

VPC 2.0

Video Pole Camera

User Manual



Research Electronics International, LLC

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VPC 2.0

Video Pole Camera



Thank you for purchasing the VPC 2.0 Video Pole Camera. The Video Pole Camera allows you to extend your view of your surroundings that might otherwise be difficult or dangerous.

This manual contains proprietary information intended solely for use with the VPC 2.0 Video Pole Camera and relative accessories. Operation and specifications may vary slightly depending on the model.

The overall effectiveness of this product, and of any surveillance countermeasure, is dependent on the threat level and the user's ability to properly utilize the appropriate equipment. The REI Training Center offers training on technical surveillance countermeasure equipment.

Revision 1.0

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Information contained in this manual including product operation and specifications is subject to change without notice.

Any product or brand names contained in this manual are used only for identification purposes and are trademarks or registered trademarks of their respective holders.

This device has been tested and complies with the essential requirements of the following CE directives:

LVD Directive 2006/95/EC

EMC Directive 2004/108/EC

OWNER'S RECORD

The Serial Number of each Video Pole Cam is located on the back of the monitor. Please record this number and refer to it whenever you contact your dealer or Research Electronics International concerning this product. Note: Removal or alteration of the serial number automatically voids all warranties of this product.

SERIAL NUMBER: _____



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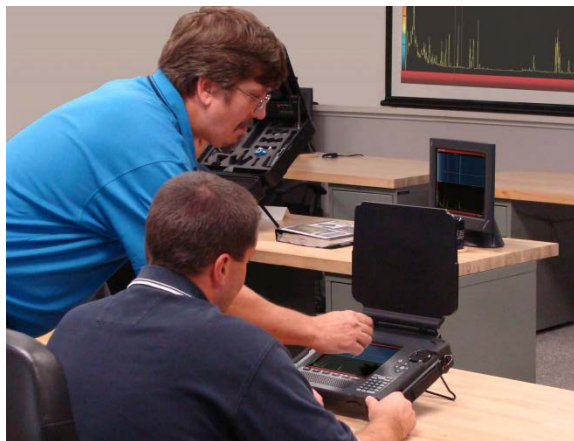
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Technical Security Training

REI Training Center: REI offers the world's largest commercially available Technical Security training facility. Training courses include classroom instruction and hands-on exercises where students perform sweep exercises in "live" environments utilizing "target rich" project rooms. The progressive course curriculum is designed for the beginner or the seasoned Technical Security Technician.

Regularly scheduled courses are taught monthly; visit REI's website (www.reiusa.net) or contact REI (sales@reiusa.net) for training dates.



Contact REI for more information about technical security training and/or other equipment:
www.reiusa.net

PRECAUTIONS

PRECAUTIONS

Video Pole Camera

- CAUTION: Any changes or modifications not expressly approved by REI could void the user's authority to operate the equipment.
- The Video Pole Camera is for professional use only.
- Do not use the Video Pole Camera near power lines or high voltage wiring. Possible electrocution may occur.
- Exercise care in walking, climbing or other movements while watching the Video Pole Camera Monitor. Serious injuries may result.
- If the Video Pole Camera is used to move overhead objects, do not stand directly under the object or in its path. If the object slips and falls personal injury could result.
- Do not subject the Video Pole Camera to high forces. Damage to the Video Pole Camera could result.
- For your own safety do not use the Video Pole Camera if:
 - The Video Pole Camera's cables or its plugs become frayed or otherwise damaged.
 - The Video Pole Camera's housing is cracked or otherwise damaged.
 - You suspect that the unit requires servicing
- Only use REI approved power sources, batteries, chargers, and accessories. The supplied power supply is REI Part #R-00006. The supplied battery pack: RRC Power Solutions Lithium Ion Rechargeable Battery pack Model #RRC2040, rated 11.25V, 2950mAh, 33.2Wh. The supplied real-time clock battery is a CR2032 coin cell battery with the following specifications: 3V nominal voltage, 225mAh nominal capacity, -30°C to 60°C operating temp
- The Video Pole Camera should not be used for normal operation while charging a battery in the Video Pole Camera unit. To return to normal operation, disconnect the AC power supply.
- There are no serviceable parts inside. Contact your dealer or Research Electronics International, LLC for repairs. Opening the unit will void the warranty.

Lithium-Ion Batteries

- CAUTION: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- For your own safety do not use any Video Pole Camera battery if:
 - The battery case is cracked or otherwise damaged.
 - The battery is excessively hot or warm for any reason.
- Avoid shorting the battery, immersing in water, or exposing to fire. Also, avoid excessive physical shock or vibration.
- Only use REI battery chargers or products to charge REI batteries
- There are no serviceable parts inside the battery. Contact your dealer or Research Electronics International, LLC for repairs. Opening or puncturing the unit can be dangerous and may result in injury.
- Using the Lithium-Ion batteries in a manner not specified by this user's guide may override the equipment's built-in protection mechanisms.
- Keep out of the reach of children.
- Dispose of Lithium-Ion batteries in accordance with local regulations.

OPERATION

Equipment Description

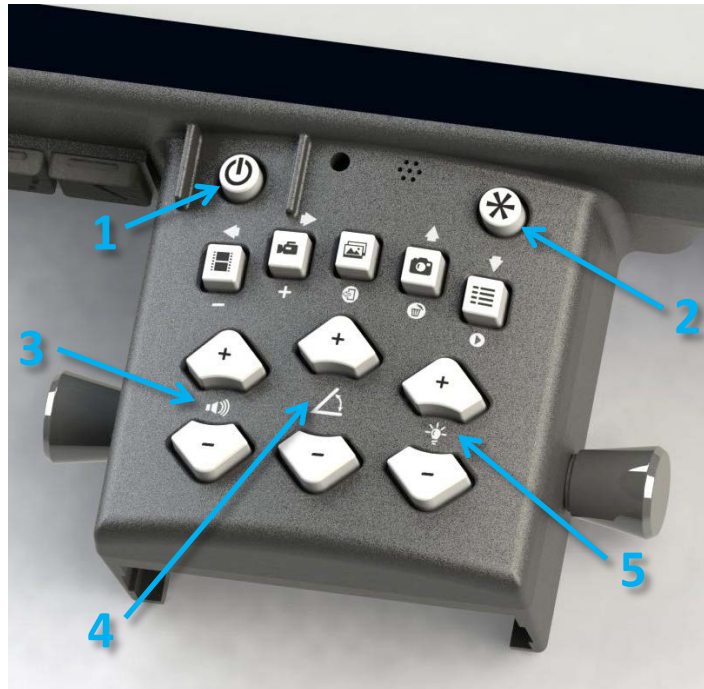
Camera Head (Color Camera Head Pictured)



1. **CAMERA CONNECTOR** – connects the Camera Head to the pole. This connector provides both electrical and physical connections.
2. **LED Lights** – provide supplemental light (either white light or IR light, depending on Camera Head) in low to dark lighting conditions.

OPERATION

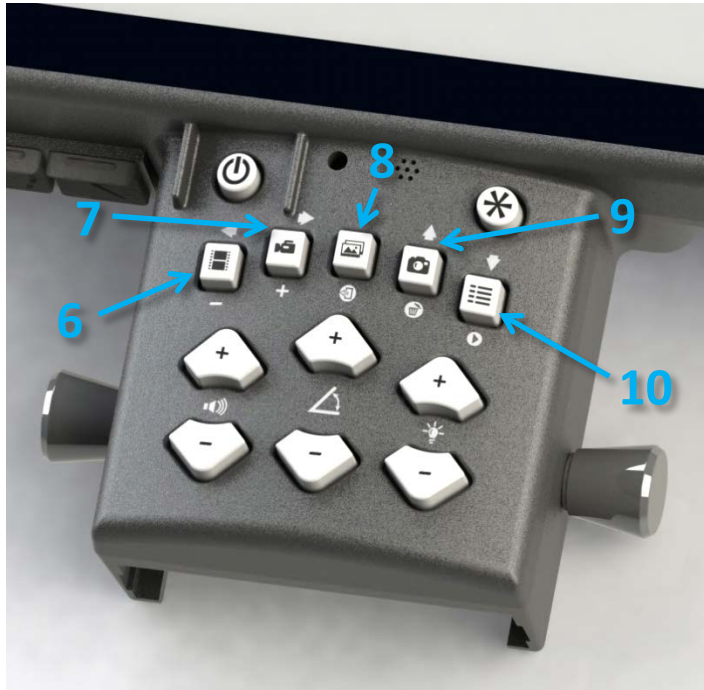
Keypad - Basic Operation



1. **POWER** – Press to Power on or off.
2. **STAR** – Provides alternate operations for the Up/Down keys. Press the "*" (STAR) key; the keys across the bottom of the keypad will turn blue, indicating the second function is active. To exit this mode, press the "*" (STAR) key again.
3. **VOLUME UP / DOWN** – Increases or decreases volume level during video playback. When minimum or maximum adjustment levels are reached, the keypad will blink.
Second function:
KEYPAD LIGHTING – UP key turns on the keypad backlight, the DOWN key turns it off.
4. **CAMERA TILT UP / DOWN** – Adjusts the position of the camera tilt. When minimum or maximum adjustment levels are reached, the keypad will blink.
Second function:
RESERVED - Reserved for additional functions available in future camera head models.
5. **LED BRIGHTNESS UP / DOWN** – Adjusts the brightness of the LEDs near the camera used for illumination. When minimum or maximum adjustment levels are reached, the keypad will blink.
Second function:
DISPLAY BRIGHTNESS UP / DOWN Allows manual adjustment of the display backlight brightness. To return to automatic brightness adjustment, press and hold the "-" (DOWN) key until the blue keypad light blinks. (An ambient light sensor located just to the right of the Power key adjusts the Display Brightness for the current lighting conditions.)














OPERATION

Keypad - Record / Playback / Menu Operation



Buttons 6 through 10 are for recording and playback of videos and still pictures and for accessing the menu. Their functionality changes depending on the current state of the Pole Camera. See the table below for reference.

Pressing one of these buttons will put the Pole Cam in the corresponding mode. Once the Pole Cam is in one of these modes, buttons 6 through 10 will change functions according to the table below.

	6 	7 	8 	9 	10 
					
	-	+			
BUTTON MODE	RECALL VIDEO	RECORD VIDEO	RECALL PICTURE	TAKE PICTURE	MENU SCREEN
RECALL VIDEO	SELECT PREVIOUS	SELECT NEXT	EXIT	DEL?	PLAY/PAUSE
RECORD VIDEO	No Op	STOP RECORD	No Op	No Op	No Op
RECALL PICTURE	SELECT PREVIOUS	SELECT NEXT	EXIT	DEL?	No Op
TAKE PICTURE	No Op	No Op	No Op	No Op	No Op
MENU SCREEN	EDIT DOWN	EDIT UP	EXIT	SELECT PREVIOUS ITEM	SELECT NEXT ITEM

OPERATION

Menu Items

The following adjustment items are available from the on screen menu. From the menu screen, press ▼ or ▲ to select a different menu item. Press ◀ or ▶ to adjust the value of the currently selected menu item.

Date

To adjust the current date

Time

To adjust the current time

Rec Mode

This menu item has no operation

Rec Time

To adjust the predefined record duration in seconds for video recordings

Options: 5s, 10s, 30s, 60s, 120s

Brightness

Adjusts the brightness of the display image

Contrast

Adjusts the contrast of the display image

Saturation

Adjusts the color saturation of the monitor display

Exit

Exits the Menu. The menu will automatically exit after about 10 seconds, if no keys are

pressed. The Recall Picture button  can also be pressed to Exit the menu.

OPERATION

Inputs / Outputs



The input / output jacks are located beneath the monitor on the left side

1. MICRO SD CARD SLOT - used for saving still pictures or recorded video
2. VIDEO OUT PORT - for connecting to an external monitor
3. HEADPHONE JACK - for connection of headphones to monitor audio from the unit
4. POWER INPUT - for AC adapter (only use REI supplied AC Adapter)

OPERATION

SET-UP & BASIC OPERATION

Battery Usage

Lithium-Ion rechargeable batteries have been included with your unit.



To insert or switch out a new battery:

1. Locate the battery latch at the top of the monitor and slide toward the back of the unit to open. The battery door opens just enough to slide a battery in and out. Do not try to force the battery door to open any further.
2. Slide the battery into the battery slot observing proper contact alignment.
3. Close the battery door.

The Pole Camera has a built-in battery charger. To charge the battery in the unit:

1. Locate the Power Input at the bottom left side of the monitor.
2. With the battery already inserted in the unit, connect the provided AC power supply to the power input. The battery will begin charging. Charging is automatic; it will stop when the battery is fully charged.

Note: The Pole Camera should not be used for normal operation while charging a battery in the unit. To return to normal operation, disconnect the AC power supply.

Note: To keep the battery in good working condition, it should be removed from the Pole Camera for long term storage of 90 days or more. Even when powered off, the operating system of the Pole Camera continues to use a low stand-by current that in some cases could cause a deep discharge and possible damage to the battery, preventing a normal recharge.

OPERATION

Real Time Clock Battery

An internal CR2032 coin cell battery provides power for the real time clock function. The Real Time Clock (RTC) battery should provide years of service. In the event that the clock on the Pole Camera stops functioning, the Real Time Clock battery will need to be replaced.

To replace the Real Time Clock battery:

- 1) Locate the small, round, real time clock battery door on the back of the monitor enclosure.
- 2) Remove the 2 small Phillips head screws that secure the battery door to the monitor enclosure.
- 3) Remove the old CR2032 battery from the battery clip and replace with a new CR2032 battery; the positive (+) side should be facing up, away from the circuit board.
- 4) Replace the battery door and secure with the Phillips head screws.

Note: The provided internal coin cell is a CR2032 battery with the following specifications: 3V nominal voltage, 225 mAh nominal capacity, -30°C to 60°C operating temperature.



Assembling the Unit

Follow these simple steps to begin using the Pole Camera:

1. Remove the main body of the Video Pole Camera, which includes the pole and monitor, from the case.
2. Remove the camera from the case.
3. Place the camera onto the pole being careful to observe the position of the alignment notch in the connector. Tighten the knurled ring from the pole connector onto the threads from the camera head connector.

OPERATION

4. Place one of the provided rechargeable batteries in the battery compartment

Operating the Monitor

1. Turn the monitor on by pressing the Power Switch on the keypad. The camera will briefly move through its entire range of motion and then settle to its last position before the unit was switched off.
2. If necessary adjust the Brightness, Contrast, and Saturation of the monitor (see Menu Items, page 11) to achieve the desired video image.
3. The monitor may be tilted as needed to allow better viewing of the video image.

Removing the Monitor

The monitor on the Pole Camera is designed to be easily removed from the pole assembly. To remove the monitor from the pole assembly:

1. Locate the cable assembly from the pole that connects to the back of the monitor enclosure.
2. Gently tug in a downward motion on the connector of this cable assembly to disconnect it from the monitor.
3. Locate the spring-loaded knobs at each side of the pole camera's keypad.
4. Twist and pull on the knob. It will remain in an open position.
5. Gently slide the monitor assembly away from the pole until it comes completely off of the hinge that it rests on.
6. To reconnect the monitor to the pole, reverse the process.

Adjusting the Camera Position

The camera can be manually rotated almost 360°. To rotate the camera, with one hand holding the monitor in place, grasp near the bottom of the pole with the other hand and begin twisting the pole.

The camera also features a motorized tilt function. To tilt the camera, press the Camera Tilt Up/Down buttons (see pg. 9)

Adjust the Camera Illumination

The camera features LED lights to provide supplemental light in low to dark lighting conditions. The color camera features White LED lighting. The Black and White Camera features IR LED lighting. To adjust the camera illumination, press the LED Brightness Up/Down buttons (see page 9)

OPERATION

Extending the Pole

The VPC 2.0 can be extended up to 6.5 feet (198cm). The longer pole included with the VPC 2.0 Deluxe model can be extended up to 12.5 feet (381cm). To extend the pole, release one or more locking latches on the side of the pole. Extend the pole to the desired length. Close the locking latches.

To retract the pole, open the locking latches and slide the pole sections to the desired length. Do not force the pole sections. The sections should retract with little force.

The Video Pole Camera contains an internal, high stretch ratio, retractable cord eliminating any external wires or cables. The retractable cord will naturally pull the pole sections toward the closed position.

NOTE: If the Video Pole Camera is used with the pole extended near its maximum length for more than 30 minutes, the retractable cord inside the pole may develop a memory and retract slower than usual causing part of the cord to be ejected from the bottom of the pole. In extreme cases, the cord can bind inside the pole. To avoid potential problems with the retractable cord when the pole has been extended for long periods of time, collapse the pole slowly, giving the retractable cord time to retract back to its original stretch ratio memory.

Taking a Picture / Viewing a Saved Picture




The Video Pole Camera is capable of taking pictures and viewing saved pictures on the monitor.

To Take a Picture:

1. Position the camera so that the desired image is in view.

2. Press the "Take Picture" button 

To View a Saved Picture:



1. Press the "Recall Picture" button.  This will enter "Recall Picture" mode.
2. While in "Recall Picture" mode, press the ◀ or ▶ buttons to view the previous picture or the next picture.
3. While in "Recall Picture" mode, press the Trash Can button  to delete the picture currently being viewed.
4. Press the Exit button  to exit "Recall Picture" mode.

Recording Video / Viewing Previously Recorded Video





The Video Pole Camera is capable of recording video and viewing previously recorded video on the monitor.

OPERATION

To Record Video:

1. Set a predefined record time in the menu (see page 11).
2. Position the camera so that the desired image is in view.
3. Press the "Record Video" button  to begin recording. During recording, a microphone located near the keypad records the audio. This can be used to annotate the video during recording.
4. Press the "Record Video" button  again to stop recording. The recording will automatically stop after the predefined record time set in step 1.

To View Previously Recorded Video:

1. Press the "Recall Video" button.  This will enter "Recall Video" mode.
2. While in "Recall Video" mode, press the ◀ or ▶ buttons to scroll through available videos.
3. Press the "Menu" button  to Play or Pause playback of the currently displayed video.
4. Press the Volume Up/Down buttons to adjust the volume level during playback.
5. While in "Recall Video" mode, press the Trash Can button  to delete the currently displayed video.
6. Press the Exit button  to exit "Recall Video" mode.

SPECIFICATIONS

Specifications

COLOR CAMERA HEAD (standard)

Signal Format: NTSC
Horizontal Resolution: 550 TV Lines
Sensitivity: 0.05 Lux / Faceplate
Illumination: White LEDs with variable brightness control

BLACK & WHITE CAMERA HEAD

Signal Format: NTSC
Horizontal Resolution: 600 TV Lines
Sensitivity: 0.1 Lux / Faceplate
Illumination: Infrared LEDs with variable brightness control

COLOR LCD DISPLAY

Size: 8 in (20.3 cm) diagonal
Resolution: 800x600
Auto Brightness: up to 1000 nits
Viewing Angles: (70° @ 3,9 & 6 o'clock), (50° @ 12 o'clock)
Display Controls: color saturation, contrast, and brightness
Camera Head Controls: variable illumination

DVR

Format: MJPEG 25fps
Record Time: 5s, 10s, 30s, 60s, 120s
On-screen Date and Time Stamp
Video Playback Mode
Snapshot Mode: (720x480 jpg)

MISCELLANEOUS

3.5mm Video Output Jack

3.5mm Headphone Jack

Micro SD Card Slot

Internal Battery Charger

Batteries:

Lithium Ion Rechargeable Battery (2 included)

RRC Power Solutions Lithium Ion Rechargeable Battery pack Model #RRC2040, rated 11.25V, 2950mAh, 33.2Wh.

Typical Run-Time: 5 hours

Max Charge Time: 3 hours

CR2032 coin cell battery (provides power for real time clock function)

3V nominal voltage, 225mAh nominal capacity, -30°C to 60°C operating temp

SPECIFICATIONS

MECHANICAL

VPC 2.0

Extended Pole*

Collapsed Length (with Camera Head): 23.5 in (59.7 cm)

37.0 in (94 cm)

Extended Length (with Camera Head): 78 in (198 cm)

150 in (381 cm)

Case Size: 20x15x5 in (51x38x13 cm)

36x13x5 in (91x33x13 cm)

Case Weight (with all accessories): 12 lbs (5.4 kg)

14 lbs (6.3 kg)

**Included with VPC 2.0 Deluxe Model*

THERMAL

Operating Temperature: -10 to 50°C

Battery Charging Temperature: 5 to 37°C

Storage Temperature: -20 to 60°C

Note: extended storage at temperatures above 40°C could degrade battery performance and life.



Product specifications and descriptions subject to change without notice