is to display the presets one by one with a programmed sequence. Our speed dome can have 1-4 preset tours, with 1-100 presets programmed in each tour.
OPERATION: Press TOUR and hold for more than 2 seconds to enter the keyboard menu, follow the instructions to set, finally press SET .
- 2) Activate preset tour
OPERATION: Press X CAM T DWELL Y TOUR (X-camera ID; T-dwell time in seconds; Y-preset tour number).
EXAMPLE: To activate preset tour no.4 in CAM2 with dwell time of 3 seconds for each preset, the operation is: Press 2 CAM 3 DWELL 4 TOUR.
- 3) Cancel preset tour
This is to cancel the programmed preset tour.
OPERATION: Press TOUR X DEL(X- preset tour number)
EXAMPLE: To cancel the preset tour no.3, the operation is: Press TOUR 3 DEL.

5. Pattern

- 1) Record pattern: To activate the pattern, the operation is: Press PATTERN and hold for more than 2 seconds, then press X ENTER (X-pattern number, effective to keyboard no. 1-4).
Use joystick and keyboard keys to send a series of commands to dome camera as scheduled. The commands are recorded.
Explanation: the pattern recording is only applicable to the operation of Pan/Tilt and lens commands.
To end pattern recording, the operation is:
Press PATTERN 0 ENTER.
Explanation: If the recording time exceeds the permitted range, the camera will stop recording automatically, which is effective to keyboard no. 1-4.
- 2) Pattern replay
OPERATION: Press ESC X PATTERN ESC (X-pattern number).

6. Home position

- 1) Set home position
OPERATION: Press T DWELL X PRESET
(T stands for the time interval of turning to home position after there is no operation, the effective value is 1-255 in seconds. X stands for the preset number to be set as the home position.)
- 2) Cancel home position
OPERATION: Press 0 DWELL 0 PRESET .

10.3 Lens Control

1. Iris control (OPEN CLOSE)

Open or close the iris of lens to control the light input to the camera.

OPERATION: Press X (camera ID) CAM OPEN

Or Press X (camera ID) CAM CLOSE .

EXAMPLE: To open the iris of CAM1, the operation is:

Press 1 CAM OPEN .

2. Focus (FAR NEAR)

The focus (FAR) or focus (NEAR) can be adjusted to let the video on monitor become more clear.

OPERATION: Press X (camera ID), CAM FAR

Or Press X (camera ID), CAM NEAR.

EXAMPLE: to adjust the focus of CAM2, the operation is:

Press 2 CAM FAR or Press 2 CAM NEAR.

3. Zoom (WIDE TELE)

The zoom can be adjusted to get a WIDE or TELE view.

OPERATION: Press X (camera ID), CAM WIDE

Or Press X (camera ID), CAM TELE.

EXAMPLE: to adjust the zoom of CAM3 to get a TELE view, the operation is:

Press 3 CAM TELE.

10.4 Alarm Control

1. Arm individual alarm

OPERATION: Press ALARM X NEXT (X-alarm area number)

EXAMPLE: To arm an individual alarm in alarm area no. 3, the operation is:

Press ALARM 3 NEXT .

2. Disarm individual alarm

OPERATION: Press ALARM X PREV (X-alarm area number)

EXAMPLE: To disarm an individual alarm in alarm area no. 3, the operation is:

Press ALARM 3 PREV

3. Arm all alarms

OPERATION: Press ALARM 0 NEXT

4. Disarm all alarms

OPERATION: Press ALARM 0 PREV .

5. Acknowledge alarm

OPERATION: Press ⓧ ALARM ⓧ .



NOTE: If there is an alarm event in an unarmed area, the alarm signal will not be transmitted to the matrix system, but the alarm indicator on the front panel of matrix will be lit. If switching to the video of the dome camera in the unarmed area now, user can find ARM appearing and flashing in the System Status Display area on monitor.

10.5 Alarm Event

When an alarm event appears, the system will take the following actions as per the preset program:

1. Activate alarm status:
- 1) Send the alarm video to designated monitor for display and notify the designated response keyboard in the system.
- 2) Activate relating alarm equipment.
2. When the designated monitor to display the alarm videos is

now being used to display salvo switch, standard sequence switch or camera sequential scan, and if there is an alarm event coming, the monitor will stop the switch display immediately and turn to display the alarm video;

3. When any user is setting the program, and if there is an alarm event coming, the setting will be stopped immediately.
4. The system records the area numbers, time and dates of all alarm events automatically.

10.6 Acknowledge Alarm Signal

1. Under the manual alarm response mode, use the designated response keyboard to respond to the alarm video on Designated Monitor .

OPERATION: press ALARM .

Designated Monitor is the monitor designated to display alarm videos. When the designated response keyboard is conducting video display on non-designated monitor and there is alarm signals coming, the keyboard will switch to alarm video displayed on Designated Monitor immediately. Under Auto-build Alarm Mode, the user should switch the response keyboard to the designated Mon#1 and Mon#2 separately to clear the alarm videos.

2. Acknowledge all alarm signal.
OPERATION: press 255 ALARM
3. Under the automatic alarm response mode, the system will clear the alarm automatically if no manual alarm response is conducted after 20 seconds from the appearance of the alarm event. User cannot conduct system setup before all alarm videos are cleared.

10.7 Screen Characters Display Control

The matrix can control screen display internal commands and turn on/turn off any or all the screen display through keyboard commands.

1. Turn on/ Turn off time display: 120+SET
2. Turn on/ Turn off "V_off" display: 121+SET
3. Turn on/ Turn off "ARM" display: 122+SET
4. Turn on/ Turn off camera title display: 124+SET
5. Turn on/ Turn off all the display: 125+SET

10.8 Call Macro Command

Operation: 10x+SET

X is macro number, effective value 1-8.

Example:

Operation: 102+SET

Function: Call No.2 macro command.

11 Error Messages

Error No. 01 Monitor locked

The monitor requested cannot be accessed because it is locked by a user with higher priority.

Error No. 02 Camera locked

The camera requested cannot be accessed because the user has no right to manage the camera.

Error No. 03 Camera locked

The camera requested cannot be accessed because the user has no right to control the camera.

Error No. 04 Camera under control

The camera is being controlled by another user with higher priority. Please wait.

Error No.05 Invalid camera request

The camera number entered is not registered and does not exist.

Error No.06 Camera access right transferred

The access right of the camera is transferred to a user with higher priority. Please wait.

Error No.07 Invalid monitor request

The monitor number entered from keyboard is out of range allowed by the system.

Error No.08 Invalid camera request

The camera number entered from keyboard is out of range allowed by the system.

Error No. 09 Setup stopped

There is alarm event at the moment. Setup is stopped.

Error No.10 Keyboard number not registered

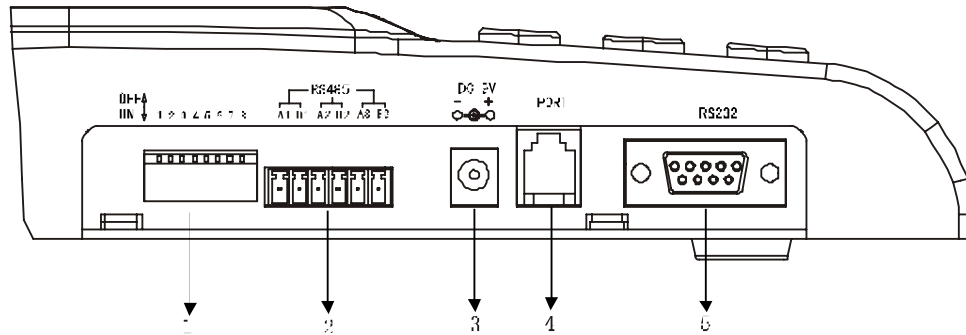
Error No.11 Incorrect password

12 APPENDIX

12.1 Keyboard Command Table for Dome

	Items	Functions	Commands	Remarks
	Select the desired dome		[C] + [CAM]	
	Select the desired monitor		[M] + [MON]	Valid only when matrix is connected to the system
	Enter the keyboard menu		Press & hold SET for 2s	
Commands Dome	Preset	Set preset	Press & hold PRESET for 2s to enter the menu	
		Recall preset	[P] + [PRESET]	P: Desired preset No.
	Home position	Set	[W] + [DWELL] + [P] + [PRESET]	W: Interval before turning to home position (seconds)
		Delete	[0] + [DWELL] + [0] + [PRESET]	
	Auto Tour	Set tour	Press & hold TOUR for 2s to enter menu	
		Start	[D] + [DWELL] + [T] + [TOUR]	D: Dwell time on the preset
		Delete tour	[TOUR] + [T] + [PREV]	T: Tour No. (1--4)
	Auto Scan	Set Left limit	[SCAN] + [L] + [ENTER]	
		Set Right limit	[SCAN] + [R] + [ENTER]	
		Start	[V] + [SCAN]	V: Scan speed
	PATTERN	Start record	[PATTERN] + [PN] + [ENTER]	PN: Pattern No.
		Stop record	[PATTERN] + [0] + [ENTER]	
		Replay	[PN] + [PATTERN]	
	Camera parameter setting		[SET] + [CM] + [SHIFT] + [PR] + [ENTER]	CM: Command number PR: Parameter value

12.2 Keyboard Connection




1 DIP Switch

Bit1--Bit5 are to set different connections. If keyboard is connected to matrix, set Bit1--Bit5 as "OFF"; otherwise set Bit1--Bit3 as "OFF" and set Bit4--Bit5 as "ON" (for one keyboard or several keyboards without connection to matrix).

Bit6--Bit8 are for termination impedance settings. User can set them as required: If Bit6 is set as "ON", termination impedance is connected to RS485 Bus (A1--B1). If Bit7 is set "ON", termination impedance is connected to RS485 Bus (A2--B2);

If Bit8 is set as "ON", termination impedance is connected to RS485 Bus (A3--B3).


 NOTE: Switch power off before the above settings.

2 RS485 connection port

3 groups of RS485 output (A1--B1, A2--B2, A3--B3); A2--B2 is for controlling dome.

3 Power port

It is for DC9V power supply connection. Refer to Picture 2 for the "+" & "-" polarity position.

 NTOE: When the matrix keyboard is connected to the matrix, power is supplied to the keyboard by the matrix. There is no need to connect power supply to the power port of the keyboard.

4 Matrix-keyboard connection port

This port is for the connection between the matrix and the keyboard.

5 RS232 port (Consol)

It is for PC connection to control equipments such as multiplexer.

12.3 Keyboard Command Table for Matrix

	Item	Functions	Commands	Remarks
Matrix Commands	Setting	Enter setting menu	[SHIFT] + [SET]	
	Sequential scan switch	Scanning scope	[X1] + [PREV] + [X2] - [NEXT]	X: Camera No
		Start switch	[SHIFT] + [X] + [SCAN]	X: Speed
		Stop switch	[SHIFT] + [0] + [SCAN]	Speed=0
	Skip	Set skip	[SHIFT] + [X] + [PREV]	X: Camera No
		Delete skip	[SHIFT] + [X] + [NEXT]	X: Camera No
	Standard sequence switch	Start switch	[SHIFT] + [X] + [TOURS]	X: Group No.
		Stop switch	[SHIFT] + [0] - [TOURS]	X=0
	Salvo sequence switch	Start switch	[SHIFT] + [X] + [PATTERN]	X: Group No.
		Stop switch	[SHIFT] + [0] + [PATTERN]	X=0
	Manual switch	Previous camera	[PREV]	
		Next camera	[NEXT]	
	Arm/Disarm alarm	Arm one area	[ALARM] + [X] - [NEXT]	X: Area No.
		Disarm one area	[ALARM] - [X] + [PREV]	X: Area No.
		Arm all areas	[ALARM] - [0] - [NEXT]	
		Disarm all areas	[ALARM] - [0] - [PREV]	
	Select monitor	Select monitor	[X] + [MON]	
	Video switch	Switch to one camera video	[X] + [CAM]	
	Alarm Acknowledgement	Alarm response	[ALARM]	For corresponding monitor and keyboard
	All Alarms Acknowledgement	Alarm response	255 + [ALARM]	
Password Change	Change password	[SHIFT] + [OPEN]		
Log out	User logs out	[SHIFT] + [CLOSE]		