

# ATD NORTHWEST

## PATH CV-99 MK-II PORTABLE POLE MOUNTED VIDEO SYSTEM \*

### FEATURES:

The PATH MK-II Portable Quad Camera Video System refers to a complete two camera portable video system that can observe and record all movements associated with pedestrians, vehicles and bicyclists through a pre-determined study area. The system is lightweight, portable, internally powered, weatherproof and will operate unattended for a minimum of twenty-four (24) hours. The system requires no more than one person to install, operate and remove after initial installation & training.

### SYSTEM HARDWARE:

The system consists of two (2) digital color video cameras with 16:1 Zoom Lens, environmental camera housings, camera mounting hardware, video and power cabling, a DC powered color split-screen generator, a DC powered color 24 Hour real time VCR, and a locking weatherproof electronics housing with mounting hardware.

### WARRANTY:

A comprehensive warranty on all parts and equipment is provided for a period of one year from time of purchase.

### TECHNICAL SUPPORT:

A qualified technician is available to provide technical support by telephone or E-Mail within 24 hours of each request for assistance. Technical Support is provided at no charge for the duration of the warranty period.



System Description	PATH CV-99 MK-II PORTABLE VIDEO SYSTEM
High Res Color Video Camera & Zoom Lens	Two (2) Each w/ Remote Control
Camera & Housing with Pole Mount	Two (2) Each
24 Hour Color Video Recorder	(One) 12 volt 24 Hour Color Video Recorder
Split Screen Generator	(One) 12 volt Split-Screen & Switching Unit
Electronics Environmental Housing	(One) Waterproof & Dust Resistant Environmental Electronics Housing
Locking Provisions	(Two) Stainless Steel Pad Lock Hasps w/ added chain locking provision
Power Package	System capable of operating w/ 120V AC or 12V DC power

Due to continued development, specifications may change without notice.

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# PATH MK-II ELECTRONICS CABINET PACKAGE SPECIFICATIONS

## FEATURES:

The PATH MK-II Electronics Cabinet is constructed of welded 1/8" Aluminum panels with radius corners throughout. Light-weight materials is employed in order that the cabinet may be carried and held in place on a standard power pole by one person. A heavy duty pole adapter is an integral part of the cabinet. This adapter makes provision for strapping the unit to a pole with three rust proof stainless steel straps (provided with the unit). The cabinet is of rugged construction and employs additional welded stiffeners to accommodate shelf mounting of the electronic components. Shelves are easily removed for maintenance. The cabinet accommodates the weight of one or two heavy duty deep cycle marine batteries in addition to the supplied electronics without sagging or warping. It is capable of supporting battery operation or 120V AC operation of the electronics.

A water proof lip extends over the door of the cabinet to prevent water from entering the cabinet when the door is open. A rugged, full length piano-hinge is used to mount the door to the cabinet body. Pressure foam pads with at least 1/2" contact is mounted to the inside surface of the door and provides a waterproof seal when the door is closed. The door is latched with two stainless steel latches that employ integral hasps to accommodate standard padlocks. Provision is made to store at least six sections of 1.25" diameter conduit to the interior surface of the door. A waterproof input port is supplied on top of the housing to accept the supplied conduit sections. Conduit fittings are supplied with 1/8" "O" rings to prevent water seepage into the cabinet. The cabinet is fitted with 8 louvers on either side to provide cross ventilation of the electronics package during extreme high temperature conditions. Fitted and replaceable dust filters are supplied to cover each louvered section. Provision is made to seal off the vents in case of extreme low temperatures.

Anti-theft provisions include two 5/16" Chain eyes on the back of the unit so that a chain may be inserted through the eyes and pad-locked to the pole. A prominent "Danger High Voltage" sign is attached to the front of the door in a conspicuous location to deter unauthorized tampering. A Job ID bracket is supplied so that a Waterproof JOB ID Card can be inserted to identify the owner of the equipment and phone number for additional information.

Heavy duty carrying handles are placed on either side of the cabinet so as to distribute the weight of the cabinet about its center of gravity. A BNC video output port is provided so that external monitoring of the electronics can be accomplished while the cabinet is closed and locked. The entire cabinet is clear-coated inside and out before painting. Deep textured radiation resistant gray paint is applied to both interior and exterior surfaces.

Description	MK-II Electronics Cabinet (PATH-CAB-CV99)
Aluminum Cabinet w Front Door	1/8" Aluminum cabinet with radius corners & sealed piano hinge door
Shelves	One, Removeable
Conduit Input Port	1, Waterproof with "O" ring sealers
Job ID Bracket	1, Provides for Job ID information to the Public
Pole Mounting Provisions	3 Stainless Steel Straps (Included)
Environmental	Water proof & dust resistant w cross ventilation & dust filters
Locking Provisions	Stainless Steel Pad Lock Hasps & Chain-lock eyes
Conduit Storage	Six Sections (Included) mounted in internal door bracket
Video Output Port	1, BNC
Warning Indicator	Certified: "Danger High Voltage" Sign
Dimensions	15" x 22" x 22" (WxHxD)
Weight	30 lbs

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# PATH MK-II DIGITAL COLOR CAMERA PACKAGE SPECIFICATIONS

## FEATURES:

- Provides 1/4" color CCD with 410,000/380,000 pixels or 480 TV lines definition.
- Dedicated Micro-processor based image enhancer for greater definition.
- Noise reduction circuit which improves S/N ratio.
- Provided with 20 foot camera cable and six-pin micro-connector
- Provided with 12" form fitted environmental housing with sun shield, locking hasp, and heavy duty pole mount.
- Automatic shutter speeds from 1/60th second to 1/100,000th second.
- Auto/Manual white balance
- Auto/Manual gain control.
- Selectable Back Light compensation circuit



Description	MK-II COLOR CAMERA PACKAGE
Power	DC+ 12 V(+/-2V)
Effective pixels	410,000
Image Sensor	1/4 Inch Color CCD
Horizontal Resolution	480 TV Lines
Zoom Lens	16X Optical Zoom w 2X or greater Digital Magnification
Lens Adapters	0.5X Wide Angle Adapter + 1.5X telephoto adapter (Optional)
Remote Control	Iris, Focus, Zoom w Included Wired Control, (Option RS-232C)
Power Consumption	Less than 4 watts
Scan System	525 line, 2:1 Interlace
Scanning Frequency	(H)15.734Khz (V) 59.94Hz (NTSC)
Sync System	Internal Sync
Video Output Signal	NTSC, BNC
Gamma Correction	Gamma=0.45
S/N Ratio	More than 48db
White Balance	Auto (2800K to 8000K) or Manual
Shutter Speed	1/60 to 1/100,000th Sec (Auto mode), 8 step manual to 1/10,000th Sec
Min Illumination	1.0 Lux @ f/1.6
Gain Control	Auto (0 to 18db) or OFF
Back Light Compensation	Auto, Off
Iris	Auto Shutter or Auto Iris, Remote Control
Camera ID	On (3 Character) OFF
Operating Temperature	0 degrees C to +40 degrees C
Dimensions	5.0 x 5.75 x 12 in (WxHxD)
Weight	2.5 Pounds

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## PATH MK-II 24 HOUR REAL TIME COLOR VIDEO RECORDER

Conventional time lapse video tape recorders only record about five pictures per second when operating in the twenty-four hour mode. For accurate assessment of traffic and infractions at a railroad grade crossing it is paramount to be able to record high resolution pictures at a frame rate of 20 pictures per second or more. The conventional time lapse VCR accomplishes this function by transferring to a real time two hour recording when an alarm is initiated. Unfortunately, this action consumes the video tape at an accelerated rate and requires that the tape be retrieved more frequently.



The video recorder used in this particular application is a 24-hour "Real Time" machine that can be alarmed in the twenty-four hour mode of operation. It is capable of recording in the alarm mode, a programmed time sequence mode, or continuous 2, 8, or 24 hr recording modes. When used in grade crossing applications, the recorder is capable of recording train approaches for a period of one-week or greater. It is capable of accepting an alarm implementation from the provided railroad grade crossing signal.

The VCR is constructed in a half-rack configuration to conserve space in the pole mounted electronics cabinet. It is light-weight so that one person may be able to carry the cabinet. It operates on 12 volt Direct Current and consumes no more than 10 watts of power to conserve battery power. It operates in the NTSC color TV format so that incidents can be edited and compiled into a comprehensive video report.

Specifications	24 Hour Real Time Color Video Recorder (RTVCR-01)
Recording Method	Dual-azimuth 2-head rotating helical scanning system
Tape Speed	11.12 mm/sec (8 hr mode)
Video Cassette Tape	VHS 1/2" T-160 high quality video tape
Record/Playback time	Maximum: 24 hours (T-160 tape)
Recording System	NTSC color TV system
Operating Temperature	5 degrees C to 40 degrees C (+41 F to +104 F)
Operating Humidity	80% or less
Power Requirements	DC 12V, 10 watts
Dimensions	10.4"(W) x 3.7"(H) x 10.2"(D)
Weight	2.3kg
Video Input/Output	1 V p-p, BNC, 75 ohm, unbalanced
Horizontal Resolution	Color Mode, 300 lines or more

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## PATH MK-II COLOR SPLIT SCREEN DEVICE WITH SWITCHER

For proper instrumentation, we use four cameras to cover a very wide view of an intersection or a railroad grade-crossing approach. A color split-screen device should be employed to position two or more camera images on the same video recording. This device may be used to view each camera individually in a full screen presentation, to provide a vertical or horizontal split screen effect between two individual cameras, or to provide up to four compressed full view pictures simultaneously in a quadrant display.



The split-screen device includes a title or location generator for each camera and a time and date generator so that this critical information can be superimposed over the video images. The device employs a time base corrector so that all of the individual camera images can be synchronized to form a proper combined image. The device is able to process all of the incoming images so that images recorded on the VCR maintain at least 300 lines of horizontal resolution. A color bar generator is included as a test function so that a system test can be incorporated into each video cassette recording.

The unit provides one alarm input for each video input. Alarm triggers operate from a normally closed or a normally open signal input. The alarm indication is a piezoelectric ceramic buzzer and an on-screen video display. The system incorporates an on-screen loss of video indicator so that the operator can determine when a camera has become inoperative.

Specifications	Color Screen Splitter w Switcher (PATH-SSD99)
Signal Processing	NTSC 525 lines, 60 fields/ second
Video Input/Output	1.0V p-p, 75 ohms BNC, Unbalanced
Video Resolution	720 x 512 pixels
Video Compression, Quad Display	H compression 2:1, V compression 2:1
Display rate, full screen	NTSC, Real Time, 60 fields/sec
Display Rate, Quad	NTSC, Real Time, 30 fields/sec
Camera ID	7 Characters, Full English Alphabet + Numeric
Switcher Dwell Time	0-59 seconds
Time/Date Generator	CMOS battery backed module, on screen time and date.
Power Requirements	12 V DC, 18 watts maximum
Operating Temperature	0 degrees C to 40 degrees C
Dimensions	216mm (W) x 46mm (H) x 191mm (D)

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