

EverPlex 4CDX

User's Manual

and

Operation Instructions

Version 1 .0

Table of Content

NOTIC.	1
Safety warning.. ..	2
Introduction	3
Specification	4
Chapter I Systems Connection	5
Chapter II Functional Setting.. ..	6
1. Set	6
2. Date, time, and on screen display setting.....	7
3. Alarm records display.....	8
4. Video menu	9
5. Title menu	10
6. Sequential switch menu	11
7. Alarm setting menu	12
Chapter III Front Panel Keypads.. ..	13
1. Power key	13
2. Full screen select key.. ..	13
3. Freeze screen select key.....	14
4. Function key	14
4.1 Set	14
4.2 Buzzer	14
4.3 Alarm	15
4.4 Lock	15
5. Video key	16
5.1 Quad screen select key.....	16
5.2 Auto sequential switching key.....	16
5.3 VCR playback key	17
5.4 VCR pass through	17
5.5 VCR playback zoom key.....	18
Chapter IV Back Panel Connection.....	19
1. BNC Connectors	19
1.1 Monitor.. ..	19
1.2 VCR out.....	19
1.3 VCR in	19
1.4 Video in.....	19
1.5 Video out.....	19
2. Power	20
3. Alarm Connectors (DB-15).....	20
3.1 Alarm out	21
3.1.1 Normally open connection.....	21
3.1.2 Normally closed connection.....	21
3.2 Alarm in and alarm reset.....	22
3.2.1 Alarm in	22
3.2.2 Alarm reset	23
4. Time Lapse Recording.....	23
5. RS232 Connector	24
5.1 The pin assignment of the 9 pin D-SUB connector.. ..	24
5.2 Transmission setting.....	25
5.3 Remote control protocol.....	25
5.4 Alarm message sent via RS232	26
6. Terminator	26

Notice

This manual is presented to the users of EverPlex 4CDX by EverFocus Electronics Corp. With years of engineering researches, EverFocus has spared no effort to provide the high quality products to the worldwide users. For the policy of continual product improvement, EverFocus reserves the right to make changes to the product specifications and documentation without notice. All the components of the products, including accessories, components, and outlook, are based on the agreements of each deals to satisfy all kinds of users. Meanwhile, please be advised that every step of operation must follow the instruction of this manual to keep EverPlex 4CDX working under the best condition. Please notice that EverFocus will not be charged any claims or renewing cases resulted from inappropriate operation.

Safety Warning

1. To prevent fire or shock hazard, do not expose this equipment to the environment of high humidity and dust. Do not use it in an unprotected outdoor installation or any area classified as a wet area.
2. Installation environment: The temperature should be kept between 0°C ~ +50°C
3. For safety sake, do not disseminate the unit or put it on an unstable base.
4. Ventilation: Openings in the enclosure are provided for ventilation and to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered. This unit should not be placed in a built-in installation unless proper ventilation is provided.
5. Cleanse: Unplug the unit from the outlet before cleansing. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth to clean it.
6. Overload: Do not overload outlets and extension cords as this may result in a risk of fire or electric shock.
7. Power-cord Protection: Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
8. Object and Liquid Entry: Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the unit.
9. Service: Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage of other hazards. Refer all servicing to qualified service personnel.

10.



In order to prevent the electric shock, please notice the cautious sign and do not directly *contact with* the connectors.

Introduction

EverPlex4CDX, a real time color Duplex Multiplexer, is the best choice for 4 cameras multiple monitoring and recording. The video inputs and outputs are digitally processed and stored as consecutive fields on video tape. The multiplexer allows simultaneously viewing VCR playback, 4 camera inputs in quad, and alarm channel display via 3 monitor outputs.

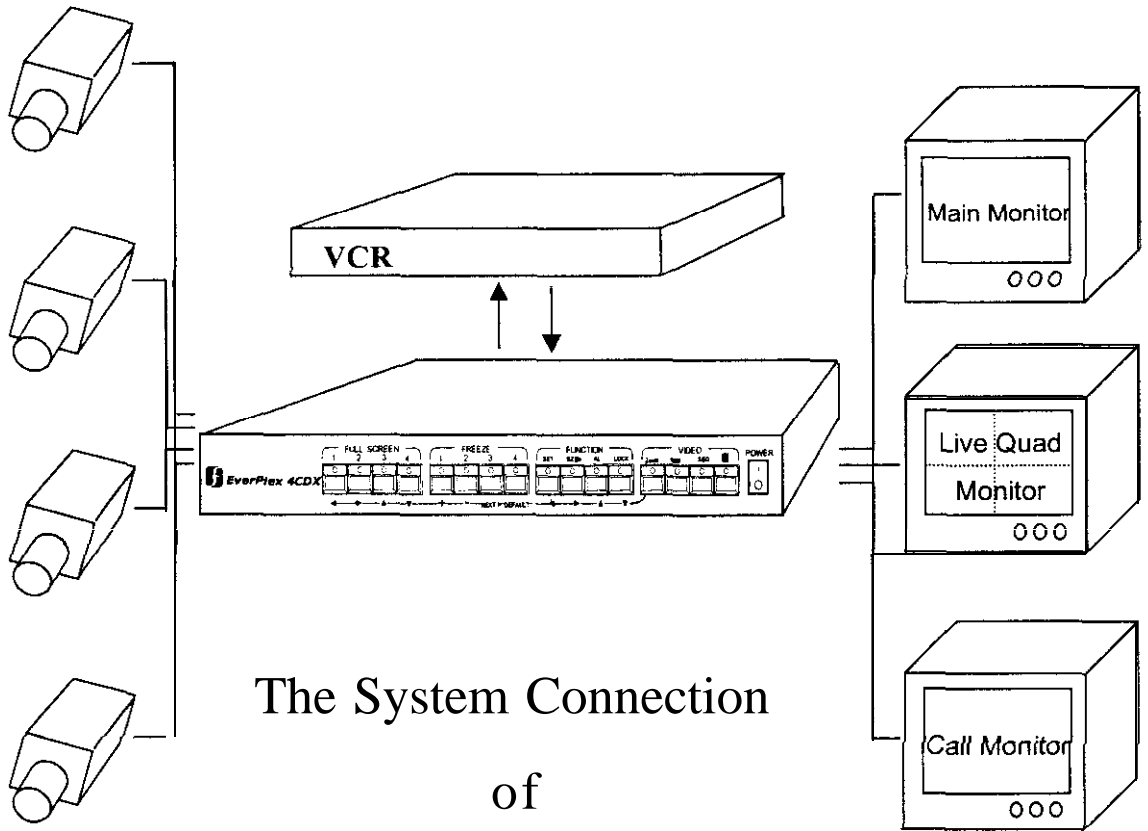
Main Features:

- 0 Full capability duplex multiplexer with simultaneously multiple monitoring.
- 0 Connect up to 4 cameras with loop through.
- 0 High Resolution 720 x 480 (NTSC), 720 x 576 (PAL).
- 0 Superior quality display and 16 million true colors.
- 0 Alarm and video loss detection.
- Independent brightness, contrast, color and tint adjustments for each channel
- Programmable auto sequential switching function and adjustable dwelling time (from 1 to 99 seconds).
- Built-in timer and title generator.
- 0 Alarm input with built-in buzzer.
- Alarm records display contains up to 5 records.
- Selectable time-lapse recording mode.
- 0 VCR playback in Quad or Full screen image.
- VCR playback zoom in full screen for detail images.
- VCR pass through.
- 0 RS232 remote control.
- 0 Rack mount 1U size.
- 0 User-friendly front panel design.

Specification

Video format:	NTSC or PAL
Video input:	4 cameras inputs, 1V p-p/75 ohm, with loop through 1 VCR input, 1V p-p/75 ohm
Video output:	4 video outputs, 1V p-p/75 ohm
Monitor output:	3 monitor outputs (1 V p-p/75 ohm)
Recording output:	Multiplexed video output, 1V p-p/75 ohm
Refresh rate:	60 fields/sec. (NTSC), 50 fields/sec. (PAL)
Resolution:	720 x 480 (NTSC), 720 x 576 (PAL)
VCR playback:	Yes
Playback zoom:	Yes
Video freeze:	Yes
Video loss detection:	Yes
Time-Lapse record:	Selectable time-lapse recording mode
Alarm input:	4 alarm inputs and 1 alarm reset input
Alarm output:	1 Normally Open, 1 Normally Closed relay output
Buzzer:	Yes
Title:	6 characters title generator for each camera input
Timer:	Built-in real time clock
Setup:	On screen setup
Switching:	Programmable auto sequential switch and adjustable dwelling time (1-99 sec.)
Key lock:	Yes
Remote control:	D-Sub 9 pins / RS232
Power source:	AC 95 ~ 260V 50/60 Hz
Power consumption:	17W max.
Dimension:	438 x 262 x 44 mm
Weight:	5 Kg.

Chapter I Systems Connection



The System Connection
of
EverPlex 4CDX

1. Set



Press the SET key to set time/date, title on/off, picture, camera titles, switching sequence, switching dwell time, alarm sensor type, alarm hold time, and display the alarm/video loss records.

There are 6 pages in the setting mode :

- Page 1: Date, time setting and on screen display on/off setting
- Page 2: Alarm records display
- Page 3: Set brightness, contrast, color, and tint for camera 1-4
- Page 4: Set channel title for camera 1-4
- Page 5: Set auto sequential switching on/off and switching dwell time
- Page 6: Set alarm sensor type, alarm hold time, and buzzer on/off

Keys for setting are as below:



Press Next P. to select the following pages for setting.



Press Default key to reset the setting.

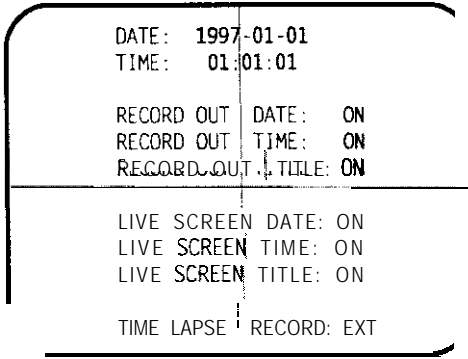


Press the +/- keys to set the value.



Press the cursor key to select the item for setting.

2. Date, time, and on screen display setting



DATE - data format is CCW-MM-DD, where
 CC : Century code from 19 to 20
 MM : Month data from 01 to 12

YY: Year data from 00 to 99
 DD: Day data from 01 to 31

TIME - data format is HH:MM:SS, where
 HH : Hour data from 00 to 23
 SS : Second data from 00 to 59

MM: Minute data from 00 to 59

On Screen Display Setting

RECORD OUT DATE, TIME, TITLE : ON/OFF

'ON' : The date, time, and title will be recorded in VCR.

'OFF' : The date, time, and title will not be recorded in VCR.

LIVE SCREEN DATE, TIME, TITLE : ON/OFF

'ON' :Date, time, and title will show on the monitor display.

'OFF' :Date, time, and title will not show on the monitor display.

TIME-LAPSE RECORD

'12HR,24HR,...960HR':

The recording mode must be set before recording the video inputs. The recording hours can be set from 12 hours, 24hours,..to 960 hours. After the mode is set, please kindly test the recording function to ensure all the video inputs of the required channel are recorded without any loss.

'EXT': When using the step signal cable, the system will automatically detect the clock from the external VCR. If the step signal cable can not be detected, the system will keep the status of continuous recording.

Keys for setting are as below:



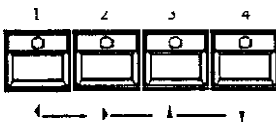
NEXT P.

Press Next P. to select next page for alarm records display.



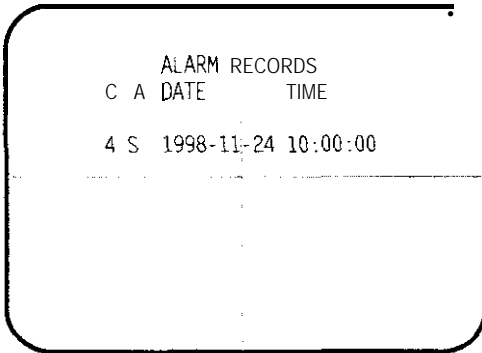
+ - -

Press the +/- keys to correct setting value



Press the cursor key to select the items on the same page for setting.

3. Alarm records display



The Alarm Record format is : (C A DATE TIME)

C : The channel number from 1 to 4 which receives the alarm inputs.

A : Indicate where the alarm happened: 'S' 'alarm from sensor input
'V' alarm from video loss detection

DATE, **TIME** Indicate the date and time when the alarm happens

The memory of the Alarm Records Display contains up to the latest 5 records

Keys for setting are as below:



NEXT P.

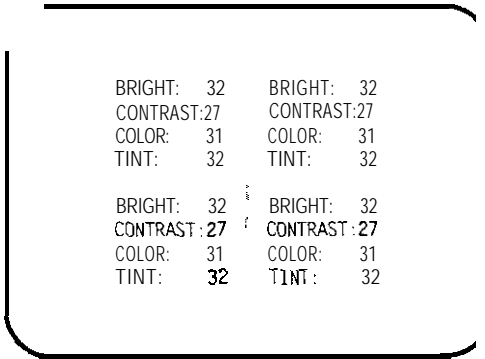
Press Next P. key to the setting page of video menu.



DEFAULT

To clear the alarm records, please press Default key.
It will clear all the records at one time.

4. Video menu



The numbers for setting the value of brightness, contrast, color and tint for each channel are: 00-63

Keys for setting are as below:



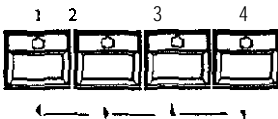
NEXT P.

Press Next P. to the next page of title menu.



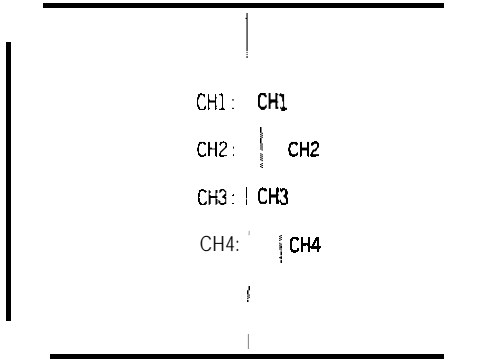
+ -

Press the +/- keys to set the value.



Press the cursor key to select the items on the same page for setting.

5. Title menu



The characters for setting the title of each channel are:

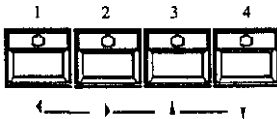
“A~Z”, “a~z”, “Space”, “.”, “-”, “:”, “0~9”

Keys for setting are as below:



NEXT P.

Press Next P. to the sequential switch menu.



Press the cursor key to select the characters and items on the same page for setting.

6. Sequential switch menu

SEQUENTIAL SWITCH MENU	
CH1:	ON
CH2:	ON
CH3:	ON
CH4:	ON
QUAD:	ON
SWITCH TIME :	03 SEC
REFRESH MODE :	FIELD

CH1 - CH4 : ON/OFF

'ON' : The camera is set in the corresponding channel in the auto sequential switching mode.

'OFF' : The camera is not set in the corresponding channel in the auto sequential switching mode.

To cancel the auto sequential screen display, you can either Set CH1 CH4 'OFF' at the **same time** or press any one of the full screen camera select key.

QUAD: ON/OFF

'ON' : The quad screen display is under the auto sequential switching mode.

'OFF' : The quad screen display is not under the auto sequential switching mode.

SWITCH TIME: The auto sequential dwelling time for the video inputs of each camera can be set from 0-99 seconds. The required switching time must be set before the sequential switch is used.

REFRESH MODE: FIELD/FRAME

'FIELD' : The speed of capturing the video inputs is 60 fields per second.

'FRAME': The speed of capturing the video inputs is 30 **frame per second**.

Keys for setting are as below:

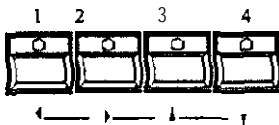


NEXT P.

Press Next P. to the alarm setting menu.

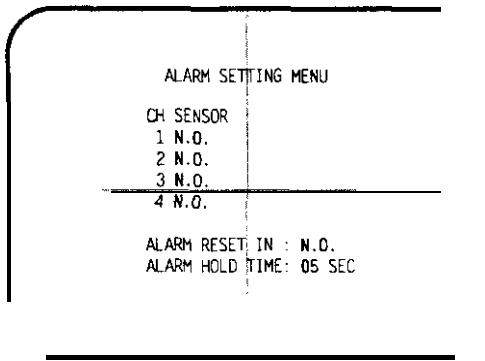


Press the +/- keys to set switch time, refresh mode, and sequential switching mode for each camera.



Press the cursor key to select the item on the same *page for setting*.

7. Alarm setting menu



There **are** two types of alarm sensor inputs, one is normally open and the other is normally closed.

CH1 - CH4 : N.O./ N.C.

'N.O.': The normal situation of sensor inputs *is set* normally opened. If the inputs **are** closed, the **system will start** the alarm.

'N.C. : The normal situation of sensor inputs is set normally closed. If the inputs are opened, the system will **start** the alarm. Closed means to short the **alarm** signal line to the **ground**.

ALARM RESET IN : To set alarm reset input type as 'N.O.' or 'N.C.'

ALARM HOLD TIME : Indicate the **alarm** time duration (0~99 seconds), the system will display the alarming **channel** for the programmed time in full screen of alarming channel on the main monitor **and** call monitor.

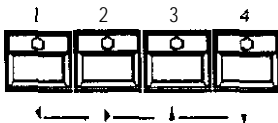
Keys for setting are as below:



Press Next P. to go back to the first setting page.

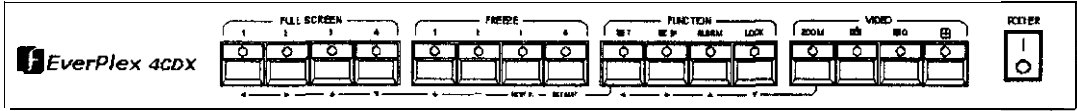


Press the +/- keys to set the value



Press the full screen cursor key to select the items on the same page for setting.

Chapter III Front Panel Keypads



1. Power key

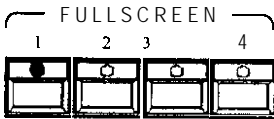


- ON: Turn on the machine.
- OFF: Turn off the machine.

2. Full screen select key



Press any key of FULL SCREEN, the picture of the corresponding channel will fill the whole screen of the monitor. These function keys are available in Live display and VCR playback mode.

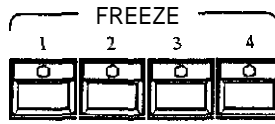


LED ON: Press any one of the camera select key, the picture of the corresponding channel fill the whole screen on monitor display.

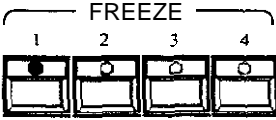


LED OFF: When all the LEDs of the full screen are off, there is a quad image on the monitor display.

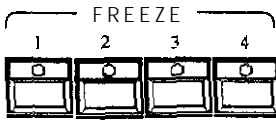
3. Freeze' screen select key



In live quad display mode, press the individual freeze key to freeze the required channel. The title of the frozen channel will blink. Press the same key will make the pictures live again. In VCR playback mode, the Freeze function can be further practiced in both quad and full screen display. Press any key of Freeze, the pictures on the screen will all be frozen. Press the same key again, the system will go back to the normal VCR playback.



LED ON: The picture of the corresponding channel is frozen.



LED OFF: The picture of the corresponding channel is not frozen.

4. Function key



4.1 SET



Press SET key to program the function in the setting menu



LED ON: The system is in the setting mode



LED OFF: The system is not in the setting mode.

4.2 BUZZER



Press the BZ key to turn on/off the buzzer. The buzzing time is as the same as alarm hold time.



LED ON: It will buzz when alarm happens.



LED OFF: It will not buzz when alarm happens

ALARM



4.3 ALARM

Press **ALARM** key, the machine will start the **alarm** system and to send the alarm signals.

ALARM



LED ON: The **alarm** systems is started.

ALARM



LED OFF: The alarm systems is not started,

LOCK



4.4 LOCK

Press and hold the **LOCK** key **over** 3 seconds to lock the function keys of the front **panel**. Press **and** hold the **LOCK** key again **over** 3 seconds will unlock the function keys of the front panel.

LOCK



LED ON: Except **LOCK** key, **all** the function keys **of the front panel** are locked to avoid unexpected **contact** with the panel.

LOCK



LED OFF: No keys is locked

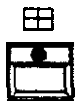
5. Video key



5.1 Quad screen select key



Either in live display or in VCR playback mode, it is optional to set the video inputs as **quad** or full screen. Press the Quad screen select key, the images of the **four** cameras will be displayed in a quad page.



LED ON: The quad image is displayed on the screen.



LED OFF: The full screen image is displayed on the main monitor.

5.2 Auto sequential switching key



Press SEQ key the systems will enter the auto sequential switching mode, the sequence of switching is optional and programmable in setting menu. The camera inputs will be sequentially displayed in **full** screen and live quad on the main monitor according to the setting. Press the SEQ key again, it will exit the auto sequential mode and stay at the **last** picture displayed on the screen. **Or** press full screen camera selecting key (1,2,3,4), it will **also** exit the auto sequential mode and stay at the full screen of the corresponding **channel** you select.



LED ON: Auto sequential switching mode is on



LED OFF: Auto sequential switching mode is off.

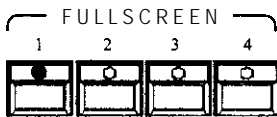
5.3 VCR playback key



Press the VCR playback key will enter the playback mode and display the recorded video inputs in quad page. Press the **full** screen camera **corespondent** key will display the full screen of the chosen channel. Press the quad corespondent key, the systems will turn to the quad page in VCR playback mode. In order to exit the VCR playback mode, press the VCR playback key again will go back to the live display.



LED ON: The system is displaying the recorded video from VCR.



LED ON: The system is displaying the recorded video of the corresponding channel from VCR in **full** page.



LED OFF: The system is not displaying the recorded video in VCR

5.4 VCR pass through



Under the VCR playback mode, press the sequential switch key, “**SEQ**”. The VCR pass through mode will be started and can be used to directly view the VCR’s output for adjusting tracking or verifying proper VCR connections to the **EverPlex 4CDX**. Press the sequential switch key again, the systems will go back to the VCR playback mode.



LED ON: The mode of VCR pass through is started.



LED OFF: The system is in normal VCR playback mode

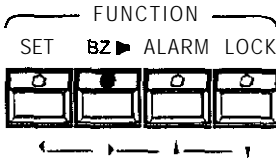
5.5 VCR playback zoom key



The VCR playback **zoom** key is a **breakthrough** function which provides users to **zoom** in and show the further detail image on the screen while viewing video playback. Choose the required **full** page in the VCR playback mode, then press the VCR **zoom** key, it will focus on the center of the screen to 4 times enlarged the original image. According to the monitor display, press the function cursor key to *focus on any* required image. Finally, press the VCR **zoom** key again will go back to the full screen display in VCR playback mode.



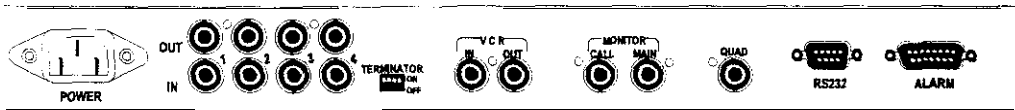
LED ON: The VCR playback **zoom** function is practicing.



Press the function cursor key to move the *zoom area to the* required image.



LED OFF: The VCR playback **zoom** function is not practicing.



1. BNC Connectors

1.1 Monitor

There are three monitor outputs: “Quad”, “Call Monitor”, and “Main Monitor”. Each of them can be connected with the other devices of monitors:

Main Monitor: This connector is used for Main Monitor display. There will be full page, quad page, or playback video images displayed on the main monitor.

Call Monitor: This connector is used for Call Monitor. There will be alarming channel displayed in full screen on the call monitor. If there are over two channels deliver the alarm or video loss signals in the same time, all of the alarming channels will be displayed in full pages in turns on the screen at the call monitor. The time for displaying the alarming channel can be programmed in the setting menu.

Quad: This connector is used for the Quad Monitor display. Only live quad will be displayed on the quad monitor.

1.2 VCR Out

Connect this output port to the VCR input. The multiplexed video outputs will be stored as consecutive fields in video tape.

1.3 VCR In

Connect this input port to the VCR output.

1.4 Video In

The connectors of video inputs enable to receive the signals from each cameras through the 75 ohm coaxial cables.

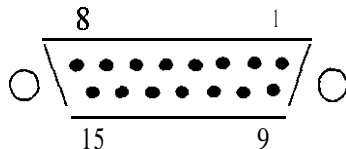
1.5 Video Out

Connect the other devices with these connectors which are used to loop through the camera outputs to the other devices.

2. Power

This device can be used under AC 90 ~ 260V (50 / 60 Hz) power source.

3. Alarm Connectors (DB-15)

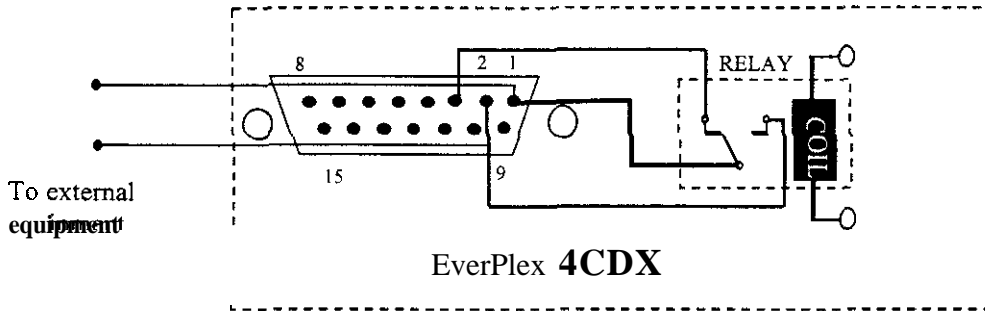


PIN #	NAME	PIN #	NAME
1	Relay Common contact	9	STEP signal in from VCR
2	Relay Normally Open contact	10	NC
3	Relay Normally Closed contact	11	Alarm Reset
4	GROUND	12	NC
5	ALARM IN 4	13	NC
6	ALARM IN 3	14	NC
7	ALARM IN 2	15	NC
8	ALARM IN 1		

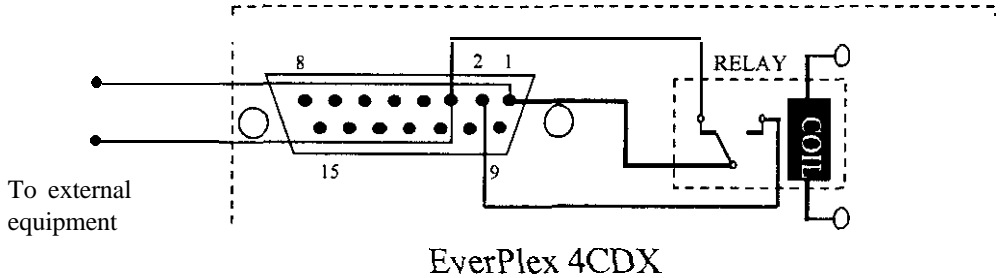
3.1 Alarm out.

There are two ways to do the alarm out connection:

3.1.1 Normally open connection (use pin # 1 and # 2)

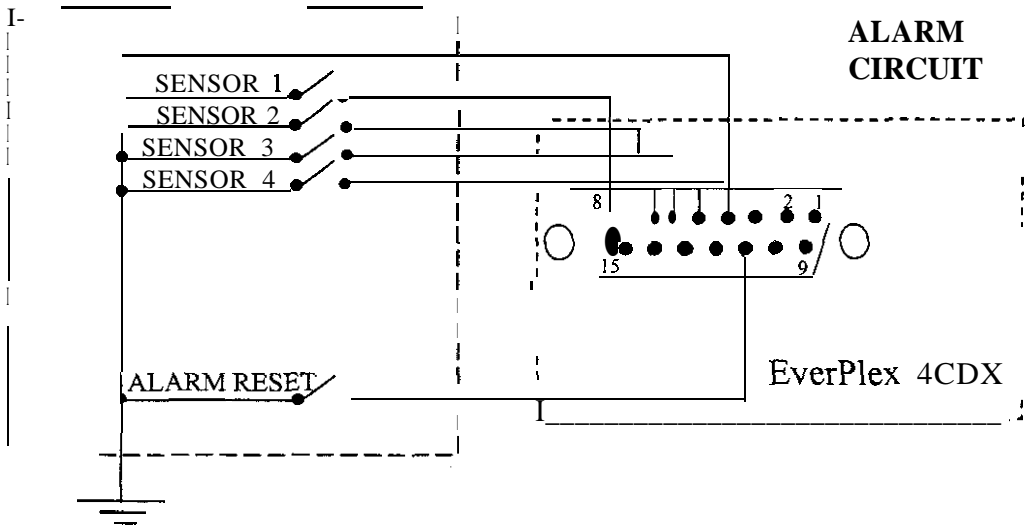


3.1.2 Normally Closed Connection (use pin # 1 and # 3)



3.2 Alarm in and alarm reset

There are 4 alarm sensors in for 4 channels and 1 alarm reset in, all these 5 alarm inputs can be set to Normally Open or Normally Closed by user.



3.2.1 Alarm in

There are four alarm inputs. Please connect the alarm input in the same sequence as the cameras input BNC.

When any alarm signal comes in, the EverPlex 4CDX will do the following:

1. switch to the full screen display of the alarm channel and show in call monitor.
2. blink the channel ID with alarm message.
3. turn on the buzzer if the buzzer setting is on.

When mere alarms come up in the alarming status, the main monitor will switch to quad display to show all the channels where alarms happened.

The **ALARM in** can be selected as normally open input or normally closed input:

Normally Open : If the alarm input is selected as Normally Open input, then the (N.O.) input is opened normally, and shorted to the ground means an alarm happens.

Normally Close : If the alarm input is selected as Normally Close input, then the (N.C.) input is shored to the ground normally, and opened input means an alarm happens.

3.2.2 Alarm reset

External **alarm** reset signal used to reset the **alarm** and turn the buzzer off. If it is selected as Normally Closed input, then the input is shorted to the ground normally. It will be opened when an alarm reset signal comes in. If it is selected as Normally Open input, then the input is opened normally. It will be shorted to the ground when an alarm reset signal comes in.

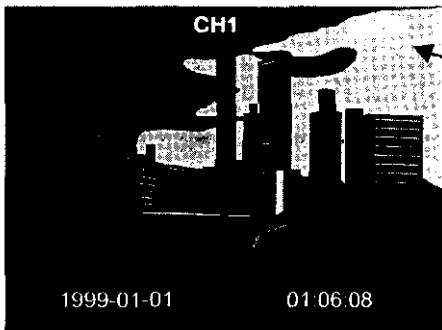
4. Time Lapse Recording

1. When the time-lapse recording mode is set from 12 hours to 960 hours:

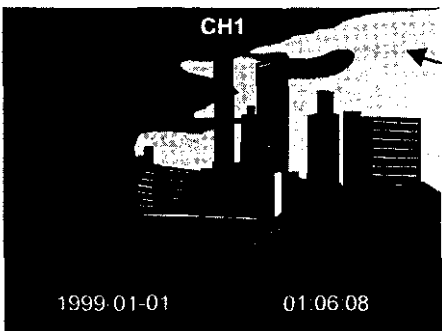
Please be advised that the recording mode of EverPlex 4CDX must be **programmed** according to your VCR recording mode. If the recording modes from both devices **are** different, the system will only rely on the setting of EverPlex 4CDX. For example, if the recording mode of EverPlex 4CDX is set as 12 hours, but VCR is set as 24 hours, the systems will record the video inputs under the recording mode of 12 hours. In the other hands, the appropriate operation should be set as 24 hours for the recording mode of EverPlex 4CDX as the same as the one of your VCR.

2. When the time-lapse recording mode is set as "EXT" in the setting menu:

EverPlex 4CDX will automatically detect the step signal from the VCR. If there is no step signal detected, the systems will go back to the status of continuous recording.



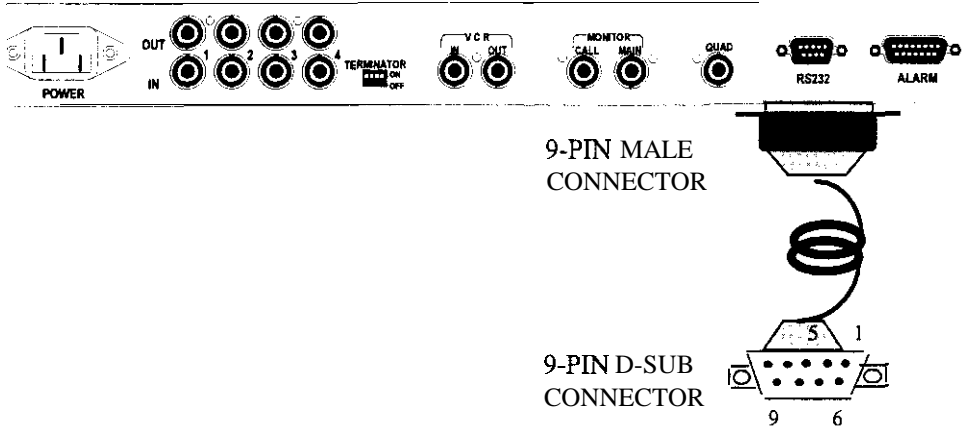
The message of recording mode is showed upon the programmed time-lapse recording mode of EverPlex 4CDX.



When the systems is in the status of continuous recording, there is no message of recording mode.

5. RS232 Connection

EverPlex 4CDX may be controlled by a computer or a terminal via the standard 9 pin D-sub/RS232 connector, which is connected to the alarm I/O by a cable with 9 pin and 9 pin connectors. EverPlex 4CDX will send the alarm message to the host via RS232 when any alarm occurs.



5.1 The pin assignment of the 9 pin D-SUB connector



EverPlex 4CDX			HOST	
PIN #	NAME		PIN #	NAME
1	NOT CONNECTED	→	1	NOT CONNECTED
2	TXD	←	2	RXD
3	RXD		3	TXD
4	NOT CONNECTED		4	DTR
5	GROUND	—	5	GROUND
6	NOT CONNECTED		6	DSR
7	NOT CONNECTED		7	RTS
8	NOT CONNECTED		8	CTS
9	NOT CONNECTED		9	NOT CONNECTED

5.2 Transmission setting

The transmission setting in EverPlex 4CDX is 9600 baud rate, 8 data bits, 1 start bit, 1 stop bit and no parity.

5.3 Remote control protocol

A computer or a terminal can be used to control the EverPlex 4CDX by sending three character ASCII command through RS232 connector, these ASCII commands are started with 'K' or 'k'. There are 16 ASCII commands mapped to the 16 keypads in the front panel and 1 additional commands to reset the EverPlex 4CDX to the quad display state. The 17 ASCII commands are:

Color Quad Remote Control Command Table		
ASCII CODE	FUNCTION	Keypad in front panel
K01	Full Screen 1	1
K02	Full Screen 2	2
K03	Full Screen 3	3
K04	Full Screen 4	4
K05	Freeze Screen 1	1
K06	Freeze Screen 2	2
K07	Freeze Screen 3	3
K08	Freeze Screen 4	4
K09	SET	SET
K10	Buzzer	BZ ▶
K11	Alarm	ALARM
K12	Lock	LOCK
K13	Zoom	ZOOM
K14	VCR Playback	
K15	Sequential Switching	SEQ
K16	Quad Screen	
K00	Rest to Quad Display	None

5.4 Alarm message sent via RS232

EverPlex 4CDX will send out alarm message through RS232 when any alarm occurs, the alarm message format are three ASCII characters followed carriage return and line feed, they are:

first character is the leading code , '!''

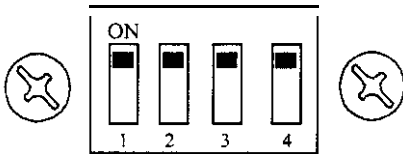
second character is the alarm type, 'S' indicates a sensor alarm, 'V' indicates a video loss

third character is the channel number having the **alarm**, '1' ~ '4'

fourth byte is the carriage return code, ODH

fifth byte is the line feed code, OAH

6. Terminator



Each camera should be terminated by 75 Ohms. This termination is normally provided by having all switches of 1-4 on. If cameras are looped through to other equipment which provides termination, then the switch sections of the corresponding inputs should be turned off.

Terminator	Camera Input	OFF	ON
1	1	Not Terminated	75 Ohm Termination
2	2	Not Terminated	75 Ohm Termination
3	3	Not Terminated	75 Ohm Termination
4	4	Not Terminated	75 Ohm Termination