PHASE EIGHT®

NOTES	SPEC NO.	REV.	SEC.
SUPERSEDES PRODUCT SPECIFICATION 584-690	584	295	4

PRODUCT SPECIFICATION

MODELS: V1504T-M, V1504L-M, AND V1504L-S

PRODUCT CODES: SEE TABLE 1

DESCRIPTION: AUTOMATIC, DUAL-OUTPUT SWITCHERS

- **Convenient Phase Eight packaging**
- **Microcomputer-based**
- **Dual output**
- **Color compatible**
- **UL listed**

The patented V1504 switchers are designed to provide unprecedented flexibility and expandability for sequential switching applications . Up to seven slaves with a terminated master and six slaves with a looping master can be cascaded in one Phase Eight card cage, providing 32 camera inputs with the terminated master and 28 inputs with the looping master. Both master modules feature dual monitor outputs, allowing the operator to select one camera position for viewing on the "HOLD" monitor while the switching sequence of all cameras continues on the "SCAN" monitor.

Dwell time for camera positions is adjustable on the master unit and can be set for a period from 0.5 to 60 seconds. Push-button operation is simple, and front panel LEDs provide constant positive system status identification.

V1504T-M SWITCHER

TABLE 1
MODELS AND PRODUCT CODES

Model Number	Product Code	Description
V1504T-M	0737-10	Terminating master, 120 VAC input
V1504L-M	0735-10	Looping master, 120 VAC input
V1504L-M-230	0735-11	Looping master, 230 VAC input
V1504L-S	0740-10	Looping slave, compatible with all masters

CONTRACTORS' SPECIFICATION

AUTOMATIC, MICROCOMPUTER-BASED, DUAL-OUTPUT SWITCHERS

The video switcher shall be an automatic, microcomputer-based modular unit with dual monitor outputs. These switchers shall have built-in self-check on power-up and shall be expandable from four to either 28 or 32 inputs by adding slave modules. Vertical-interval switching shall be employed, and neither black-and-white nor color signals shall be degraded in the switching process. Automatic sequential switching of up to four video inputs shall be provided for each master and each slave unit. One master unit shall accommodate up to seven modular slave units (six slave units if the master has looping capability). Looping and terminated models shall be available and compatible.

Manual selection of camera inputs shall be by front-panel mounted pushbuttons, and there shall be LED indicators to show PASS, SCAN and DWELL functions. In the SCAN mode the dwell time shall be operator selectable from 0.5 to 60 seconds.

The switching operations shall not cause any line to become unterminated. All terminations, whether internal or external, shall be 75 ohms. The switchers shall be capable of locking to an external sync source. The unit shall provide unity gain. Input-to-output isolation and crosstalk shall be typically 40 dB at 3.58 MHz. The operational bandwidth shall be 10 Hz to 10 MHz. Hum and noise shall typically be 55 dB below a reference level of 1 Vrms at 3.58 MHz. Power line noise resistance shall be 2500 V or greater. The electrostatic discharge resistance shall be 14,000 V or greater. The switcher shall comply with UL standard 1409.

The dimensions shall not exceed: height, 3.5 in. (8.9 cm); width, 2.1 in. (5.4 cm); depth, 10.9 in. (27.7 cm). Double-width looping master modules shall not exceed 4.3 in. (10.9 cm) in width.

The switcher shall be Vicon's Model V1504 Series (V1504T-M, V1504L-M and V1504L-S).

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The V1504 switchers have a built-in self-check routine. When the switcher is powered up, after all connections have been completed, the self-check routine "examines" the switching system. If problems exist in the connections, all the LEDs on the master module flash.

Switcher functions are indicated by the model number suffix. The letter T identifies the terminated or nonlooping version, and L indicates that the switcher has the ability to loop out video signals to other video equipment. In addition, an -M or -S in the model number indicates master or slave circuitry. All Phase Eight equipment accommodates color as well as black-and-white video input.

Each switcher is designed to provide access to a video circuit while preserving the termination of the other circuits connected to the unit. Unused circuits should be terminated with the standard 75-ohm connection to prevent picture degradation or unwanted video reflections which create "ghosts."

Nonlooping switchers provide termination at each video connection. Looping switchers feature high impedance termination and provide an output connector for each video input. Since all video sources must be terminated, the outputs of a looping switcher should be terminated at some other point in the CCTV system. Systems using looping switchers redistribute the video signals, and may be connected to other switchers for scene selection at another remote site. The final device, however, must include 75-ohm termination for each camera line.

These switchers employ the vertical interval switching principle, which requires that the cameras in the system also be synchronized to the vertical interval for roll-free viewing. The sync circuits of some camera models may be line-locked to the AC frequency of the power lines. Correct synchronization for vertical interval switching may be accomplished by properly setting the vertical phase adjustment of all such line-locked cameras in a system. Also, an independent external sync source such as a sync generator may be used if the cameras have genlocking ability.

When the system includes a VCR, the use of synchronized cameras is highly recommended to prevent the loss of video information and to ensure the highest quality of recorded image.

Each slave module is equipped with an internal DIP switch which will be used to select the slave address. Slave units will be scanned in address numerical order, regardless of the order in which they are installed. An important feature of the circuitry is an extremely high resistance to noise from power lines. In extreme conditions, however, it is recommended to install a line filter between the power source and the line cord.

The switcher modules may be mounted in one of three ways: (1) The VP8RK is a steel card-cage rack to be mounted in a 19-inch instrument rack. It holds eight single-width Phase Eight modules. (2) The V8DTB-2 desk-top enclosure is a cast-iron-gray plastic housing that provides an attractive, finished appearance for Phase Eight modules. It can house up to eight single-width modules. (3) The V4DTB-4 desk-top enclosure is similar to the V8DTB-2 except that it has a capacity of four modules.

This device has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules. The V1504 switchers comply with UL standard 1409.

NOTE: *The V1504 series of switchers is not compatible with earlier Phase Eight model series V154 switchers.*

ASSOCIATED EQUIPMENT AND ACCESSORIES

Model V754CTD Camera Source ID, Titler, Time and Date Generator: Provides a means of identifying a scene under surveillance by labelling the video image with a title, date, and time. Product Specification 574.

Phase Eight Racking and Desk-Top Enclosure Systems: A versatile collection allowing Phase Eight modules to be mounted in EIA standard 19-inch instrument racks or in desk-top installations. Product Specifications 416, 455, and 525.

TECHNICAL INFORMATION

ELECTRICAL

Input Voltage:	Refer to Table 1.
Power Consumption:	10 W maximum.
Heat Equivalent:	0.57 btu/min (0.14 cal/min). Note: These figures represent the conversion of 100% of the electrical energy to heat. Actual percentage of the heat generated will be less and will vary from product to product. These figures are provided as an aid in determining the extent of cooling required for an installation.
Line Cord:	Standard 3-conductor, SV No. 18 AWG cable with grounding plug.
Fuse:	120 V model: 1/2 A 3AG, slo-blo. 230 V model: 1/4 A 3AG, slo-blo.
Power Line Noise Resistance:	2500 V or greater.
Electrostatic Discharge Resistance:	14,000 V or greater.
Switching Time:	Less than 20 microseconds.
Switching Interval:	0.5 to 60 seconds.
Safety Standard:	UL 1409.
Radio Frequency Emission Standards:	FCC Class A.

VIDEO

Input Impedance:	Terminating: 75 ohms. Looping: 10 kohm.
Maximum Video Signal:	2 V p-p.
Input to Output Isolation:	Typically 40 dB at 3.58 MHz.
Bandwidth:	10 Hz to 10 MHz.
Video Gain:	Unity.

Crosstalk: Typically 40 dB at 3.58 MHz.

Hum and Noise: Typically 55 dB (ref. to 1 V rms to 3.58 MHz).

CONTROLS AND CONNECTORS

Video Connectors: BNC (UG-1094).

Dwell Setting: Front panel potentiometer.

Switches: Momentary pushbutton.

Indicators: Power (Master): red LED.
Hold/Scan: 4 red LEDs.
Pass: 4 amber LEDs.

MECHANICAL

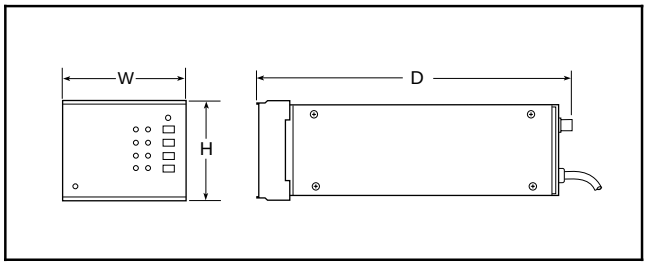
V1504L-M ONLY

Size: Double width.

Overall Dimensions: Height (H): 3.5 in. (8.9 cm).
Width (W): 4.3 in. (10.9 cm).
Depth (D): 10.9 in. (27.7 cm).

Weight: 3.0 lb. (1.4 kg).

Construction: Aluminum frame, black molded-plastic front panel, black polycarbonate bezel.



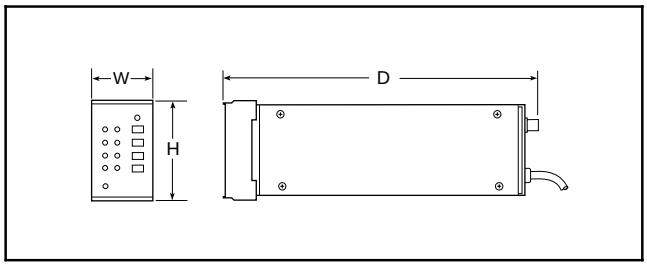
V1504T-M, V1504L-S

Size: Single width.

Overall Dimensions: Height (H): 3.5 in. (8.9 cm).
Width (W): 2.1 in. (5.4 cm).
Depth (D): 10.9 in. (27.7 cm).

Weight: V1504T-M: 2.7 lb (1.2 kg).
V1504L-S: 1.2 lb (0.5 kg).

Construction: Aluminum frame, black molded-plastic front panel, black polycarbonate bezel.



ENVIRONMENTAL

Operating Temperaure Range: 32 to 120° F (0 to 49° C).

Operating Humidity Range: 10 to 90% relative, noncondensing.