

OPERATION MANUAL
PORTABLE
VIDEO CONTROLLER
Model: PVC



COPYRIGHT 2012 KARAS TECHNICAL SERVICES
ALL RIGHTS RESERVED
PUBLICATION NUMBER KTS-12012
FIRST EDITION



KARAS TECHNICAL SERVICES

P.O. Box 695, Aptos, CA 95001 (831) 685-0816 Fax (831) 685-0817
web site: www.karastech.com

WARRANTY/DISCLAIMER

The products described in this manual are warranted to be free from defect in material and workmanship for a period of two years from the date of shipment. Within the two year warranty period we shall replace or repair such products which are returned to us with shipping charges prepaid and which are determined by us to be defective. This warranty does not apply to any product which has been subjected to misuse, negligence or accident; or misapplied; or modified; or improperly installed.

The foregoing provisions are our sole obligation and exclude all other warranties or remedies, expressed or implied, including warranties of merchantability and fitness for a particular purpose, whether or not purposes or specifications are described herein.

We further disclaim any responsibility whatever to the customer or to any person for injury to person, or damage to or loss of property or value during any use of our products. Under no circumstances shall the company be liable for any incidental, consequential or special damages or losses or expenses in connection with the use of, or inability of use of our product for any purpose whatsoever.

Warning: In installation and use of these products, comply with the National Electrical Code or any other applicable local safety codes. During installation, turn off power and take all other necessary precautions to prevent injury, property loss and equipment damage. Do not apply power until all wiring is completed.

Product Changes: We reserve the right to discontinue a particular product or make technical design changes at any time without notice.

SENTINEL PORTABLE VIDEO CONTROLLER MANUAL

TABLE OF CONTENTS

DESCRIPTION	1
OPERATION	1
Runtime	1
CONTROLS	1
INDICATORS	2
Portable Video Controller (PVC) Layout Diagram	2
Set Up Connection Symbols	2
SET UP	3
Video Set Up Diagram	3
Operate Diagram	4
Play Back Diagram	4
DVR PROGRAMMING / SET UP	5
WIRELESS RECEIVER	6
Programming Receiver Memory	6
Checking Memory	6
System Testing	6
Erasing Memory	6
WIRELESS SENSOR TRANSMITTERS	6
SPECIFICATIONS	7
Portable Video Controller (PVC)	7
Digital Video Recorder (DVR)	7
Video Camera	7
Video Monitor	7
Sensors	7

Due to differences in customers requirements there may be discrepancies between your Sentinel and this manual. If you have any questions regarding the operation of the Sentinel Portable Radio Alarms, please contact Karas Technical Customer Service at 831 685-0816 or e-mail customerservice@karastech.com

TYPICAL PORTABLE VIDEO RECORDER SYSTEM COMPONENTS



Portable Video Controller (PVC)



Monitor



Passive Infrared Sensor



Wall Wart



Illuminator



Video Camera



Cable Adaptors



Wall Wart
Extension Cable
Portable Video Controller (PVC)
Cable Adaptors

Monitor
Illuminator
Passive Infrared Sensor
Antenna

Portable Video Controller as part of the Video Kit shown in Carrying Case

DESCRIPTION:

The Portable Video Controller (PVC) is a small, compact, self-contained video recording system controller in a water resistant case. It's designed to be used in portable and remote installations indoors or out. Ideally suit for stakeouts and surveillance applications. It is light weight, energy efficient, easy to set up and install. It uses a SD memory storage device to store the recorded information and can be read directly from the video recorder or from a computer with an SD card slot. It can be operated with internal batteries and/or external power sources. It can be used with a variety of video cameras and illuminators. With a built in timer, it can be set to record for up to 60 minutes before turning itself off. It is activated by either a wireless sensor such as a magnetic, seismic, passive infrared or any of the wireless Sentinel Portable Alarm sensors. It also has the ability to be activated from a hard wired switch contact. The PVC maximizes its run time by turning off all unnecessary circuits while in the receive mode.

OPERATION:

The video controller is used in conjunction with a compatible video camera. Most modern compact digital video cameras will work with the system. The selected wireless sensors need to be programmed to the wireless receiver. Once they are programmed and triggered they will activate the PVC whenever it is turned on, with either internal or external power source.

The camera and optional illuminator power connections are connected to the timer controlled 12 volt accessory power source. The camera video signal line is connected to the Video input connection. An audio source may also be connected to the audio input connection of the PVC to be recorded on the DVR.

Run Time:

When the PVC is turned on and the wireless receiver is activated by a wireless sensor transmitter signal or the external trigger source, it turns on the Digital Video Recorder, (DVR), and the 12 volt accessory lead which activates the camera and other accessories. The built in timer allows the user to set the DVR run time from 1 to 60 minutes. When the run time elapses, the PVC goes back into the receive mode and waits for another wireless signal to activate the DVR. If the PVC is retriggered while it is already running it will reset the run timer and extend the recording time as set on the Run Time Control.

When the controller is activated in the internal power source mode, the controller uses 8 AA batteries to power the video controller and the camera and any other external device requiring 12 volts. The internal batteries will operate the wireless receiver for 4 days on AA alkaline batteries. The record time will be increased with NiMH batteries by almost double. Increased record time will reduce the time the receiver will operate. Recording for 60 minutes with alkaline batteries will reduce the useable wireless receiver time by about half of what it would be if it didn't record at all. In the external power mode, the internal circuitry operates from a 10 to 15 DC power source such as a AC Adaptor or a 12 volt battery. The length of run time is longer with a larger battery. A 7Ahr sealed lead acid battery, well charged at room temperature, will typically operate the system for 12 to 15 days with minimal recording time.

CONTROLS:

The Video controller has four control functions, two momentary switch buttons, one three position slide switch and a run time control potentiometer.

The PROGRAM button is used to program the wireless sensors to the built-in wireless receiver. The MANUAL START button is used to manually activate the controller during setup.

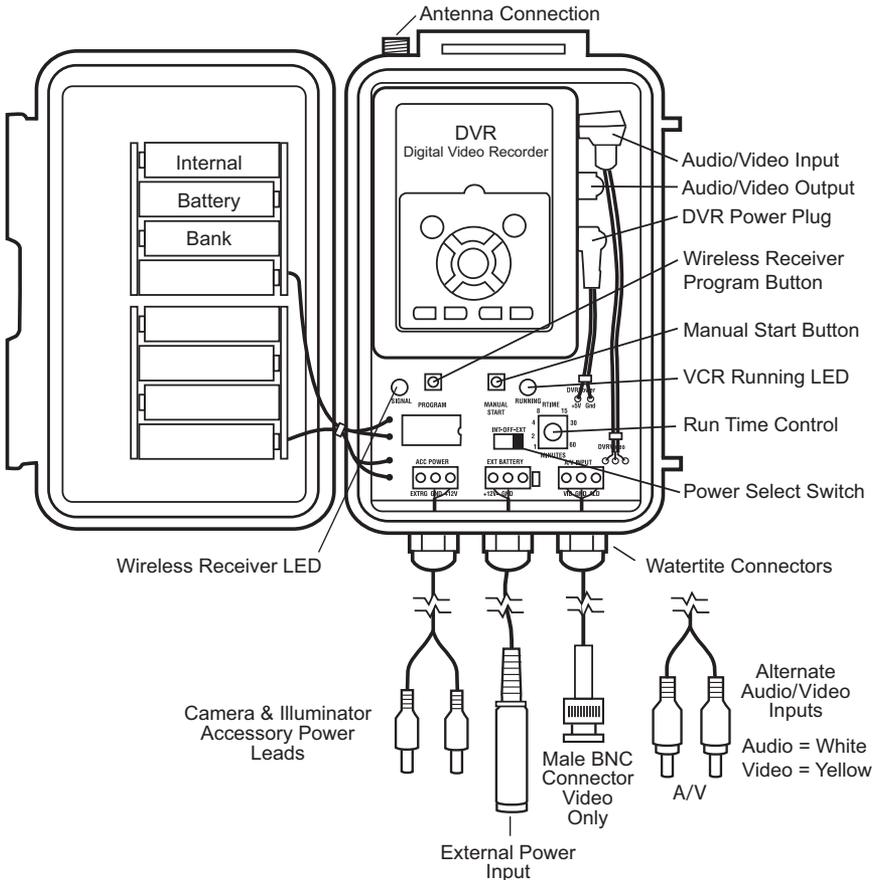
The slide switch(INT-OFF-EXT) is used to turn on the video controller from either of two different sources of power. In the INT position, the video controller is getting its power from the internal batteries. In the EXT position the video controller is getting its power from an external source, such as a larger battery or AC Adaptor power source. The center position is the OFF position.

The Run Time (RTIME) potentiometer determines the amount of time the DVR is powered on. It can be set for 1 to 60 minutes or in setup, it can be set to run in seconds, up to 60 seconds, by removing the Secs jumper.

INDICATORS:

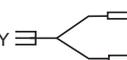
There are two LED indicators on the video control board. One is the SIGNAL indicator from the wireless receiver. It also is used to indicate program status while programming wireless sensors to the receiver. How these features are used is described in the wireless receiver programming. The RUNNING LED indicates when the video controller is powering up the DVR and accessories.

PORTABLE VIDEO CONTROLLER (PVC) LAYOUT DIAGRAM

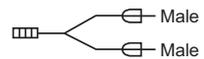


SET UP CONNECTION SYMBOLS:

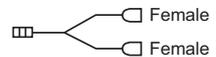
- CON 1  Male RCA to Male RCA
- CON 2  Male RCA to Female BNC
- CON 3  Female BNC to Female BNC
- CON 4  Female RCA to Male BNC
- CON 5  Female RCA to Female RCA
- CON 6  Male RCA to Male BNC

- CON 10  BNC T
- POWER  Female
- POWER  Male
- POWER Y 

RCA/A/V Cable for DVR
3.5 mm 3 conductor



RCA/A/V Cable for Monitor
3.5 mm 2 conductor



SET UP:

Parameter Set Up. Before going into the field to set up the PVC system it is wise to check DVR settings and adjust if necessary. Use the Playback Set Up with the AC Adapter for power to check DVR set up parameters. Select appropriate input on monitor and turn on monitor power.

Use the External Power Source, Battery or AC Adaptor to power the monitor and camera during set up while aligning the camera. If necessary, you may use the internal PVC batteries for set up but you will reduce the operate record time by draining some of the power from the batteries. When camera set up is complete disconnect monitor and connect illuminator if used. Disconnect external battery from monitor/camera set up and reconnect to the External Power Input if the AC Adapter is not used. You may use any 12 VDC power source during camera set-up. Press manual start button to power up PVC.

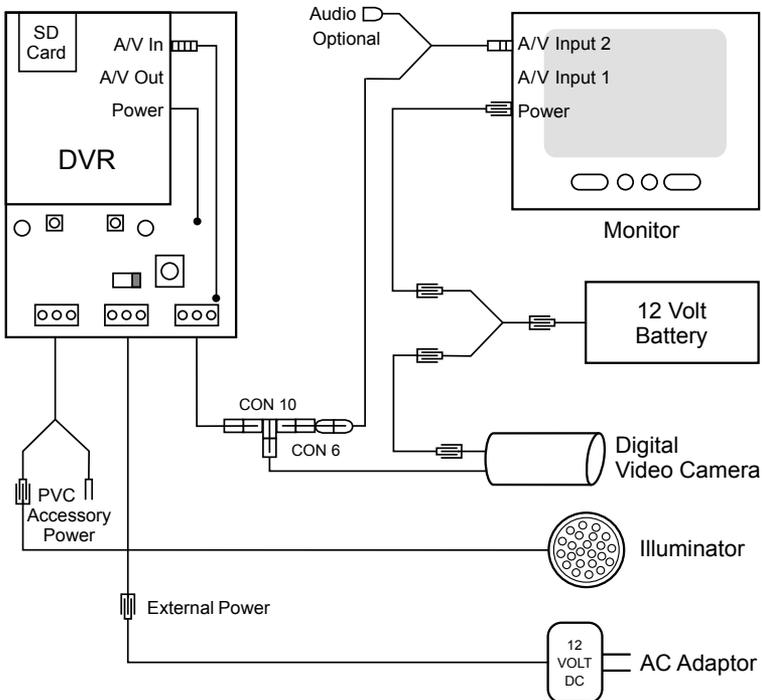
The DVR only records when it senses a video signal. It saves video to the SD card when the video signal stops as the accessory power turns off. If the DVR is shut off before or at the same time as the camera the video data will not be recorded.

▲ NOTE: During operate be sure to power Video Camera with PVC accessory power or the DVR will not record properly.

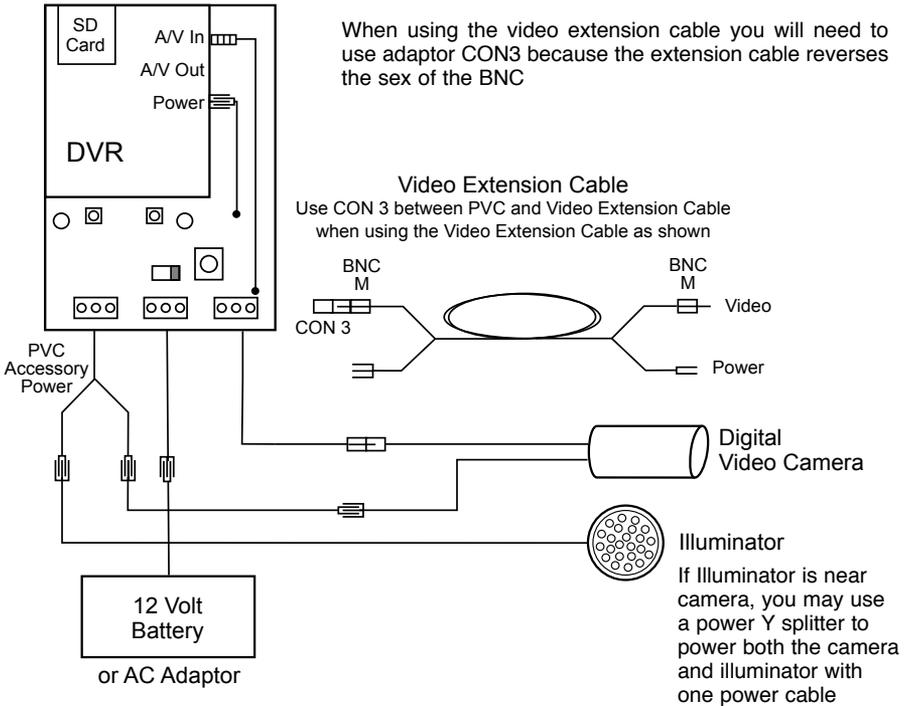
These diagrams do not use the Audio circuits. If Audio Recording is desired you will need to connect an audio cable to the PVC Audio Input circuit and connect a microphone to the audio cable. See Video Controller Layout Diagram.

▲ These diagrams show typical connections, you may wire up other devices with different types of connectors using the appropriate adaptors.

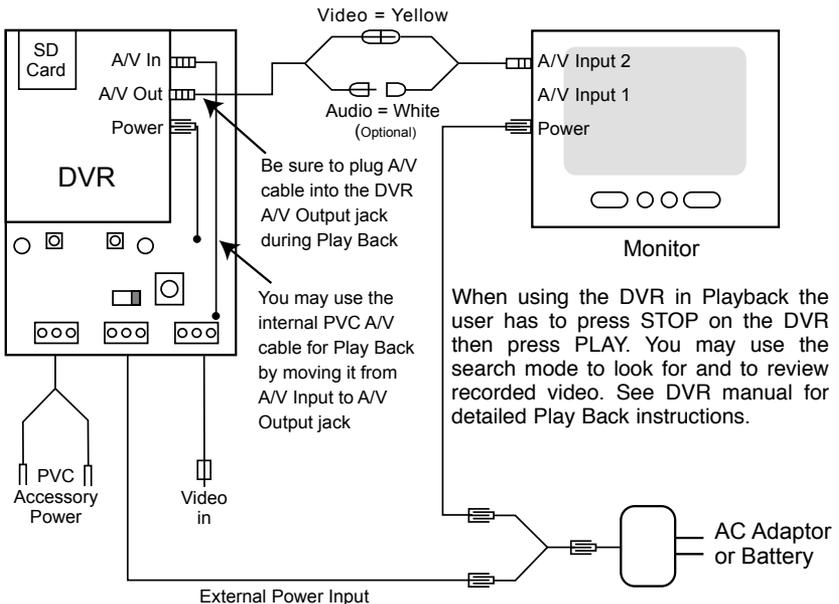
**VIDEO SET UP DIAGRAM
Using BNC Connectors**



OPERATE DIAGRAM



PLAY BACK DIAGRAM



DVR PROGRAMMING / SET UP:

The DVR comes set up from the factory for immediate use. These parameter value settings are required for proper operation of the Sentinel Portable Video Controller. Should you need to change them for different record rates, etc. see the DVR manual. DVR manual can be downloaded for our website: www.karastech.com/Documents/Video Recorder manual.

DVR Power Switch needs to be in the DC Power Position

Refer to DVR manual for complete overview of all programming modes

Set R time to 60 minutes, to allow DVR to run continuously for 60 minutes while performing set up procedures.

Menu Modes

Factory Default	N/A	If used, complete Set-Up Procedure is required	
System Status		SD	Full : Stop
Manual		: 704 x 480	10 FPS MQ 
Motion		: OFF 12:00 - 23:59	_____ Do Not Change
		352 x 240	30 FPS MQ 
Continue		: ON 00:00 - 23:59	_____ Do Not Change
		704 x 480	30 FPS MQ 
SD Card		Format > use F to reformat the SD card. This erases all data on the SD card Upgrade Boot loader > Do Not Use except to upgrade software	
Schedule Record		: OFF 12:00 - 23:59	_____ Do Not Change
		352 x 240	30 FPS MQ 
		: ON 00:00 - 23:59	_____ Do Not Change
		704 x 480	30 FPS MQ 
	Motion Record	: OFF	_____ Do Not Change
	Continue Record	: ON	_____ Do Not Change
	Schedule	: 00:00 - 23:59	_____ Do Not Change
	Video Size	: 704 x 480	} OK to Change
	Frame Rate	: 10 FPS	
	Quality	: Medium	
	Audio	: Off	
Manual Record		Video Size : 704 x 480	} OK to Change
		Frame Rate : 10 FPS	
		Quality : Medium	
		Audio : ON	
Set Motion Detect		NA Leave at system default (Do Not Use)	
Set Date / Time		Set Date :	Set for Current Date and Time
		Set Time :	
Search & Play		Use for Playback from DVR	

At the settings that come with your PVC, you should get approx. 150 minutes per gigabyte, max. 16 gigs or about 40 hours of recording time. The highest Resolution results in 75 minutes per gigabyte or about 20 hours at 16 gigabytes. To allow recording for these lengths of time, sufficient power is required such as a large external battery or AC power.

WIRELESS RECEIVER:

The wireless receiver senses up to 32 transmitters. It is compatible with the standard sensors used with the Sentinel Radio Alarm. You may use the same sensors to activate the PVC system as well as Sentinel Radio Alarms, activating both systems at the same time.

Programming Receiver Memory:

Programming wireless sensors to be received by the wireless receiver is very simple.

1. The PVC has to be powered on, put power select switch in one of the two power modes, internal or external. This turns on the receiver.
2. Now press and release the program button on the PVC circuit board.
3. The program signal indicator will light if there is room in the memory for another sensor transmitter. (32 transmitter max.)
4. Send a signal from the wireless transmitter, the signal indicator light will flicker as the signal is received.
5. Repeat steps 2 thru 4 for each additional transmitter. (Note: The receiver can memorize each transmitter more than once. To prevent duplicate entries, program each transmitter into the receiver only once.)

Checking Memory:

1. Press and hold for about two seconds until program signal indicator lights, then release.
2. Count the number of indicator blinks. This is the total number of transmitters programmed.

System Testing:

1. Set the Rtime control on the PVC circuit board to one minute.
2. Activate each transmitter one at a time.
3. Look for the Running indicator to light. This indicates the signal was received. The PVC will run for about one minute. To terminate the Run time, turn the power off momentarily a repeat the process for each transmitter. You may remove the Secs jumper the operate in seconds mode so the run time may be set to just a few seconds thus eliminating the need to power off reset to restart the recorder.

Erasing Memory:

1. Press Program Button and continue hold it through the count of the number of transmitters
2. Continue to hold the button after the count until the Signal indicator blinks one more time (about five seconds after the count)
3. All transmitters programmed into memory will now be erased.

WIRELESS SENSOR TRANSMITTERS

Any of the Sentinel wireless sensors are able to activate the PVC. See the Sentinel Portable Alarm Manual 2200 Series, for a more comprehensive list of Sensor Programming or individual sensor data sheets for programming activation. Wireless system is based upon the Linear DX sensors and receivers.

SPECIFICATIONS:

Portable Video Controller (PVC):

Enclosure size: 8" x 5" x 3.75" Pelican waterproof case with weather tite fittings for .25" diameter cables

Power source: Internal 8 AA batteries; External AC adapter or other battery

Interfaces: accessory power output, external power input, receiver antenna, DVR video and audio inputs and outputs

Typical operating time: from internal batteries, 30 minutes record time, 3 - 4 days; external power recording time unlimited with AC adapter.

Operating temp.: -10°C to 50°C

Digital Video Recorder (DVR) as used in the PVC

Video	System	NTSC / PAL Video System and Video Loss Auto Detection			
	Codec	MPEG4-SP ASF File Format			
	Record Frame Rate	1, 2, ... , Maximum fps selectable Maximum: NTSC: 30 fps@352x240/ 24 fps@704x240/ 12 fps@704x480 PAL: 25 fps@352x280/ 20 fps@704x280/ 10 fps@704x560			
	Record Quality	Low / Medium / High			
	Record Time* *it may change for different video content (1GB SD Card)	Frame Rate@ Resolution Quality	30 fps@352x240 25 fps@352x280	24 fps@704x240 20fps@704x280	12 fps@704x480 10 fps@704x560
		Low	400 minutes	240 minutes	240 minutes
		Medium	300 minutes	150 minutes	150 minutes
		High	150 minutes	75 minutes	75 minutes
		Recording Date/Time	Overlay with Video Images in ASF File		
		Input	1 CH Composite Video Line In		
	Output	1 CH Composite Video Line Out			
Audio	Sampling Rate	44.1 Khz			
	Codec	G.726/ 32 kbps			
	Input	1 CH Audio Line In			
	Output	1 CH Audio Line Out			
Storage Media		SD Card (FAT16/ 32) 16 gigabytes max.			
Recording Mode		Only use Schedule Continue mode with PVC			
Motion Detection Setting		Not used with PVC			
Event Search Function		Not used with PVC			
Playback Function		Play/Fast Forward/Fast Rewind/Pause/Step Forward/Step Backward			
Playback Speed		x1 / x2 / x4 / x8 / x16 / x32			
Power Supply		Supplied by PVC			
Battery Lasting Time		See Operation Runtime Section			
Weight		89 g (without Battery/ SD card)			
Dimensions		65 mm (W) x 90 mm (H) x 29 mm (D)			
Operating Environment		30% - 80% RH, 5°C ~ 45°C (41°F ~ 113°F)			
Storage Environment		30% - 90% RH, 0°C ~ 50°C (32°F ~ 122°F)			

Video Camera: (As shown in the photo of System Components prefacing page 1)

NTSC/PAL compatible, 1/3" Sony Super HAD CCD. Low Lux sensitivity .05, Operating voltage 12V +/- 10% typical. Most 12v video cameras will work with the PVC.

Power Consumption: 65 mA or less

Video Monitor: See specific monitor specification sheet.

Sensors: Compatible with all Sentinel Portable Radio Alarm sensors (Linear DX)



KARAS TECHNICAL SERVICES

P.O. Box 695, Aptos, CA 95001 (831) 685-0816 Fax (831) 685-0817
web site: www.karastech.com