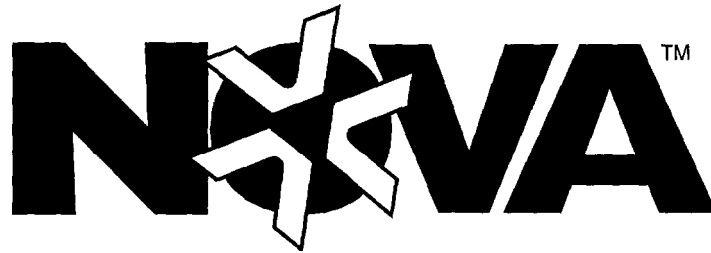


**X826**



**VI 422'" CPU-Based Control  
and Switching System**

VICON INDUSTRIES INC. 89 ARKAY DRIVE, HAUPPAUGE, NY 11788



# **Installation & Operation Manual**

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# NOVA VI422 Installation and Operation Manual



## NOVA VI 422 CPU-Based Control and Switching System

CE

**A** Warning: To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

Vicon Industries Inc. does not **warrant** that the functions contained in this equipment will meet your requirements or that the operation will be entirely error free or perform **precisely** as described in the documentation. This system has not been designed to be used in life-critical situations and must not be used for this purpose.

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Vicon Part No. **8006-8826-01-00** Section 11 Rev 798



Dear Valued Customer:

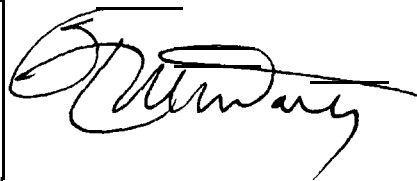
Thank you for selecting Vicon systems and products for your video needs.

Since Vicon's beginning in 1967, our only business has been the design, engineering, and production of the highest quality video systems and equipment for use in a wide variety of security, safety, control, surveillance, and communication applications.

We stand behind the quality and dependability of every product with an industry leading Beneficial Use warranty.

If you are not satisfied with a Vicon product or service, I would like to know. Your complete satisfaction is the mission of every Vicon employee.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth M. Darby", with a stylized flourish at the end.

Kenneth M. Darby  
President

# FCC Notice

**Note:** *Complies with Federal Communications Commission Rules & Regulations Part 15, Subpart B for a Class A digital device.*

## WARNING

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instruction, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class A computing device in accordance with the specification in subpart B of part 15 of the FCC rules, which are designed to provide reasonable protection against such interference in a commercial installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient the receiving antenna.
- Relocate the equipment with respect to the receiver.
- Relocate the equipment away from the receiver.
- Plug the equipment into a different electrical outlet so that the equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

"Interference Handbook, Bulletin CIB-2"

This booklet is available from the US. Government Printing Office, Superintendent of Documents, Mailstop SSOP, Washington, D.C. 20402-9328, ISBN O-1 6-045542-1.

**⚠ Warning:** *Power must be removed from this unit before removing circuit modules or ribbon cables.*

**⚠ Caution:** *This unit contains circuit cards with integrated circuit devices that can be damaged by static discharge. Take all necessary precautions to prevent static discharge.*

# Coaxial Cable Recommendations

Coaxial cables used to route video signals to and from the unit must meet the video recommendations discussed in this section.

**A Caution:** *Careful selection of the proper cable is essential to obtain the best performance from this equipment. Vicon assumes no responsibility for poor performance when cables other than those recommended are installed. In all cases, coaxial cable impedance should be 75 ohms.*

## Materials

Use only cable with a pure copper center conductor. Do not use cable with either a copper-plated steel or an aluminum center conductor because these do not transfer signals effectively in the frequency range used in CCTV networks. A center conductor with low DC resistance is required for effective CCTV operation.

Solid-core bare copper conductor is best suited to video applications, except where flexing occurs. If

the coaxial cable will be subjected to flexing during normal use, select a cable with a stranded center conductor.

The preferred dielectric material is cellular (foam) polyethylene. It has better electrical characteristics than solid polyethylene, but is more vulnerable to moisture. Therefore, use only solid polyethylene dielectric cable with a heavy exterior insulation in applications subject to moisture. The shield must be copper braid providing 95% or better coverage.

## Cable Types

The most commonly used cable types are RG-59/U and RG-11/U. Each is a family of cables with widely varying electrical characteristics, some of which are not suitable for CCTV applications.

Choose a cable type by referring to the characteristics and maximum distances listed below. You may exceed the maximum distances by using video amplifiers to boost the video signal. Materials and construction must follow the guidelines above. Note that "BC" refers to bare copper and "TC" refers to tinned copper.

Recommended Coaxial Cable Types

Cable Type	Belden Type No.	Alpha Type No.	West Penn Type No.	Type Center Conductor	Type Shield and % Coverage	DC Resistance per 1000 feet (km)	Max Distance for Best Picture ft (m)
RG-11U	8213	9847	811,4811	14 Solid BC	BC braid (95%)	2.6 (8.5)	820 (250)
RG-6U	9248	9804C	806,4806	18 Solid BC	Foil + 61% TC braid (100%)	7.5 (24.6)	530 (160)
RG-59/U	8281	9803	815	20 Solid BC	2 TC braids (96%)	9.9 (32.5)	400 (120)
RG-59/U	9259	----	816	22 Strand BC	BC braid (95%)	15.0 (49)	400 (120)
RG-59/U	9659	----	----	22 Strand BC	BC braid (95%)	15.0 (49)	400 (120)

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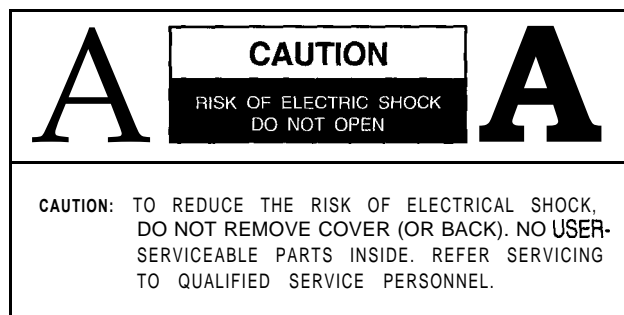
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# Important Safeguards

## GRAPHIC SYMBOL EXPLANATION

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the unit.

**1. Read Instructions** ▪ All the safety and operating instructions should be read before the video product is operated.

**2. Retain Instructions** ▪ All the safety and operating instructions should be retained for future reference.

**3. Heed Warnings** ▪ All warnings on the video product and in the operating instructions should be adhered to.

**4. Follow Instructions** ▪ All operating and use instructions should be followed.

**5. Cleaning** ▪ Step **a** applies to equipment that can be disconnected from the CCTV system without seriously jeopardizing security. Step **b** applies to equipment that must operate continuously such as video switching equipment at military installations.

a. Disconnect this video product from its power source before cleaning. Do not use caustic, abrasive, or aerosol cleaners. Use a damp cloth for cleaning.

b. Use a damp cloth to clean the equipment. Do not allow moisture or liquids to enter any vents. Do not use caustic, abrasive, or aerosol cleaners.

**6. Attachments** ▪ Do not use attachments not recommended by Vicon as they may cause hazards.

**7. Water and Moisture** ▪ Do not use this video product in any location where it may be exposed to water or moisture. This does not apply to outdoor camera housings, outdoor pan-and-tilt drives, and other equipment designed for direct exposure to outdoor environments.

**8. Accessories** ▪ Do not place this video product on any unstable surface or table. The video product may fall, causing serious injury to a person and serious damage to the video product. Use only with a mounting accessory recommended by Vicon, or sold with the video product. Any mounting of the video product should follow Vicon's instructions, and a mounting accessory recommended by Vicon should be used.

**9. Ventilation** ▪ Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the video product and to protect it from overheating, and these openings must not be blocked or covered. The openings should never be blocked by placing the video product on a rug or other similar surface. This video product should never be placed near or over a radiator or heat register. This video product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or Vicon's instructions have been adhered to.

**10. Power Sources** ▪ This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your installation site, consult your Vicon dealer or local power company. For video products intended to operate from battery power, or other sources, refer to the operating instructions.

**11. Grounding** ▪ This applies to video products equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug only fits into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

**12. 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 video product.

**13. Outdoor Cable Grounding** ▪ If an outside cable system is connected to the video product, be sure the cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70-1984, provides information with respect to proper grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

**14. Lightning** ▪ For added protection for this video product when it is not used for long periods of time, disconnect it from its power source and from the cable system. This prevents damage to the video product due to lightning and power-line surges.

**15. Power Lines** ▪ An outside cable system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside cable system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

**16. Overloading** ▪ Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

**17. Object and Liquid Entry** ▪ Never push objects of any kind into this video product 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 video product.

**16. Servicing** ▪ Do not attempt to service this video product yourself as opening or removing covers may

expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

**19. Damage Requiring Service** ▪ Disconnect this video product from its power source and refer servicing to qualified service personnel under the following conditions. Note that step c does not apply to outdoor camera housings, outdoor pan-and-tilt drives and other equipment specifically designed for direct exposure to outdoor environments.

- a. When the power-supply cord or plug is damaged.
- b. If liquid has been spilled, or objects have fallen into the video product.
- c. If the video product has been exposed to rain or water.
- d. If the video product does not operate normally by following the operating instructions, Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
- e. If the video product has been dropped or the cabinet has been damaged.
- f. When the video product exhibits a distinct change in performance -this indicates a need for service.

**20. Replacement Parts** ▪ When replacement parts are required, be sure the service technician has used replacement parts specified by Vicon or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

**21. Safety Check** ▪ Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.

# Installation

## Introduction

The NOVA V1422™ Digital Control and Switching System is a self-contained, full-featured CCTV controller which may be used with up to 32 camera stations and 8 monitor stations. The camera stations may contain either NOVA (VPS™) or Vicoax® receivers. NOVA receivers may be connected in either simplex mode, which uses command lines only, or duplex mode, which provide command and response communication between receivers and the V1422. The V1422 may also communicate with Vicoax receivers, which transmits both video and control signals over coaxial cable. Vicoax and NOVA (simplex mode) receiver connections provide a less expensive cabling cost than duplex communications.

The Vi422 contains a built-in alarm interface for 32 alarm inputs and allows 32 receiver alarms. An auxiliary device may be programmed to activate or deactivate during an active alarm. The common use of this feature is to connect a VCR to the V1422, which is used to record alarm video. Alarm reports may be printed using a serial line printer. A relay/audio switcher may be connected to the V1422, permitting simultaneous audible and visual indication of alarms. The Vi422 contains advanced operating and programming features, such as the ability to define, recall, and schedule tours. Tours are sequences of video displays, each with a unique dwell time, pan-and-tilt position, zoom and focus.

Ten keypads may be used in the system (8 remote keypads, the local keypad, and the host computer). Remote keypads include Vicon's Intelligent Control Panels V1300X-DVC and V1300X-RVC and a personal computer with ProTech® V1300X-PACP software installed. The V1300X-PACP software allows the user to control CCTV equipment using the PC monitor and keypad. The local keypad is the front panel of the V1422. The host computer is used to control CCTV equipment using ProTech software or any other RS-232 drivers. The graphical interface panels used with ProTech software may contain video images, building layouts, and keypad simulations in order to provide a graphic representation of the CCTV site.

Table 1  
Maximum System Components

Component	Maximum Number	
Receivers	32	
Monitors	8	
Remote Keypads	8	
Alarms: Local	3	2
Receiver	32	
Auxiliary (Alarm) Device	1	
Host Computer/RS-232	1	
Alarm Printer/RS-232	1	

The *Installation* section of this manual describes the connection of devices to the V1422 control system. A system overview, the tools needed, cables required, contents of the accessory kit, and complete installation procedures are provided. Refer to the following Vicon manuals if necessary:

- Relay/Audio-Follow-Video Switcher Instruction Manual X537
- Models V1300X-DVC and -RVC Intelligent Remote Control Panels X777
- Vi 300X-PACP ProTech® PACPro PC Add-On Control User's Manual X860
- Appropriate Vicon receiver instruction manual.

Printer, computer, auxiliary device and alarm device instruction manuals may also be needed.

The V1422 requires 90-265 VAC, 50-60 Hz input power. The unit's dimensions are: height, 3.5 in. (8.9 cm); width, 17.4 in. (44.2 cm); and depth, 11.9 in. (30.2 cm). The maximum width of 19.0 in. (48.3 cm) includes the two brackets which are normally installed for rack-mounted units. The maximum depth of 13.5 in. (34.3 cm) includes the distance from the tip of the joystick to the end of the BNCs. The tilt stand, used in desk-top mode, is 1 .125 in. (2.9 cm) high.

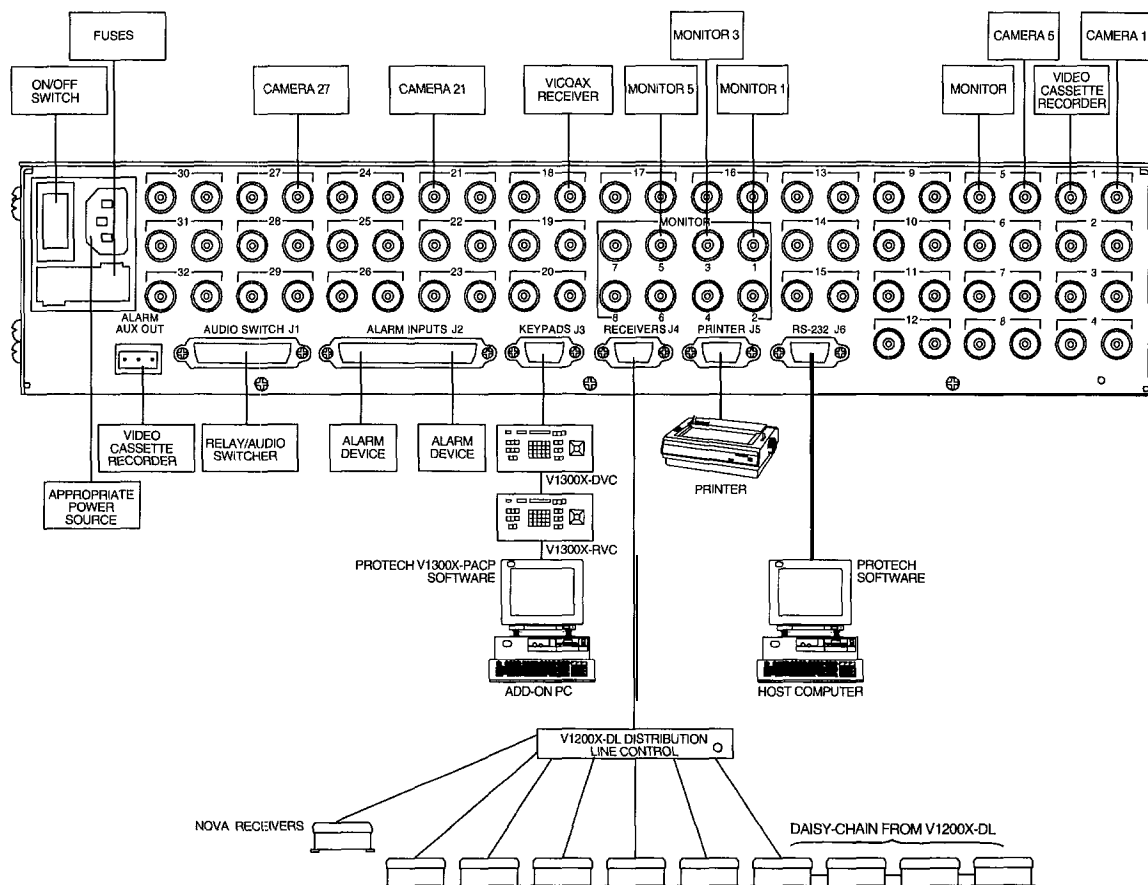
Installation procedures contained in this manual should only be performed by a qualified technician using approved materials in accordance with national, state and local wiring codes. Read these instructions completely before attempting installation. The unit complies with FCC standards for a Class A device and with European Community EMC Directive 89/336. The product was subjected to the testing outlined in European Normalization Standard EN 50081-I (Electromagnetic Compatibility - General Emissions Standard Part 1: Residential, Commercial and Light Industry), and EN 50082-I (Electromagnetic Compatibility - Generic Immunity Standard Part 1: Residential, Commercial, and Light Industry).

---

## System Overview

A V1422 system is comprised of receivers, camera stations, alarm devices, video cassette recorders (VCRs), relay/audio switchers, an alarm report printer, personal computers (PCs), and other CCTV-related equipment. A typical system is shown in Figure 1. This sample system contains:

- 10 NOVA and 1 Vicoax receivers, each may have enabled receiver alarms
- 1 V1 200X-DL Distribution Line Control
- 4 cameras
- 4 monitors, 1 of which only displays video from camera 5
- 2 VCRs, one used for recording alarm video and one that can only record video from camera 1
- 1 relay/audio switcher
- 3 keypads (1 V1300X-DVC, 1 V1300X-RVC, 1 PC with ProTech software installed)
- 2 local alarm devices
- 1 printer, used to automatically print alarm reports
- 1 host computer containing ProTech software.



**Figure 1**  
**Sample V1422 System**

This example does not use the maximum number of system components allowed in a Vi422 system. The maximum number of system components is listed in Table 1.

## Tools Required

Vicon does not supply the tools needed in the installation process. The following tools are required:

- crimp tool AMP 90302-I or 90312-I
- wire stripper
- standard hand tools.

If a contact pin is inserted into the wrong connector receptacle, the following tool will be required to remove the pin:

- AMP extractor tool 91067-3.



# Accessory Kit

The contents of the accessory kits are shown in Table 2. These items will be used during installation procedures as discussed in the appropriate sections.

**Table 2**  
**Contents of Accessory Kits**

Item	Purpose	Qty	Vicon Part No.
Screwlock Kit	Secures connection to 37-pin connector.	1	8002-9338-01-00
37-Pin Connector-Contacts	Connector for J2 (alarm inputs). Used in the 37-pin connector.	1 37	8000-8593-01-00 8000-9571-00-00
Screw Retainers -- 9-Pin Connectors	Secures connection to 9-pin connector. Connectors for J3 (keypads), J4 (receivers), J5 (printer), and J6 (RS-232). An inner shield and an outer shield are included for each connector.	5 4	8000-8595-01-00 8000-8595-00-00
Contacts	Used in 9-pin connectors.	36	8000-9571-00-00
Ferrule	Reinforces cable-to-connector junction. Used with 37-pin connector.	1	8000-8594-01-00
Ferrules	Reinforces cable-to-connector junction. Used with 9-pin connectors, cable diameter 0.165-0.190 inches.	2	8000-8594-00-00
Ferrules	Reinforces cable-to-connector junction. Used with 9-pin connectors, cable diameter 0.284-0.324 inches.	2	8000-8594-05-00
Ferrule	Reinforces cable-to-connector junction. Used with 9-pin connectors, cable diameter 0.324-0.375 inches.	1	8000-8594-02-00
Left Foot	Mounting accessory for tilt stand.	1	8002-7305-00-00
Right Foot	Mounting accessory for tilt stand.	1	8002-7305-01-00
Screws 6-32x7/16	Attaches the mounting feet to the V1422.	4	8003-8113-60-00
Brackets	Mounts V1422 to equipment rack.	2	1291-5022-02-00
Screws 10-32x5/16	Attaches brackets to the V1422 for use in rack-mounted systems.	4	8003-7338-02-00
Rubber Feet	Protects contact surfaces. Adhesive-backed.	2	8000-8118-01-00
Power Cords	Connects the V1422 to an appropriate power source.	2	1806-5249-03-00 (120 VAC) 1806-5294-02-00 (240 VAC)
Fuse (5A, 32V, 3AG)	Replacement fuse. See page 37,	1	8001-7320-02-00
Terminal Block	3-pin terminal block plugs into Alarm Aux Out connector.	1	8004-7991-01-00
Terminators	Terminates unused BNC connectors, 75 ohm.	32	1806-5088-01-00
Bracket Facings	Adhesive-backed cover for bracket (outer holes used).	2	1291-5029-01-00
Bracket Facings	Adhesive-backed cover for bracket (inner holes used).	2	1291-5029-02-00
Tilt Stand	Elevates the V1422 for easier access.	1	1251-5237-01-00

---

## Cable Recommendations

Vicon recommends specific cable types for connections to keypads, receivers, printer, host computer, and for connections requiring coaxial cables.

### Power Cabling

The power cords are supplied by Vicon. The accessory kit will contain 120 VAC and 230 VAC power cords.

### Alarm Auxiliary Equipment Cabling

An auxiliary device may be connected to the V1422 for alarm operation. This dry-contact relay device, typically a VCR, is programmed to activate or deactivate during an active alarm. For example, a VCR could record video if an alarm in a high-security area is activated. This function is specified during configuration file development, as discussed in *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*.

A VCR is one example of an auxiliary device that could be connected to the V1422. Since a variety of devices could be used as the auxiliary device, Vicon does not recommend specific cables. The device which will be used as the auxiliary equipment must not exceed the relay rating of 0.5 amperes, 30 volts and must be a non-inductive load.

### Audio Switcher Cabling

The V1422 may be connected to Vicon's V1332AF or V2332AF Relay/Audio-Follow-Video Switchers. Use of a relay/audio switcher allows audio and video signals to be switched simultaneously, as the V1422 includes an internal video switching system. For example, the audio signal from an intercom microphone associated with a camera can be switched to a speaker at the guard station at the same time the video is switched to the guard's monitor.

One ribbon cable is required to connect the V1422 to a relay/audio switcher. This cable is included with the V1332AF or V2332AF Relay/Audio-Follow-Video Switcher.

### Local Alarm Cabling

Local alarms are wired directly to jack J2 on the V1422 rear connector panel. These local alarms do not include alarms which are connected to receivers. (Receiver alarm signals are communicated to the V1422 through receiver jack J4, unless the receiver is a Vicoax receiver, then they are transmitted through a video cable.)

One two-conductor cable will be needed per alarm device. The wire gauge and specific type of cable are not specified by Vicon, however, the total loop resistance of the cable must be less than 1.5 Kohms.

## Video Cabling

The video signals from cameras are carried via coaxial cable meeting the recommendations in the front of this manual. One coaxial cable will be required per camera. If the video signals from cameras will be routed to other CCTV equipment, one additional cable will be required per connection. The V1422-end of the coaxial cables must be terminated with a male BNC connector.

An additional coaxial cable terminated with a male BNC connector is required for each monitor connection. Up to eight monitors may be used in a Vi422 CCTV system.

### ***VideoControl Cabling***

Vicoax communication uses the same coaxial cable to transmit video and control signals. The following table lists the Vicon-recommended cable types and maximum operating distances for Vicoax communication.

**Table 3**  
**Vicoax Cable Maximum Operating Distance**

<b>Cable Type</b>	<b>Maximum Distance ft (m)</b>
RG-11/U	3000 (900)
RG-59/U	1500 (450)

## Control Cabling to Keypad Jack J3 and Receiver Jack J4

The appropriate cable used for communications between the V1422 and a CCTV system component depends upon the distance between the two units. Table 4 lists six Vicon-recommended cable types and the corresponding maximum operating distances. All cable types in Table 4 are dual cable except Belden 9182. Dual cable contains two sets of cables which are shielded to prevent communications between the two sets. Response signals are transmitted in one set and command signals are transmitted in the other set. Each set contains two conductors, which are individually shielded, and a ground. Therefore a dual cable has six conductors: two conductors plus a ground in each of two sets of conductors. Belden 9182 is not dual cable - it contains two individually-shielded conductors and a ground for a total of three conductors.

**Table 4**  
**Individually-Shielded, Twisted-Pair Cable**  
**Maximum Operating Distance**

<b>Cable Type</b>	<b>Maximum Distance ft (m)</b>
Belden 9406	5000 (1500)
Belden 9402	5000 (1500)
Belden 8723	8000 (2400)
Belden 8162	15,000 (4600)
Belden 9729	15,000 (4600)
Belden 9182	25,000 (7600)

## Keypad Jack J3

Referring to Table 4, choose the appropriate cable type per the maximum operating distance between the keypad (or distribution line control) and the VI 422.

The number of cables required depends upon the cable type. One cable will be required for any cable type in Table 4 except for Belden 9182. Because Belden 9182 contains only three conductors and six connections are required, the choice of Belden 9182 will mandate the use of two cables.

## Receiver Jack J4

Referring to Table 4, choose the appropriate cable type per the maximum operating distance between the receiver (or distribution line control) and the Vi 422.

The number of cables required depends upon the communications mode. Simplex communications require the use of command lines only, which enable the Vi422 to communicate with the receiver but do not allow receiver responses to be returned. Both response and command lines are connected for duplex mode, which allows two-way communications between the Vi422 and receiver. For example, receiver alarm and communication failure messages can display on the Vi422 local keypad LCD window if response lines have been connected.

Choose either simplex or duplex operation and refer to the appropriate following section for the number of cables required.

***Note: Advanced features such as touring and sector titling require duplex operation.***

### ***Simplex Operation***

Because simplex mode requires only three connections (command lines only), dual cable is not required. One Belden 9182 cable will be required to connect the receiver or distribution line control to the Vi422 in simplex communications mode. As shown in Table 4, these units may be located up to 25,000 feet apart using this cable.

### ***Duplex Operation***

Both command and response connections are required for duplex operation. One cable will be required for duplex operation for any cable type chosen from Table 4 except for Belden 9182. Because six connections are required for duplex operation and one Belden 9182 cable contains only three conductors, two cables are required if Belden 9182 is used.

## Cabling to Printer Jack J5 and Host Computer Jack J6

The Vi422 rear connector panel includes two RS-232 ports. Jack J5 is used to transmit alarm reports to a serial line printer. A host computer may be connected to jack J6. Vicon's ProTech software may be installed on the host computer to provide a graphic means of controlling and monitoring camera stations. Alternatively, the NOVA command set may be used to communicate with the Vi422 without the ProTech software, as discussed in ***NOVA Vi422 Host Computer Interface Software Instruction Manual*** X678. The host computer may also be used to develop the configuration file.

One Belden 9536 cable will be required to connect the printer to the Vi422 at an approximate distance of six feet. One Belden 9536 cable will be required to connect the host computer to the Vi422.

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## Installing the Tilt Stand

The V1422 may be mounted in a rack or used on a desk-top. A tilt stand is included in the accessory kit to elevate the V1422 when used in desk-top mode. The tilt stand is shown in Figure 9 on page 23 of the *Operation* section in this manual. The tilt stand locks in position for elevation or folds flat against the bottom of the unit when elevation is not required. Perform the following procedure to install the tilt stand.

1. Select the following from the accessory kit:
  - tilt stand
  - right mounting foot for tilt stand
  - left mounting foot for tilt stand
  - four 6-32x7/16 screws
  - two square adhesive-backed rubber feet.
2. Two sets of screw holes on the bottom of the V1422 will be used to mount the tilt stand feet. These holes are located approximately 1 inch from the front panel of the V1422 and are approximately 8 inches apart from each other. Choose the right mounting foot (identified in Figure 2) and attach it to the right set of holes using two of the 6-32x7/16 screws from the accessory kit.

**Note:** *When the tilt stand is not in use, it will fold flat against the bottom V1422 panel. Choosing the right and left mounting feet as identified in this section will orient the tilt stand to fold toward the rear connector panel. In order to fold the stand toward the front of the V1422, install the feet on the opposite sides of the V1422. For example, in step 2, choose the right mounting foot as identified in Figure 2, but install it on the left side of the unit.*



**Figure 2**  
**Right and Left Mounting Feet for Tilt Stand**

3. Insert one end of the tilt stand into the groove of the installed right mounting foot. Insert the other end of the tilt stand into the left mounting foot and position the left mounting foot over the left set of screw holes. Using the remaining two 6-32x7/16 screws, attach the left foot to the V1422.
4. Remove the adhesive backing from the square rubber feet and attach them approximately 12 inches apart and approximately 1 inch from the rear connector panel of the V1422.

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## Installing the Brackets

The Vi422 may be used in desk-top mode or mounted in a standard 19-inch equipment rack. Refer to *Introduction* for the unit's physical dimensions. The V1422 may be secured in an equipment rack using the two brackets included in the accessory kit. Perform the following procedure to attach the brackets.

1. Select the following from the accessory kit:
  - 2 brackets
  - 4 10-32x5/16 screws
  - 4 bracket facings.
2. The brackets should be attached to the sides of the V1422, using 2 10-23x5/16 screws at each side. Refer to Figure 9 on page 23. Attach the brackets to the rack using two screws of the appropriate size in either the inner or outer set of holes. The screws for this step are not provided by **Vicon**. Note that depending upon the rack, it may be more convenient to delay this step until all installation procedures are performed.
3. Bracket facings are used to obscure the unused bracket holes. Two sets of bracket facings are provided, depending on which set of holes is used. Remove the adhesive backing from the appropriate bracket facings and adhere one to each bracket.

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## Connections

This section describes power and equipment connections to the V1422. Read *Important Safeguards* on page vii before proceeding. Follow the directions in *Cable Recommendations* to choose Vicon-approved cables. Figure 3 illustrates the VI 422 rear connector panel.

**A Warning:** Do not connect any system component to a power source until directed. Check that the fuse is in the 120 V side of the fuse drawer. Regardless of input power, the fuse must be in the 120 V side of the drawer. Note that the 120 V side of the fuse drawer is on the right when viewed from the rear of the unit.

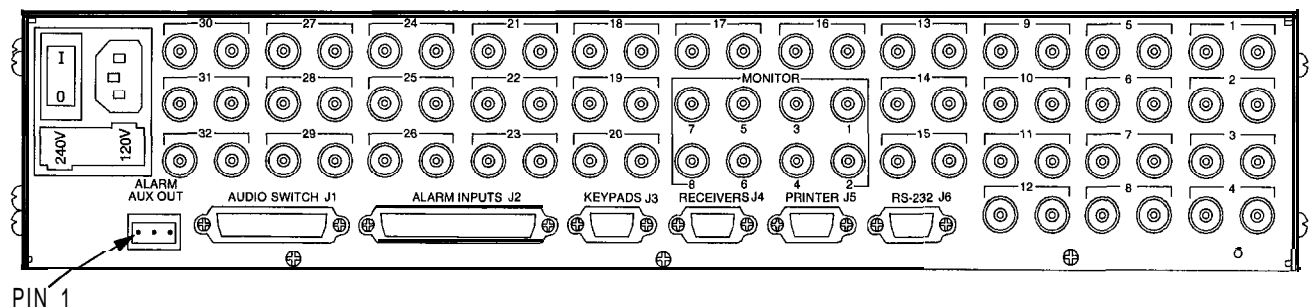


Figure 3  
V1422 Rear Connector Panel

## Power Connections

Perform the following procedure to connect the power cord to the V1422.

**(a Warning: Do not connect the power cable to the power source until instructed to do so.**

1. Select the power cable from the accessory kit.
2. Plug the power cable into the power connector on the V1422 rear connector panel. Refer to Figure 3.

## Video Input/Output Connections

The video signals used to monitor remote CCTV sites are routed from each camera to the V1422 via coaxial cable. Perform the following procedure to provide video inputs to the V1422 and to route video from the V1422 to external CCTV equipment. Up to 32 cameras may be connected to the V1422. Refer to Figure 3.

**Note: Monitor connections are discussed in the following section. Video receiver connections are discussed on page 18.**

1. Route a properly terminated coaxial cable between each camera and the V1422.
2. Two BNC connectors are present on the V1422 rear connector panel for each camera. A number is labeled above each pair of connectors. Either connector may be used. Connect a cable from the video output connector of each camera to one of the BNC connectors. Note the number for each camera.
3. If video signals will be routed from the V1422 to other CCTV devices, route one coaxial cable between each device and the V1422. Connect one end of each cable to one of the BNC connectors on the V1422 rear connector panel.
4. Unused BNC connectors must be terminated with a 75 ohm terminator. Refer to page 21.

## Sync Source

If the V1422 was programmed to use camera 32 as the synchronization source (refer to *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*), a camera must be connected to one of the BNC connectors labeled "32". Note that the camera must be capable of performing this function (camera connectors must include a Sync Out BNC).

## Monitor Connections

Perform the following procedure to connect up to eight monitors to the V1422. These monitors may display video switched from any camera station (per camera-to-monitor partitioning, as discussed in the *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*).

**Note: Other monitors may be connected to the system, but each may only display video from one camera (Refer to step 3 of Video Input/Output Connections).**

1. Route a properly terminated coaxial cable between the V1422 and each monitor.
2. Connect the cable from each monitor's input connector to a BNC connector on the V1422 rear connector panel. Refer to Figure 3 on page 9. Note the number of the connector as labeled on the rear connector panel, as this connection defines the monitor number. If PC monitors will be used, connect the coaxial cable per the appropriate installation manual.

## Alarm Aux Connections

The auxiliary device connected to the Alarm Aux Out terminal strip may be connected as normally-open or normally-closed. Perform the following procedure.

1. Select the following item from the accessory kit:
  - . 3-pin terminal block.
2. Route the appropriate wires from the auxiliary device to the V1422.
3. Using wire strippers, remove approximately 0.25 in. (0.64 cm) from the two wires.
4. Note the position of pin 1 on the terminal block by referring to Figure 3 on page 9 (pin 1 is not identified on the removable terminal block).
5. Connect the wires from the auxiliary device to two of the three terminals, depending upon the action required by the auxiliary equipment (normally-closed or normally-open). Refer to Table 5. Pin 3 will be connected in either configuration. Tighten the screws on the removable terminal block to secure the wires.

**Table 5**  
**Alarm Aux Out Connections**

Pin No.	Connection
3	Common
2	NC (normally closed)
1	NO (normally open)

6. Plug the terminal block back onto the Vi422 rear panel.

## Relay/Audio Switcher Connections

As discussed in *Audio Switcher Cabling* on page 5, the Vi422 can be connected to the V1 332AF or V2332AF Relay/Audio-Follow-Video units in order to switch audio and video simultaneously.

Perform the following procedure to connect the Vi422 to an audio switcher.

1. The necessary ribbon cable is included with the Vicon V1332AF or V2332AF relay/audio switcher. Route the ribbon cable from the audio switcher to the Vi422.
2. The ribbon cable is terminated with the proper connectors. Plug the 25-pin male connector into Vi422 jack J1 . Refer to Figure 3 on page 9.
3. Follow the directions in *Relay/Audio-Follow- Video Switcher Instruction Manual X537* to connect the cable to the relay/audio switcher.



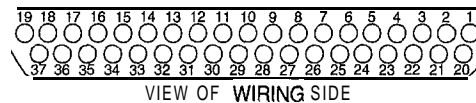
## Local Alarm Connections

The Vi422 supports up to 64 alarms, 32 local alarms and 32 receiver alarms. "Receiver" alarms are alarm devices connected to receivers. The alarm status from receiver alarms is communicated to the V1 422 through receiver jack J4. "Local" alarms are direct inputs from alarm devices and are connected to jack J2. Perform the following procedure to connect alarm devices to the alarm input jack.

1. Select the following from the accessory kit (note that the shields and ferrules are identified in Figure 5 on page 13):
  - 37-pin connector
    - inner and outer shields
    - ferrule (the largest one in the kit)
    - appropriate number of contact pins.
2. Route wires from each alarm device to the V1422.
3. Route the wires from all alarm devices through the largest ferrule available in the accessory kit (this ferrule is shown in Figure 5b).
4. Using wire strippers, remove approximately 0.25 inches (0.64 cm) of insulation from the alarm wires.
5. Using a crimping tool, attach a contact pin to each of the wires. Figure 7 on page 15 may be used as a guide, although the cable and pin configuration shown are not applicable for this section.

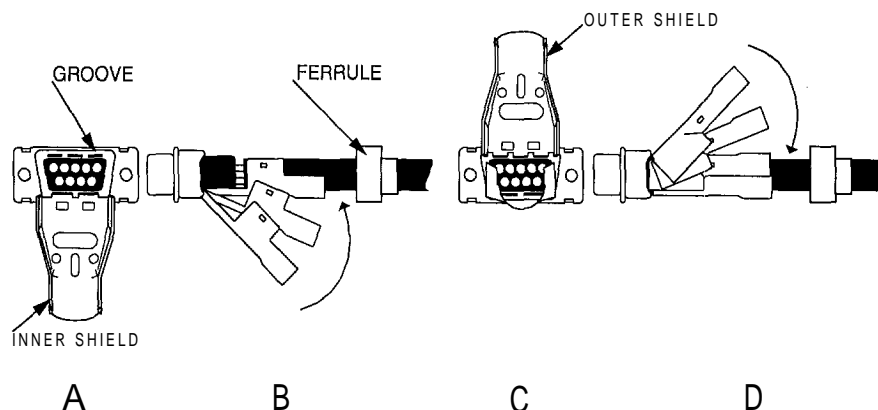
*Note: When directed, carefully insert the appropriate pin into the appropriate receptacle of the 37-pin connector. If a mistake is made, a special tool (AMP extractor tool 91067-3) must be used to remove the pin. Vicon does not supply this tool.*

6. Make the alarm input connections to the 37-pin connector by inserting the appropriate pin into the appropriate receptacle. Note that the pin number designates the alarm input used in V1422 programming and operation. For example, the alarm device connected to pin 28 is identified as alarm 28. Ground connections must be made to pins 33-37. Refer to Figure 4.



**Figure 4**  
**37-Pin Connector**

7. Insert the inner shield into the two grooves of the connector. Refer to Figure 5a. (Although Figure 5 illustrates a 9-pin connector with multiple-conductor cable, the steps are the same for the 37-pin connector.)
8. Close the shield. Insert the outer shield into the three grooves of the connector. Refer to Figure 5b and c. Close the outer shield. Refer to Figure 5d.
9. Slide the ferrule until it covers the end of the closed shields. Crimp the larger end of the ferrule.
10. Connect the assembled cable to jack J2 on the Vi422 rear connector panel. Refer to Figure 3 on page 9.
11. Connect the other end of the wires per the instruction manuals for the alarm devices.



**Figure 5**  
**Connector Assembly**

A) Inner shield is inserted into appropriate grooves. B) Inner shield is closed. Note position of the ferrule. C) Outer shield is inserted into the appropriate grooves. D) Outer shield is closed.

## Keypad Connections

Vicon's Intelligent Remote Control Panels V1300X-RVC and V1 300X-DVC may be used to control camera station functions such as pan, tilt, autoiris, autopan, lens speed, preset recall and store, etc. As shown in Table 6, up to ten keypads may be used with the V1422; however, only eight of these are remote keypads. Remote keypads are connected to the V1422 using jack J3.

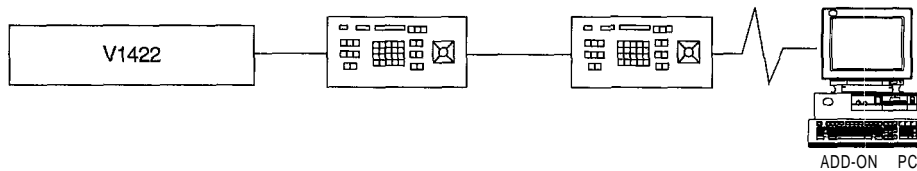
**Caution:** The V1300X-RVC and V1300X-D VC must be set to type 7300 to be used with the V1422. Note that these keypads default to type 1200. The type is set at the keypad (refer to Models V1300X-DVC and -RVC Intelligent Remote Control Panels Instruction Manual X777). Failure to set the keypad type correct will prevent any keypad commands from being executed by the V1422.

The V1300X-PACPACPro PC Add-On Control module may also be connected to keypad jack J3. This module is part of Vicon's ProTech product line and allows multiple personal computers (PCs) to be connected from the keypad jack. These "add-on PCs" can control camera stations using the PC keyboard, a mouse or touch screen monitor. The CCTV site is monitored using the PC monitor or a CCTV monitor located at the add-on PC. Vicon's ProTech software is used as a graphic interface between the user and the CCTV system, allowing the user to control camera stations using Windows™-based computer screens known as interface panels. Note that the total number of remote keypads is eight and includes add-on PCs, V1300X-RVCs and V1300X-DVCs.

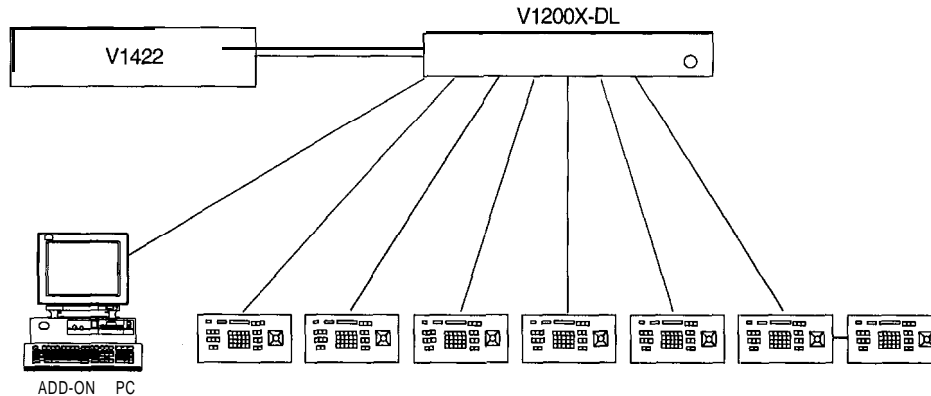
**Table 6**  
**V1422 Keypads**

Keypad No.	Identification	V1422 Jack
01-08	Remote keypads: V1300X-RVC V1 300X-DVC Add-On PC	J3
09	Local keypad: V1422 front panel	N/A
10	RS-232: Host computer	J6

Keypads may be connected to the V1422 in a star configuration or daisy-chain configuration. This subject is discussed in the appropriate keypad manuals. Figure 6 illustrates sample star and daisy-chain keypad configurations.



**KEYPADS DAISY-CHAINED TO CPU**



**STAR CONFIGURATION OF KEYPADS USING V1200X-DL**

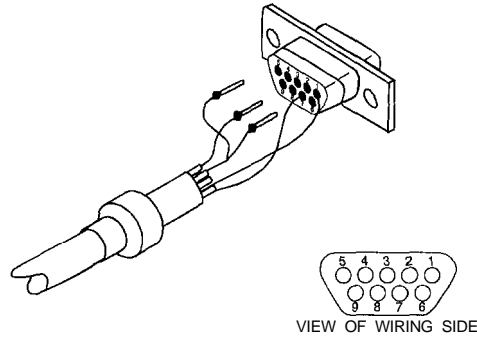
**Figure 6**  
**Sample Star and Daisy-Chain Keypad Configurations**

Perform the following procedure to connect remote keypads to the V1422.

1. Route the cable from the keypad or distribution line control. The keypad/distribution line control-end of the cable will be connected per the instruction manual for that unit.
2. Select the following from the accessory kit:
  - 9-pin connector
    - . outer shield
    - . inner shield
  - ferrule
    - . six contact pins.
3. Slip the ferrule over the V1 422-end of the cable. Refer to Figure 5b.
4. Using wire strippers, remove approximately 1.5 in. (3.8 cm) of outer insulation and shielding from the cable.
5. Using wire strippers, remove approximately 0.25 in. (0.64 cm) of insulation from each of the wires.
6. Using a crimping tool, attach a contact pin to each of the six conductor wires,
7. If connections have already been made at the remote keypad or distribution line control-end of the cable, perform step 8. If connections have not already been made at the keypad or distribution line control-end of the cable, perform step 9.
8. A chart containing the color of the conductor wires and the connection made with each conductor should have been created at the time of the remote keypad or distribution line control installation. If this chart does not exist, refer to the keypad, distribution line control, or add-on PC instruction manual and the physical connections to construct a chart.

Refer to Table 7 and carefully insert the appropriate pin into the appropriate 9-pin connector receptacle. Refer to Figure 7. For example, if a red conductor at the other end of the cable has been connected to response out +, the pin connected to the red conductor at the V1422-end of the cable should be inserted into receptacle 1, response in +. Complete the chart in Table 7.

**Note:** When directed, carefully insert the appropriate pin into the appropriate receptacle of the 9-pin connector. If a mistake is made, a special tool (AMP extractor tool 91067-3) must be used to remove the pin. Vicon does not supply this tool:



**Figure 7**  
**9-Pin Connector**

9. Refer to Table 7 and Figure 7 and insert a pin into each receptacle listed, using one conductor set in the dual cable for pins 1, 2, and 6, and one conductor set for pins 3, 7, and 8. If Belden 9182 was chosen, use one cable for pins 1, 2, and 6, and a second Belden 9182 for pins 3, 7, and 8. Complete the chart in Table 7 as it will be needed for connections to the keypad, distribution line control or PC connected to jack J3.

**Table 7**  
**Keypad Connections**

V1422 Signal Name	Keypad Signal Name	Receptacle Number	Color
Response in +	Response out +	1	
Ground (shield)	Ground (shield)	2	N/A
Command out -	Command in -	3	
Response in -	Response out -	6	
Command out +	Command in +	7	
Ground (shield)	Ground (shield)	8	N/A

10. Insert the inner shield into the grooves of the connector. Refer to Figure 5a on page 13.
11. Close the inner shield. Insert the outer shield into the grooves of the connector. Refer to Figure 5b and c.
12. Close the outer shield until the tabs snap over the tabs on the inner shield. Refer to Figure 5d.
13. Slide the ferrule until it covers the end of the closed shields. Crimp the larger end of the ferrule to the cable(s).
14. Connect the assembled cable to jack J3 on the V1422 rear connector panel. Refer to Figure 3 on page 9.

# Receiver Connections

## NOVA Receivers

**Note:** A terminator must be connected to receiver jack J4 if no receivers will be connected to it. Refer to the Vicoax installation procedure for more information.

Receivers convert the digital control signals from the Vi422 into drive voltages for camera station equipment. Camera station equipment may include the pan-and-tilt drive, lens, camera, auxiliary equipment, alarm device, etc. Up to 32 receivers may be used in a Vi422 system. Table 8 lists Vicon NOVA receivers which may be used with the V1422. NOVA receivers communicate with the control system through jack J4. The following section discusses receiver communication through video cabling. Refer to the appropriate receiver instruction manual or contact a Vicon sales representative for changes and updates to this list.

**Table 8**  
**NOVA Receivers**

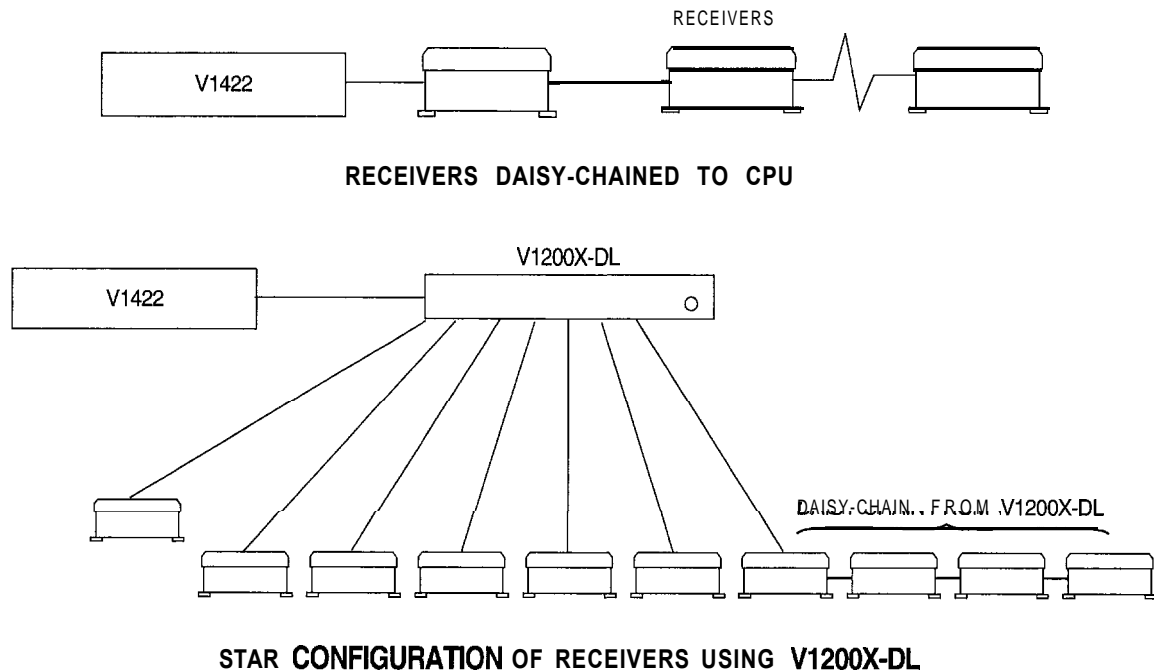
V1 300R, V1301 R
V1300R-PV, V1301 R-PV
V1310RB, V1311RB
V1319R
V15UVS
V7UVS Mini Dome
V1200R
V1200R-LM

**Note:** The V1300R-PV and V1301R-PV model numbers refer to the V1300R and V1301R receivers with the variable-speed option board installed.

NOVA receivers may be connected to the Vi422 in either duplex or simplex mode. Duplex operation requires the use of both command and response lines. Response signals are used to transmit information such as the activation of alarms and communication failures to the V1422. Command signals, which send control information from the CPU to the receiver, are always required. Simplex operation requires the use of command lines only. The operating mode must be chosen (or determined, for existing installations) before the following procedure can be performed.

**Note:** The advanced features of the V1422, such as sector tilting and touring, require duplex operation.

Jack J4 on the Vi422 rear panel will be connected to either a receiver or a distribution line control. The distribution line control allows multiple receivers to be connected radially from jack J4. Receivers may also be connected serially (daisy-chain configuration). Star and daisy-chain interconnections of receivers and distribution units are discussed in Vicon receiver instruction manuals. Two sample connections are shown in Figure 8. Perform the following procedure to assemble the connector and make the required connection.



**Figure 8**  
**Sample Star and Daisy-Chain Receiver Configurations**

**Note:** *If you have both NOVA and Vicoax receivers in your system, make sure that each receiver has a unique address. NOVA receiver addresses are defined by a DIP switch at the receiver and Vicoax addresses are defined by the video connection to the V1422.*

1. Route the cable chosen in **Cable Recommendations** from the receiver or distribution line control. The receiver/distribution line control-end of the cable will be connected per the instruction manual for that unit.
2. Select the following from the accessory kit:
  - 9-pin connector
    - outer shield
    - inner shield
  - ferrule
    - six contact pins.
3. Slip the ferrule over the end of the cable. Refer to Figure 5b on page 13.
4. Using wire strippers, remove approximately 1.5 in. (3.8 cm) of outer insulation and shielding from the cable.
5. Using wire strippers, remove approximately 0.25 in. (0.64 cm) of insulation from each of the conductor wires.
6. Using a crimping tool, attach a contact pin to each of the six conductor wires.
7. If connections have already been made at the receiver or distribution line control-end of the cable, perform step 8. If connections have not been made at the receiver/distribution line control-end of the cable, perform step 9.
8. A chart containing the color of the conductor wires and the connection made with each conductor wire should have been created at the time of receiver or distribution line control installation. If this chart does

not exist, refer to the receiver or distribution line control instruction manual and the physical connections at the terminal block or connector and construct a chart.

Refer to Table 9 and carefully insert the appropriate pin into the appropriate 9-pin connector receptacle. Refer to Figure 7. For example, if a red conductor at the receiver-end of the cable has been connected to response out +, the pin connected to the red conductor at the V1422-end of the cable should be inserted into receptacle number 1, which corresponds to response in +. Complete the chart in Table 9.

*Note: When directed, carefully insert the appropriate pin into the appropriate receptacle of the 9-pin connector. If a mistake is made, a special tool (AMP extractor tool 91067-3) must be used to remove the pin. Vicon does not supply this tool:*

*Note: Only command lines will be connected (pins 3, 7, and 8) for simplex mode.*

9. Refer to Table 9 and insert a pin into each receptacle listed, using one conductor set in the dual cable for pins 1, 2, and 6, and one conductor set for pins 3, 7, and 8. Refer to Figure 7 on page 15. If Belden 9182 was chosen, use one cable for pins 1, 2, and 6, and a second Belden 9182 for pins 3, 7, and 8. Complete the chart in Table 9, as it will be needed for connections to the receiver or distribution line control which will be connected to jack J4.

Table 9  
Receiver Connections

V1422 Signal Name	Connect to Receiver Signal Name	Receptacle Number	Color
Response in +	Response out +	1	
Ground (shield)	Ground (shield)	2	N/A
Command out -	Command in -	3	
Response in -	Response out -	6	
Command out +	Command in +	7	
Ground (shield)	Ground (shield)	8	N/A

10. Insert the inner shield into the grooves of the connector. Refer to Figure 5a on page 13.
11. Close the inner shield. Insert the outer shield into the grooves of the connector. Refer to Figure 5b and c.
12. Close the outer shield until the tabs snap over the tabs on the inner shield. Refer to Figure 5d.
13. Slide the ferrule until it covers the end of the closed shields. Crimp the larger end of the ferrule to the cable(s).
14. Connect the assembled cable to jack J4 on the V1422 rear connector panel. Refer to Figure 3 on page 9.

Vicoax Receivers

Vicoax receivers communicate over video cabling and, unlike NOVA receivers, do not require additional cabling for command responses. Table 10 lists the Vicoax receivers sold by Vicon at the time this manual was printed. Refer to the appropriate receiver instruction manual or contact a Vicon sales representative for changes and updates to this list.

Table 10  
Vicoax Receivers

V7UYS Mini Dome
V1319R
V1310RB, V1311RB

Perform the following procedure to connect Vicoax receivers to the V1422. Up to 32 receivers may be connected to the V1422. Refer to Figure 3.

**Note:** *If you have both NOVA and Vicoax receivers in your system, make sure that each receiver has a unique address. NOVA receiver addresses are defined by a DIP switch at the receiver, and Vicoax addresses are defined by the video connection to the V1422.*

1. If you are using the V7UVS Surveyor Mini Dome, select 1422 mode using the appropriate switch at the receiver. For other Vicoax receiver models, select Vicoax 1902 (may be referred to as "Vicoax", "Vicoax 1902" or "1902" in the receiver documentation) mode using the appropriate switch.
2. Route a properly terminated coaxial cable between each Vicoax receiver and the V1422.
3. Two BNC connectors are present on the V1422 rear connector panel for each Vicoax receiver. A number is labeled above each pair of connectors. Either connector may be used. Connect a cable from the video output connector of each receiver to one of the BNC connectors. Note the number for each receiver.
4. If no receivers were connected to jack J4 (i.e., you have no NOVA receivers connected to the V1422), terminate jack J4 by connecting pins 6 and 8 together using a 9-pin connector from the accessory kit.
5. If video signals will be routed from the V1422 to other CCTV devices, route one coaxial cable between each device and the V1422. Connect one end of each cable to one of the BNC connectors on the V1422 rear connector panel.
6. If a video input will not be used, terminate one of the BNCs for that video input with a 75 ohm terminator. Do not terminate both BNCs. Refer to page 21.

## Printer Connections

The V1422 includes an RS-232 port used to route alarm reports to a serial line printer. Perform the following procedure to connect a serial line printer to the V1422.

1. Route the cable chosen in **Cable Recommendations** from the serial printer to the V1422.
2. Select the following from the accessory kit:
  - 9-pin connector
  - inner and outer shields
  - ferrule
  - five contact pins.
3. Slip the ferrule over the V1422-end of the cable.
4. Using wire strippers, remove approximately 1.5 in. (3.8 cm) of outer insulation and shielding from the cable.
5. Using wire strippers, remove approximately 0.25 in. (0.64 cm) of insulation from each of the conductor wires.
6. Using a crimping tool, attach a contact pin to each of the five conductor wires.
7. Refer to Table 11 on page 20 and Figure 7 on page 15 and insert a pin into each receptacle listed. Complete the "Color" column in Table 11, as it will be needed for connections to the 9-pin or 25-pin serial port to the printer. Note that Vicon does not supply the parts needed to wire the connector at the printer-end of the cable.

**Note:** *When directed, carefully insert the appropriate pin into the appropriate receptacle of the 9-pin connector. If an error is made, a special tool (AMP extractor tool 91067-3) must be used to remove the pin. Vicon does not supply this tool.*



**Table 11**  
**RS-232 Connections (Printer and Host Computer)**

RS-232 Signal Name	V1422 J5 and J6 Pin No.	Pin No. for 9-Pin Printer and Host Computer Connector	Pin No. for 25-Pin Printer and Host Computer Connector	Color
TxD	2	2	3	
RxD	3	3	2	
RTS	5	8	5	
	4		4	
Ground	7	5	7	

8. Insert the inner shield into the grooves of the connector. Refer to Figure 5a on page 13.
9. Close the inner shield. Insert the outer shield into the grooves of the connector. Refer to Figure 5b and c.
10. Close the outer shield until the tabs snap over the tabs on the inner shield. Refer to Figure 5d.
11. Slide the ferrule until it covers the end of the closed shields. Crimp the ferrule's larger end to the cable.
12. Assemble the connector needed for the printer's 9- or 25-pin connector, referring to Table 11. Note that Vicon does not supply the parts needed to assemble this connector.
13. Connect the assembled connector to the chosen (9- or 25-pin) connector on the serial line printer. Connect the V1422-end of the cable to jack J5 on the V1422. Refer to Figure 3 on page 9.

## Host Computer Connections

The Vi422 can communicate with a computer through RS-232 jack J6 using commands as described in *NOVA V1422 Host Computer Interface Software Instruction Manual X678* or using Vicon's ProTech Graphic Command and Control software. Using either of these methods, the configuration file may be sent to or retrieved from a computer. As discussed in *NOVA VI422 CPU-Based Control and Switching System Programming Manual X834* a configuration file defines the CCTV components, expected responses, and user preferences to the control system. Using the ProTech software, a configuration file may be developed from user-friendly graphic screens. This information may then be sent to the Vi422 via the RS-232 jack J6 on the V1422 rear connector panel. This is an alternative method to creating a configuration file using the Vi422 menu-driven software discussed in *NOVA VI422 CPU-Based Control and Switching System Programming Manual X834*. The computer connected to jack J6 is referred to as the "host" computer.

The steps in this section should only be performed if the commands listed in *NOVA V1422 Host Computer Interface Software Instruction Manual X678* will be transmitted without using ProTech software.

1. Route the cable discussed in *Cable Recommendations* from the host computer.
2. Select the following from the accessory kit:
  - 9-pin connector
  - inner and outer shield
  - ferrule
  - five contact pins,
3. Slip the ferrule over the V1422-end of the cable. Refer to Figure 5b on page 13.
4. Using wire strippers, remove approximately 1.5 in. (3.8 cm) of outer insulation and shielding from the cable.

5. Using wire strippers, remove approximately 0.25 in. (0.64 cm) of insulation from each of the conductor wires.
6. Using a crimping tool, attach a contact pin to each of the five conductor wires.
7. Refer to Table 11 on page 20 and Figure 7 on page 15 and insert a pin into each receptacle listed. Complete the Color column in Table 11, as it will be needed for connections to the 9-pin or 25-pin serial port on the host computer. Note that Vicon does not supply the parts needed to wire the connector at the host computer-end of this cable.

*Note: When directed, carefully insert the appropriate pin into the appropriate receptacle of the 9-pin connector. If a mistake is made, a special tool (AMP extractor too/ 91067-3) must be used to remove the pin. Vicon does not supply this tool.*

8. Insert the inner shield into the grooves of the connector. Refer to Figure 5a on page 13.
9. Close the inner shield. Insert the outer shield into the grooves of the connector. Refer to Figure 5b and c.
10. Close the outer shield until the tabs snap over the tabs on the inner shield. Refer to Figure 5d.
11. Slide the ferrule until it covers the end of the closed shields. Crimp the larger end of the ferrule to the cable.
12. Assemble the connector needed for the host computer's 9- or 25-pin connector, referring to Table 11 on page 20. Note that Vicon does not supply the parts needed to assemble this connector.
13. Connect the assembled connector to the chosen (9- or 25-pin) connector on the host computer. Connect the V1422-end of the cable to jack J6 on the VI 422 rear connector panel. Refer to Figure 3 on page 9.

---

## Terminate Unused BNC Connectors

The V1422 rear panel contains 32 pairs of BNC connectors for looping video to other system components (outputs) and for receiving camera video signals (inputs). Either BNC connector in each pair may be used for input or output. If video input is connected to either of the BNC connectors, the other BNC must be connected to a system component or be terminated. Perform the following procedure.

1. Select one terminator from the accessory kit for each pair of BNC connectors which is connected to video input but that will not loop video out to system components.
2. Connect a terminator to each unused BNC output in each pair of BNC connectors that has a used BNC input. If neither BNC will be used, only terminate one of the BNCs.

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# Operation

## Introduction

The Vi422 may be operated using remote keypads, the local keypad and host computer keypads. As shown in Table 6 on page 13, the remote keypads may be Vicon models V1300X-DVC, V1300X-RVC or a computer running V1300X-PACP software (referred to as an "add-on PC"). These keypads are connected to the keypad connector on the rear panel of the unit. The local keypad is the front panel of the V1422. A host computer may also be connected to the unit via the RS-232 port. Including the local keypad, a total of ten keypads may be used to operate the equipment comprising a CCTV system.

This section of the manual describes Vi422 operating procedures using the local keypad, shown in Figure 9. Refer to the appropriate instruction manuals for remote keypads, the host computer, and add-on PCs.

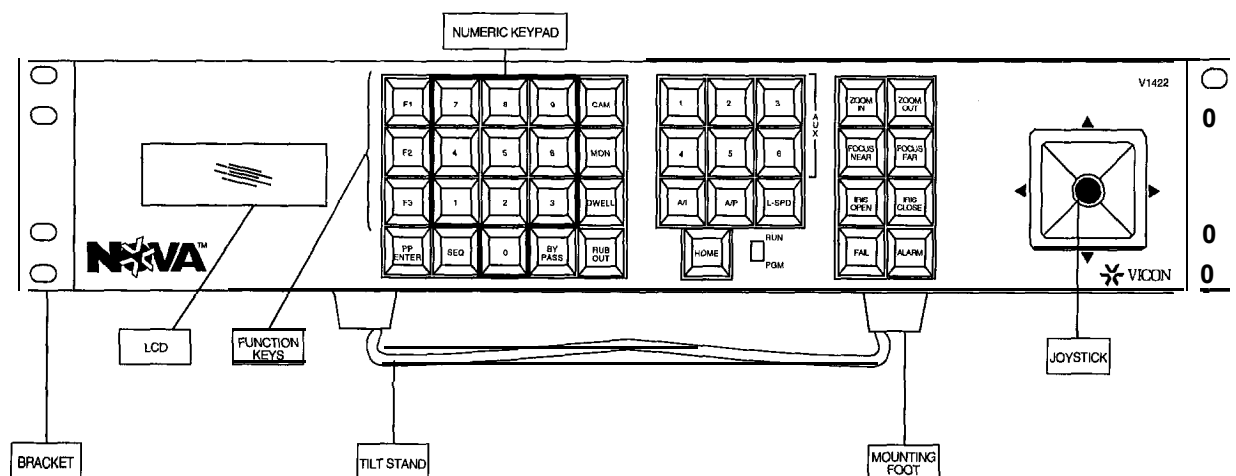


Figure 9  
V1422 Front Panel

---

## Applying Power

The switching power supply in the Vi422 allows the unit to be operated from 90-265 VAC at 50-60 Hz. Perform the following procedure to apply power to the unit.

1. Perform the steps in *Power Connections* on page 10.
2. Plug the power cord into the V1422 rear connector panel. Refer to Figure 3 on page 9. Plug the power cord into the appropriate power source (90-265 VAC, 50-60 Hz).
3. Locate the power switch on the rear panel and turn the unit on by placing the power switch in the "I" position.
4. Apply power to all CCTV system components, referring to the appropriate instruction manuals.

---

## Programming the VI 422

The Vi422 configuration file must be developed before operation. Refer to *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*.

---

## Entering the Login ID and Passcode

If at least one user has been defined for the system, the LCD will display as follows when the Vi422 is initially powered or rebooted.

VICON INDUSTRIES INC.  
\* SYSTEM LOGON \*  
ENTER LOGIN ID  
- - - - -

A valid identification number must be entered before the programming screens can be accessed and the system can be operated. Enter the ID using the local numeric keypad and press the HOME key. Refer to Figure 9 on page 23 for the location of these keys. Note that if the user identification number is assigned to an administrator, a passcode will also be requested:

VICON INDUSTRIES INC.  
\* ADMINISTRATOR \*  
ENTER PASSCODE  
- - - - -

Enter the passcode using the numeric keypad and press the HOME key. If the passcode was valid (programmed for an administrator as discussed in *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*), the Vi422 will now be available for system operation and programming. If an invalid passcode is entered, both the login ID and the passcode must be entered again.

---

*Note: Press and hold the F1 key and then Press the Bypass key to exit the menu system.*

---

# Joystick Operation

The V1422 joystick is located on the front panel, as shown in Figure 9 on page 23. This vector-solving joystick controls pan and tilt speed proportionally to deflection, as shown in Figure 10. The maximum speed is selectable, as discussed in *Joystick Speed Factor*:

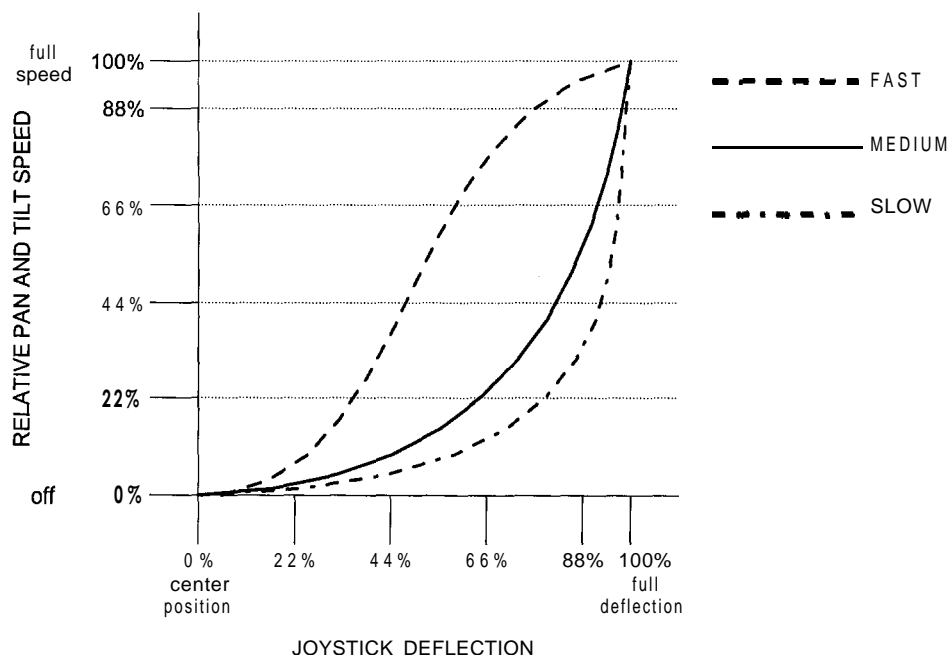
Deflect the joystick in the desired direction in order to control the pan-and-tilt drive associated with the currently-selected camera station. To increase the speed, deflect the joystick further in the desired direction.

## Joystick Speed Factor

*Note: The following procedure is applicable only for keypads used with the V7UVS Surveyor Mini Dome or V15UVS Universal Omniscan, Refer to NOVA V1422 CPU-Based Control and Switching System Programming Manual X834 to define the percentage of maximum joystick speed discussed below and the fast, medium, slow settings in Figure 10.*

If the V1422 is controlling a V15UVS Universal Omniscan or V7UVS Surveyor Mini Dome, the joystick behavior can be modified while the keypad is in the RUN mode (not applicable for PGM mode). The maximum pan and tilt speed (which occurs when the joystick is at full deflection) can be set to equal the maximum speed or a percentage of the maximum speed. For example, if the maximum is 90° per second and the percentage chosen during programming was 50%, pressing the F1 key will toggle the maximum value to 45° per second (50% of 90). By redefining the maximum to the lesser of the two values, a slow moving object may be more easily tracked.

The F1 key is used to toggle the maximum speed between the maximum and a percentage of that value.



**Figure 10**  
**Joystick Response Curves**

---

## Selecting a Camera and Monitor

Before the video from a camera may be viewed on a monitor, the camera and monitor must be selected using the procedure described below. Refer to Figure 9 on page 23 for the location of local keys.

1. Press the MON key.
2. Enter the monitor number using the numeric keypad.
3. Press the MON key.
4. Enter the camera number.
5. Press the CAM key.

*Note: If camera titles were programmed as discussed in NOVA V1422 CPU-Based Control and Switching System Programming Manual X834, the title will display on the selected monitor after step 5 above.*

---

## Preset Operation

The term “preset” refers to a preprogrammed pan-and-tilt position and lens setting. Preset lens settings are only available with motorized zoom lenses. The same set of local keypad commands are used to program presets and to recall previously defined presets. The RUN/PGM switch is used to differentiate between these two activities. Refer to Figure 9 on page 23 for the location of specific keys on the local keypad. Perform the following procedure to program or activate a preset.

**⚠ Caution:** *The V1200R-LM-PP Preset Drive is required in order to perform preset operations using the V1200R-LM Multiple Receiver/Driver. Using preset functions without the Preset Drive installed will cause the pan-and-tilt drive to “run away”: or to pan and tilt erratically.*

---

1. Position the pan-and-tilt drive and lens to the desired preset position.
2. Place the RUN/PGM switch in the PGM position to program or in the RUN position to activate a preset.
3. Press the PP ENTER key.
4. Using the numeric keypad, enter the number to be used to identify this preset position and lens setting.

*Note: Refer to Clearing Errors on page 36 if an error is made during input.*

---

5. Press the PP ENTER key. This will store a preset if the RUN/PGM switch is in the PGM position or activate the pan-and-tilt and lens as defined by the preset if the switch is in the RUN position.

*Note: If programmed as discussed in NOVA V1422 CPU-Based Control and Switching System Programming Manual X834, a preset title will display on the selected monitor. Preset titles are only available for presets 1-32.*

---

## Controlling a Lens

The lens control keys are located at the extreme right of the keypad (refer to Figure 9 on page 23). These keys control focus, iris, and zoom functions of motorized lenses. The zoom, focus, and iris keys are

momentary control keys; each time the ZOOM IN key is pressed, the lens will zoom in, until the limit is reached or the key is released.

All Vicon receivers compatible with the V1422 feature built-in autoiris control circuits and variable lens speed operation. The lens must either be motorized (lenses with the letter M in the model number) or motorized with spot filter (lenses with the letters MS in the model number). Press the A/I button to enable or disable the autoiris. Press the L-SPD button to change the speed to fast or slow.

**⚠ Caution:** Do not enable the autoiris function if the pan-and-tilt drive is in autopan mode. This will cause premature failure of the autoiris drive mechanism.

---

## Auxiliary Operation

Auxiliary switches control latching or momentary functions at the receiver site. The number of latching and/or momentary auxiliary functions available depends upon the receiver, with a maximum of six devices. These six auxiliary devices are activated using the six AUX buttons on the keypad.

To activate or deactivate a latching auxiliary device, press the appropriate AUX button and release.

*Note: If using Model V1300R receiver with the V1300R-PV option board installed or V1301R receiver with the V1301R-PV option board installed, do not use the auxiliary keys from the V1422 local panel while using the joystick.*

To activate a momentary auxiliary device, press the appropriate AUX button and hold the button in as long as the operation of the device is required.

*Note: If the V1422 was programmed with Seize Control set to Manual pressing the AUX4 key will initiate a seize. The Seize Control must be set to Auto in order to control auxiliary equipment with the AUX4 key.*

---

## Autopan Control

Press the A/P key to activate or deactivate automatic panning. "A/P" will display on the LCD when the V1422 has sent a command to the selected camera to begin autopanning.

*Note: Manual pan operations have priority over the autopan function. Panning with the joystick will deactivate autopanning.*

---

## Home Key-

The V1422 allows a user to quickly return to preset 1 of the selected camera station using the HOME key.

*Note: The procedure in Preset Operation on page 26 must be performed to define preset 1.*

Press the HOME key to move the pan-and-tilt drive to preset position 1.



---

## Seize Control

Only one keypad may control a camera station at a time. A keypad may seize the control of a camera station from a keypad with a lower priority. Priority levels are set using V1422 programming screens. Refer to the *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*.

Seize control may be set to Automatic or Manual through the programming screens. If the seize control was set to Automatic, a keypad may seize the control of a camera station from a keypad with lower priority by sending any command to the camera station (pan, tilt, etc.). For manual seize control, the AUX4 key must be pressed before the seize can take place.

**Note:** *If a remote keypad is operating in V1200 mode (referred to as Receiver Type: Limited in the V1300X-PA CP pane), the seize control must be set to Auto in the V1422 programming screens.*

---

## Alarm Operation

The LCD will display an ALARM! message if one or more alarms have been activated. An active alarm is acknowledged by pressing the ALARM key. Acknowledging an alarm removes it from the stack of active alarms. The stack mode determines whether each alarm monitor may have its own list of active alarms (independent stack mode) or if one list is common to all alarm monitors (common stack mode). Figures 11 and 12 illustrate common stack mode and independent stack mode, respectively.

In Figure 11A, the Edit Alarm Call-Up programming screens are shown for two alarms. The initial conditions are as follows (refer to *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834* for more information):

- common stack mode
- FIFO (first-in, first-out) order
- alarm 1 is activated before alarm 2.

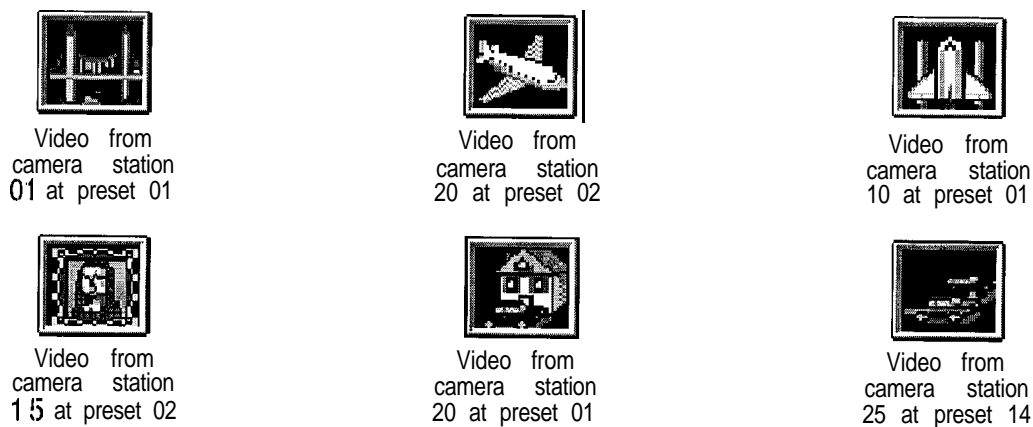
Figure 11B illustrates the video from specific camera stations at specific preset positions. All of these camera/preset combinations are associated with either alarm 1 or alarm 2 as shown in Figure 11A, except for the video from camera 10 at preset 1. The video from camera 10 at preset 1 is defined to be the video displaying on monitor 3 **before** any alarms are activated. Figure 11C illustrates the video displayed on monitors 1, 2 and 3 when alarm 1 is activated. As shown in Figure 11A, an active alarm 1 was programmed to display video from camera 1, preset 1, on monitor 1 and to display video from camera 20, preset 2, on monitor 2. Because the Edit Alarm Call-Up screen for alarm 1 does not include monitor 3, it will continue to display **pre**-alarm video (camera 10, preset 1). When alarm 1 is acknowledged on either monitor 1 or monitor 2, alarm video from alarm input 1 will display, as shown in Figure 11D. Because all three monitors were included in the Edit Alarm Call-Up for alarm input 1, alarm video displays on all alarm monitors. Alarm 2 may be acknowledged from any alarm monitor (1, 2, or 3).

A

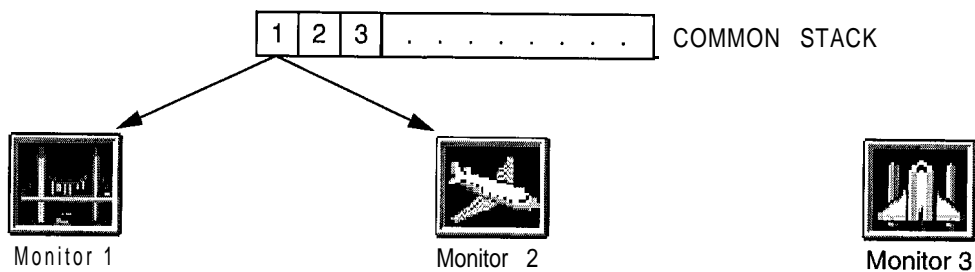
ALARM INPUT NO. : 01			
MON	CAM	PRE	AUX1
01	01	01	NC
02	20	02	ON
03	NC	00	NC
-	-	-	-
-	-	-	-
-	-	-	-
-	-	-	-

ALARM INPUT NO. : 02			
MON	CAM	P R E	AUX1
01	15	02	NC
02			ON
03			ON
-	-	-	-

B



C



D

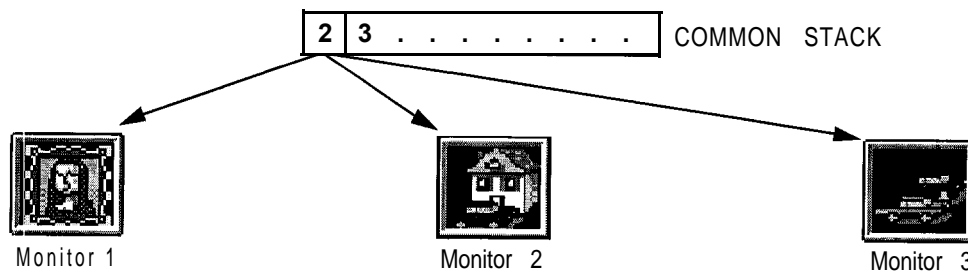


Figure 11  
Common Stack Mode Example

Figure 12 illustrates independent stack mode. The initial conditions are as follows (refer to *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834* for more information):

- independent stack mode
- FIFO (first-in, first-out) order for monitors 1 and 3; priority order for monitor 2
- acknowledged alarms will NOT be cleared from all monitor lists
- alarm 1 is activated before alarm 2
- alarm 2 has a higher priority than alarm 1.

Figure 12B illustrates the video from specific cameras at specific preset positions. All of the alarms shown in Figure 12B are associated with either alarm 1 or alarm 2 (refer to Figure 12A) except for the video from camera station 10 at preset 1. When alarms 1 and 2 are activated, alarm 1 displays on monitor 1 because the alarm order is FIFO (refer to the initial conditions). Alarm order for monitor 2 is set to Priority, so alarm 2 displays on monitor 2. Monitor 3 displays alarm 2 because this monitor was not included in the Edit Alarm Call-Up for alarm 1 (note that monitor 3 has no camera associated on alarm 1). Refer to Figure 12C. When alarm 2 is acknowledged from monitor 2, it is cleared from monitor 2's stack only. Because of the specified initial conditions, monitors 1 and 3 are not affected. Refer to Figure 12D.

## Alarm Report Format

If a serial line printer is connected to jack J5, an alarm report will automatically print for each activated alarm. The format is shown in Table 12.

**Table 12**  
**Alarm Report Format**

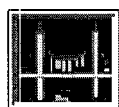
Format	Explanation
### detect mm:dd:yy hh:mm:ss	An alarm has been activated.
### cleared mm:dd:yy	An alarm has been acknowledged (removed from the stack) in a system programmed for common stack mode.
### cleared by monitor # mm:dd:yy	An alarm has been acknowledged (removed from the stack) in a system programmed for independent stack mode.
### cleared by xia mm:dd:yy	A momentary alarm has been acknowledged (removed from the stack) or an alarm (momentary or latching) was automatically acknowledged.

A

ALARM INPUT NO. : 01			
MON	CAM	PRE	AUX1
01	01	01	NC
02	20	02	ON
03	NC	00	NC
-	-	-	-

ALARM INPUT NO. : 02			
MON	CAM	PRE	AUX1
01	15	02	NC
02			ON
03	105	014	ON
-	-	-	-

B



Video from  
camera station  
01 at preset 01



Video from  
camera station  
20 at preset 02



Video from  
camera station  
10 at preset 01



Video from  
camera station  
15 at preset 02



Video from  
camera station  
20 at preset 01



Video from  
camera station  
25 at preset 14

C

ALARM ORDER: FIFO

Monitor 1

2  
1

ALARM ORDER: PRIORITY

Monitor 2

1  
2

ALARM ORDER: FIFO

Monitor 3

2

D

ALARM ORDER: FIFO

Monitor 1

2  
1

ALARM ORDER: PRIORITY

Monitor 2

1

ALARM ORDER: FIFO

Monitor 3

2

Figure 12  
Independent Stack Mode Example

## Acknowledging Alarms

The information in this section assumes that the Auto Acknowledge command was disabled during system programming. The ALARM button, located on the Vi422 local panel, is used to acknowledge alarms (refer to Figure 9 on page 23). If the currently-selected monitor has been defined as an alarm monitor, the first press of the ALARM button will acknowledge the alarm whose video is displaying on the alarm monitor. If the selected monitor is not an alarm monitor, the first press of the ALARM button will select the lowest-numbered alarm monitor, and the second press will clear the alarm. Each subsequent press of the ALARM button will clear one alarm (if multiple alarms are active). In common stack mode, acknowledging the last alarm is the final step.

In independent stack mode, alarms may be active on other alarm monitors even after the last alarm is acknowledged from the current alarm monitor. Therefore, after the last alarm is acknowledged on the currently-selected alarm monitor, the next press of the ALARM button will select the next lowest-numbered alarm monitor. For example, in a system with monitors 1, 3 and 4 defined as alarm monitors, if alarm monitor 3 was selected when alarms were activated, the next lowest-numbered alarm monitor is monitor 1. If alarm monitor 1 had been selected when alarms were activated, the next-lowest alarm monitor would be alarm monitor 3. The next lowest-numbered alarm monitor is always the alarm monitor that has not yet been viewed and which has the lowest number. Each subsequent press of the ALARM button will clear one alarm until all alarms have been acknowledged on that alarm monitor. Sequencing alarms are processed in a similar manner, as discussed in *Acknowledging Sequencing Alarms*.

The LCD will display "ALARM!" when the first alarm activates. This display will clear when the last alarm is acknowledged.

Note that if the audible alarm is enabled during programming, an audible alarm will sound each time alarm(s) are activated until the first alarm is acknowledged. For example, if alarms 1, 2, and 3 activate then the alarm will sound until the first alarm is acknowledged. If at that time alarm 4 activated, the audible alarm would start again.

## Acknowledging Sequencing Alarms

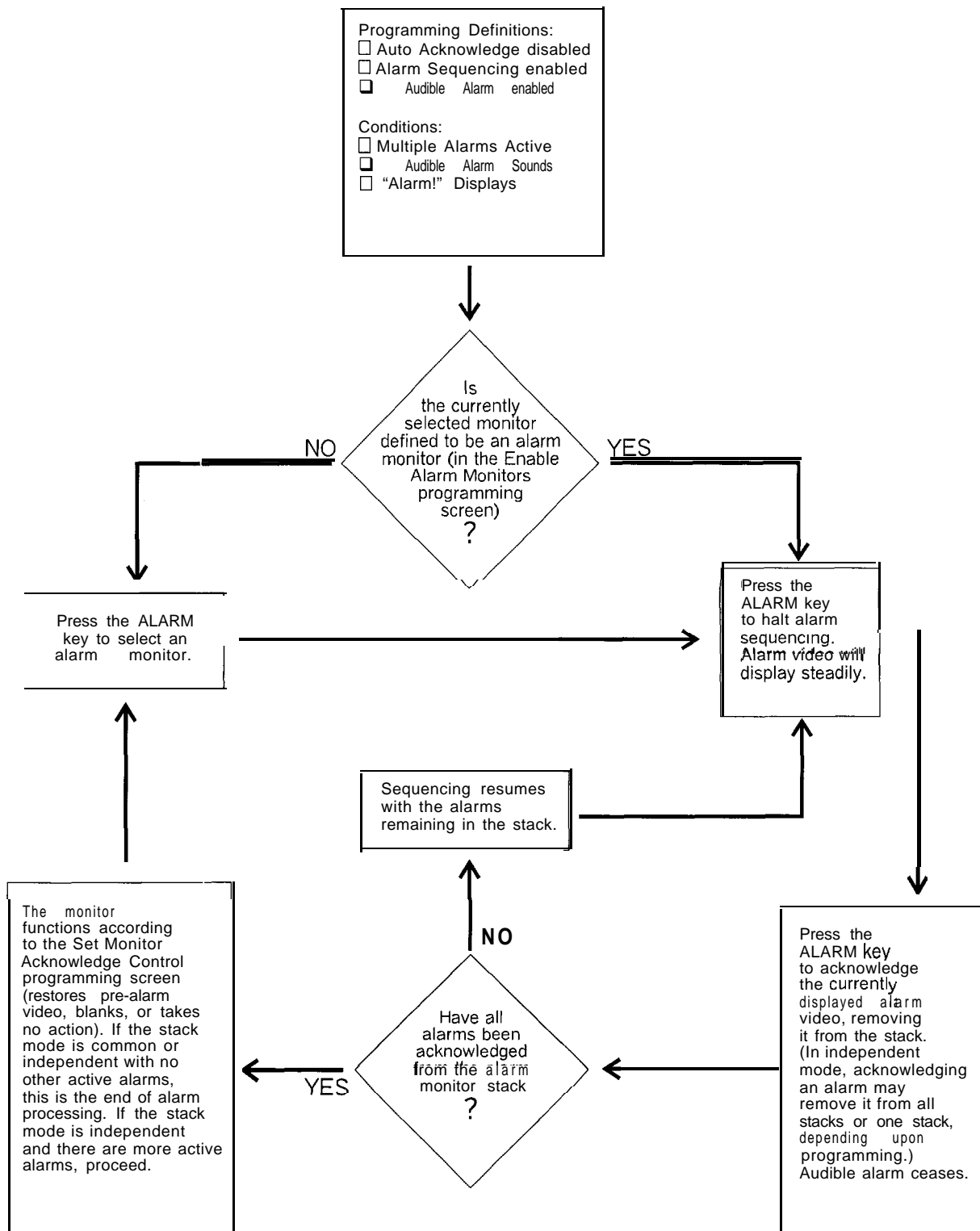
Figure 13 illustrates the conditions and actions of a Vi422 system with multiple active, sequencing alarms. It is assumed for this example that the Auto Acknowledge command is disabled, the audible alarm is enabled, and the Alarm Sequencing command is enabled, using the Vi422 programming screens discussed in *NOVA Digital Control and Switching System Programming Manual X834*. The Vi 422 audible alarm will sound and the LCD will display "ALARM!" when the first alarm activates.

Alarm video may only be viewed on monitors which have been defined during programming to be alarm monitors. As shown in Figure 13, the consequences of pressing the ALARM key depend upon whether the currently-selected monitor is an alarm monitor. If an alarm monitor is already selected when the alarms activate, pressing the ALARM key will halt sequencing. Pressing the ALARM key again will acknowledge the currently-displaying alarm video. If common stack mode was chosen during programming, the acknowledged alarm will be removed from the common monitor stack. If independent stack mode was chosen, each alarm monitor has its own alarm stack (an alarm stack is a list of active alarms). In this mode, an acknowledged alarm may be either cleared from all monitor stacks or only from the stack of the selected alarm monitor, depending upon the programming. Sequencing resumes with the remaining alarms in the stack.

If the currently-selected monitor is not an alarm monitor, the first press of the ALARM key will select the lowest-numbered alarm monitor. For example, if monitors 3, 4, and 5 are alarm monitors, alarm monitor 3 will be selected. The second ALARM key press will halt sequencing and the third press will acknowledge the displayed alarm and resume sequencing, as discussed in the previous paragraph. When the first alarm is acknowledged, the audible alarm will cease.

Remaining alarms are acknowledged in this same manner, with one ALARM key press to halt sequencing and another ALARM key press to acknowledge the alarm and resume sequencing. When all alarms for the currently-selected alarm monitor are acknowledged, the alarm monitor will display the pre-alarm video, blank the screen, or leave the last alarm video onscreen, depending upon the choices made during programming. Refer to the *Set Monitor Acknowledge Control* programming screen, discussed in **NOVA V1422 CPU-Based Control and Switching System Programming Manual** X834, for more information. If the Vi422 was programmed to use common stack mode, alarm processing is finished.

If independent stack mode is used, there may be active alarms on other alarm monitor stacks which may not be viewed using the currently-selected alarm monitor stack. This can occur because of camera-to-monitor partitioning; alarms from cameras which are not partitioned to the currently-selected alarm monitor cannot be viewed on that monitor. Therefore, active alarms may remain in the system although all alarms that may be viewed on the currently-selected monitor have been acknowledged. In this case, the next press of the ALARM key will select the **next** lowest-numbered alarm monitor, and the sequencing alarm process will begin again. When all alarms have been acknowledged from all alarm monitor stacks, the selected alarm monitor will restore pre-alarm video, blank, or take no action, depending upon programming definitions.



**Figure 13**  
**Sequencing Alarm Processing Flow Chart**

---

# Tour Operation

A tour is a series of preprogrammed video displays from various camera stations. This series may be comprised of video from cameras on a monitor (monitor tour) or video from various cameras on various monitors (salvo tour). Preset positions, preset lens settings, and dwell times may be associated with each step in a tour. A step is defined as a salvo for salvo tours or one particular camera, preset, dwell for a monitor tour. For example, a monitor tour might be defined to display the video from camera 1's preset 1 and then camera 2's preset 10, both on monitor 1. This would be a two-step tour. An example of a salvo tour might be defined to perform salvo 1 then salvo 3. Salvo 1 could be programmed to display camera 1's preset 1 on monitor 1 simultaneously with camera 2's video at preset 10 on monitor 2. This video might be replaced during the second step of the tour, depending upon the programming of salvo 3.

*Note: Referring to NOVA Vi422 CPU-Based Control and Switching System Programming Manual X834, specify the parameters necessary to define the monitor or salvo tour. Referring to Preset Operation on page 26, define each preset to be used in the tour.*

## Activating Tours

After a tour is defined, as discussed in the previous section, a tour may be activated from a keypad. The number used to identify the tour is the tour's dial-up number. Dial-up tour numbers may be user-defined; therefore, refer to the appropriate programming screen to identify the appropriate numbers. Perform the following procedure.

*Note: By default, tour dial-up numbers are 100 plus the tour number. For example, if the default dial-up number is used for tour 7, the dial-up number is 107. Dial-up numbers may be user-defined, as discussed in the NOVA V1422 CPU-Based Control and Switching System Programming Manual X834,*

1. Place the RUN/PGM switch in the RUN position.
2. Enter the tour's dial-up number using the numeric keypad.

*Note: Enter a "9" before the tour's dial-up number to load a tour for quick access. This tour will then activate each time the SEQ key is pressed, until the V1422 is rebooted or a new tour is loaded for quick access. Note that a tour loaded in this manner cannot be chained to a second tour: (Tours are defined to chain to the next tour during programming. Refer to NOVA V1422 CPU-Based Control and Switching System Programming Manual X834.)*

3. Press the SEQ key.
4. Press SEQ while a tour is active to advance one step in the tour. The LCD status line will identify the tour type as Monitor Tour or Salvo Tour.

## Deactivating Tours

To cancel a running tour, press the RUBOUT key and use the joystick to pan-and-tilt to a new location. A tour may also be deactivated by manually selecting a camera.

*Note: The procedure listed above must be performed for each monitor in a salvo tour.*

*If a tour is deactivated while a pan-and-tilt drive is moving to a preset, the tour will be canceled when the pan-and-tilt reaches the preset position.*



---

## Salvo Operation

A salvo is defined as the simultaneous display of video from various cameras on various monitors. Salvos may be used to define the steps in salvo tours, as discussed in *Tour Operation*, or they may be executed as an independent function. Salvo video displays may be initiated by performing the following procedure.

**Note:** Referring to NOVA Vi422 CPU-Based Control and Switching System Programming Manual X834, specify the parameters necessary to define a salvo. Referring to Preset Operation on page 26, define each preset to be used in the salvo.

### Activating Salvos

After a salvo is defined, as discussed in the previous section, a salvo may be activated from a keypad. The number used to identify the salvo is the salvo's dial-up number. Dial-up salvo numbers may be user-defined; therefore, refer to the appropriate programming screen to identify the appropriate numbers. Perform the following procedure.

**Note:** By default, salvo dial-up numbers are 200 plus the salvo number: for example, if the default dial-up number is used for salvo 1, the dial-up number is 201. Dial-up numbers may be user-defined as discussed in the NOVA Vi422 CPU-Based Control and Switching System Programming Manual X834.

1. Place the RUN/PGM switch in the RUN position.
2. Enter the salvo's dial-up number using the numeric keypad.
3. Press the CAM key.

### Deactivating Salvos

To cancel a running salvo on the currently-selected monitor, perform the following procedure:

1. Press the RUBOUT key.
2. Use the joystick to pan-and-tilt to a new location.

**Note:** If this procedure is performed while a pan-and-tilt is moving to a preset, the salvo will be canceled when the pan-and-tilt reaches the preset position.

---

## Clearing Communications Failures

Communications between the Vi422 and other system components may fail due to broken electrical connections from a variety of sources. The announcement of communications failures may be acknowledged and reset using the FAIL key (refer to Figure 9 on page 23). The LCD status line will display a "COMM!" message until the FAIL key is pressed, even if communications have resumed.

---

## Clearing Errors

Invalid keypad entries will cause an error message to be displayed on the LCD. To clear the error message, press the RUBOUT key. The RUBOUT key may also be used to clear monitor, camera, and preset entries, one digit at a time, before the final key in the sequence is entered.

# Maintenance

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## Fuse Replacement

One fuse is located in a fuse tray in the rear panel of the V1422. Refer to Figure 9 on page 23. The fuse rating is 2A, 3AG, slo-blo. Perform the following procedure to replace the fuse.

**⚠ Warning:** *Using a fuse with the incorrect rating for the unit can result in component damage and/or fire.*

1. Slide the fuse tray out of the unit.

**A Warning:** *The new fuse must be inserted into the side labeled "120", regardless of the input voltage to the V1422. If the fuse is placed in the "240" side, the V1422 will not operate.*

2. Replace the old fuse with a new fuse of the proper rating: 2A, 3AG, slo-blo.
3. Replace the fuse tray.

There is also a 5A, 32V, 3AG fuse located inside the unit. Only a qualified service person should perform the procedures in this manual. Perform the following procedure to replace the fuse.

1. Unplug the V1422 from the power source.
2. Take necessary grounding precautions to prevent static discharge.
3. Remove the top cover of the V1422.
4. With the V1422 front panel facing you, the fuse is mounted on the inside right wall next to the power supply. The fuse connects pin 2 of P2 on the power board to pin 1 of J1 1 on the main board and is held in place with a tie. Locate the fuse and slide the fuse holder out of the tie.
5. Twist each half of the fuse holder to open the holder. Remove the fuse and replace it with the 5A, 32V, 3AG fuse from the accessory kit.
6. Replace the fuse holder halves and twist to lock the holder. Slip the holder back into the tie.
7. Replace the top cover of the V1422.

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## Storage

Use the following procedure when storing the V1422 for periods of 1 month or longer:

1. Place the unit and a fresh desiccant (drying agent) in a container that provides a vapor barrier and vapor seal.
2. Place the sealed storage container in a location where the temperature is maintained between 32 to 122°F (0 to 50°C).

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## Joystick Calibration

If deflection of the joystick does not operate smoothly, recalibration may be required. Refer to *NOVA Digital Control and Switching System Programming Manual X834* for more information.

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## Front Panel Keys

If any of the front panel keys “stick” when depressed or released, perform the *Front Panel Test*, as described in *NOVA V1422 CPU-Based Control and Switching System Programming Manual X834*

# Shipping Instructions

Use the following procedure when returning a unit to the factory:

1. Call or write Vicon for a Return Authorization (R.A.) at one of the locations listed below. Record the name of the Vicon employee who issued the R.A.

Vicon Industries Inc.  
89 Arkay Drive  
Hauppauge, NY 11788  
Phone: 516-952-CCTV; Toll-Free: 1-800-645-91 16; Fax: 516-951 -CCTV

For service or returns from countries in Europe, contact:

Vicon Industries (U.K.) Ltd  
Brunel Way  
Fareham, PO15 5TX  
United Kingdom  
Phone: 44/(0)1489/566300; Fax: 44/(0)1489/566322

2. Attach a sheet of paper to the unit with the following information:
  - a. Name and address of the company returning the unit
  - b. Name of the Vicon employee who issued the R.A.
  - c. R. A. number
  - d. Brief description of the installation
  - e. Complete description of the problem and circumstances under which it occurs
  - f. Unit's original date of purchase, if still under warranty
3. Pack the unit carefully. Use the original shipping carton or its equivalent for maximum protection.
4. Mark the R.A. number on the outside of the carton on the shipping label.

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