

Crestron **CNXFZ**
Focus / Zoom Control Interface

Operations Guide

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CNX Focus/Zoom Control Interface: CNXFZ

Description

Functional Description

The CNXFZ is designed to provide network control of a remotely positioned video camera site. Control is defined as the two-axis motion of the focus/zoom setting and iris control of a camera lens.

Jumper Boards

Four supplied jumper boards permit the support of any lens assembly requiring an input voltage in the range of +/-2.5 to +/- 12 VDC. Thus a single CNXFZ with its four jumpers can control nearly any lens in the industry. Refer to the table below for exact voltage outputs for each jumper board.

NOTE: If no jumper board is connected to the CNXFZ, the lens outputs are disconnected.

Jumper Board Options

JUMPER BOARD	VOLTAGE CONFIGURATIONS	LENSES CONTROLLED
LENS A	+/- 12 VDC differential drive	Panasonic WV-LZ81/10, Canon J6x11 REA-IA-II, Daiwa/CSI, and Cosmocar H6ZAHE-2P and C6Z1218H2ESP-2
LENS B	+/- 8 VDC differential drive	H1020812 AMSP, Daiwa/CSI, and Computar H10Z0812M
LENS C	+/- 2.5 VDC single ended drive with lens supplied reference (implements 2.5V to 7.5V with lens supplied center (5V))	Fujinon MD, BMD and SD series, JVC HZ-713MD, Daiwa/CSI, and Canon KTS/KTS-A series
LENS D	+/- 6 VDC differential drive	Daiwa/CSI and Vicon M & MS series

Presets

In conjunction with the Crestron control system, the CNXFZ is capable of “memorizing” focus/zoom settings for a virtually unlimited number of presets. Each preset stores a specific setting. Positional feedback signals are essential to the implementation of presets; unless the lens supports position mode. These analog signals, provided by the lens, indicate current focus/zoom setting.

Position/Rate Mode

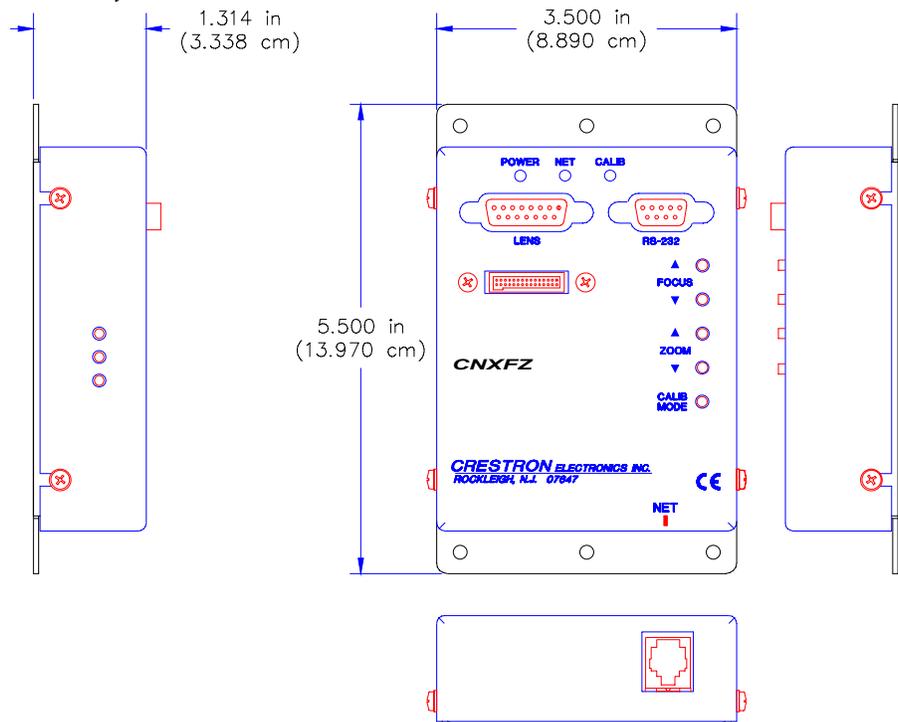
Movement of the lens may occur in either position or rate mode. A jumper board may be selected that best accommodates the mode parameters required by the system. Refer to “Position/Rate Mode Definition” on page 15 for a more detailed explanation of position and rate mode.

Physical Description

The CNXFZ, shown below, is housed in a black enclosure with a silk-screened front label. All electrical connections, except for the network (NET), are made to the front panel. Also on the front panel, there are three LEDs and five buttons. All of these front panel features are discussed in subsequent paragraphs.

At the shorter sides of the unit, the enclosure extends to form feet at a right angle to the side. There are three holes per foot for inserting screws to stabilize the unit.

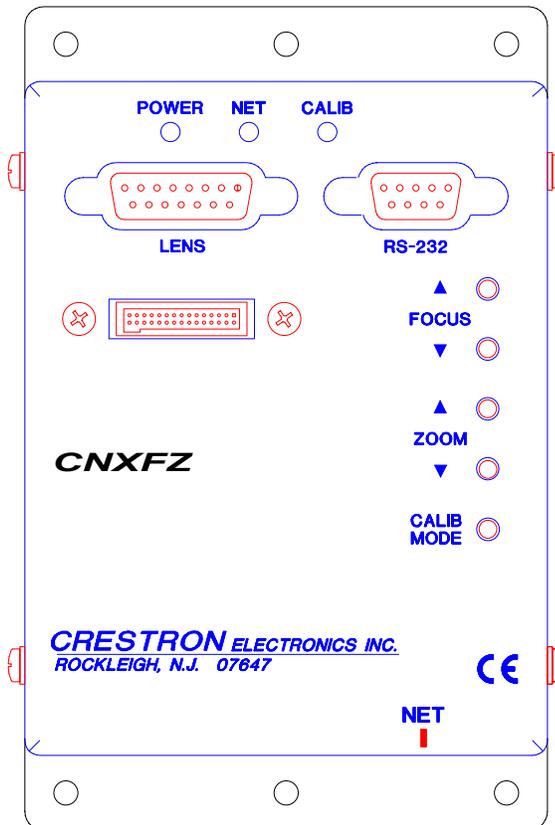
CNXFZ Physical Views



CNXFZ Ports

A number of ports bearing silk-screened labels are located on the CNXFZ. Refer to the illustration and descriptions after this paragraph.

CNXFZ Front Panel



NET

This 6-pin, 6-position RJ11 modular jack is used to connect the CNXFZ to the control system.

NOTE: Review the latest revision of the Network Modular Cable Requirements (Doc. 5682). Most 4-conductor phone cables are wired in a crisscross fashion and are not compatible with Crestron equipment.

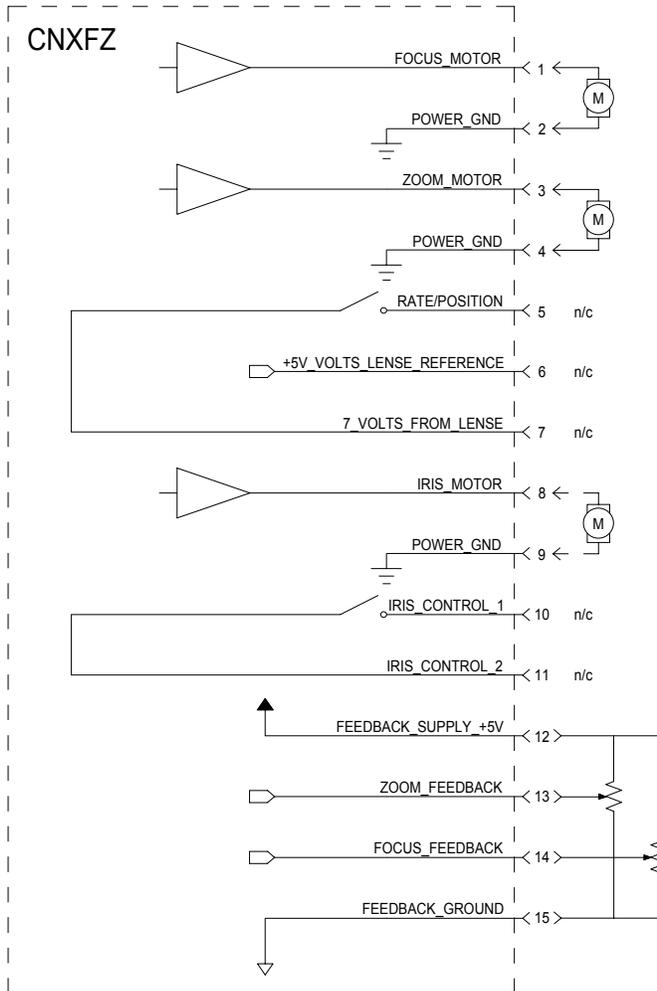
LENS

This DB15 female connector provides three channels for zoom, focus, and iris, as well as additional signals depending on lens. Refer to the pinout table on the next page. A 15-pin D-sub male connector with hood (P/N 748048-1) is supplied and attaches to the LENS port. To properly wire this male connector, a wiring schematic for each lens type (A through D) follows the pinout table. Crestron maintains a limited number of cabling drawings for lenses. Refer to “Appendix: Application Examples” on page 18 for specific lens applications. The information in the appendix offers recommended cabling connections with the appropriate lens type.

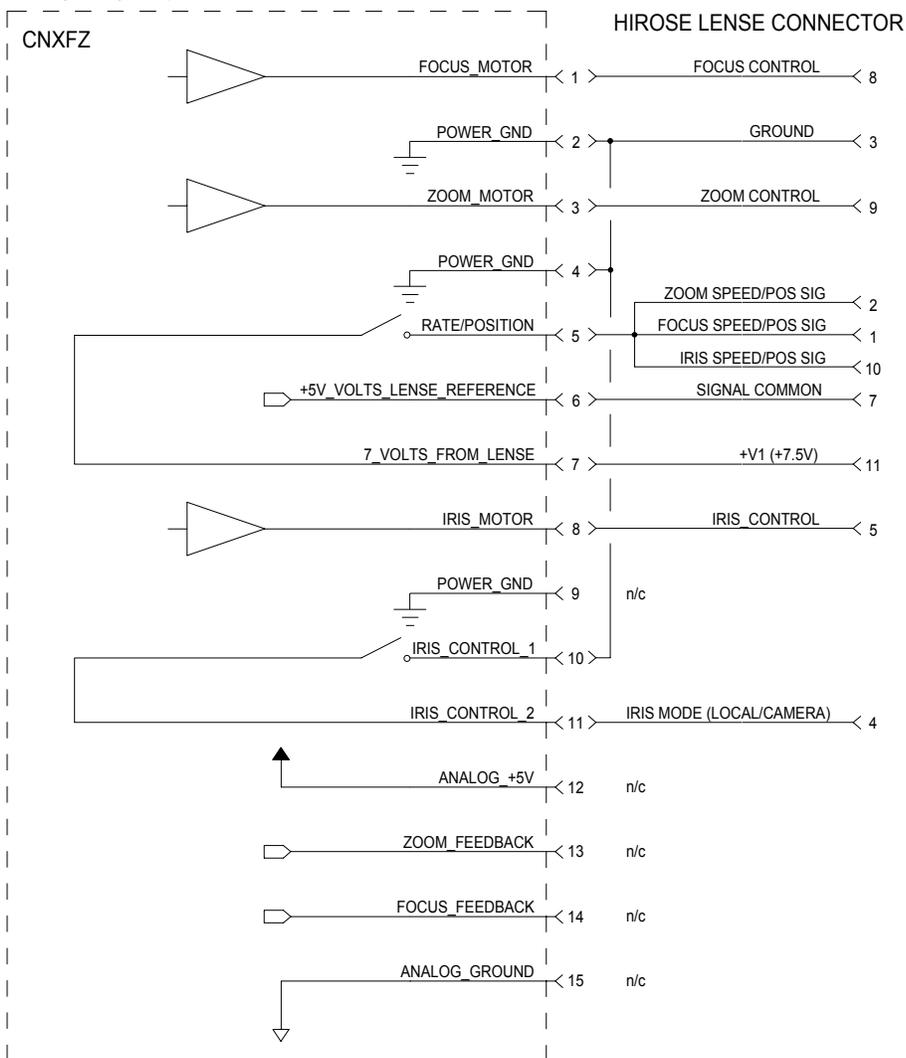
CNXFZ Pinout for LENS Port

PIN	DESCRIPTION
1	Focus Out
2	Focus Common
3	Zoom Out
4	Zoom Common
5	Rate/Position Mode
6	5V Reference from Lens
7	7.5V Reference from Lens
8	Iris Out
9	Iris Common
10	Iris Control 1
11	Iris Control 2
12	+5V to Pots
13	Pot Zoom
14	Pot Focus
15	0 Volts to Pots

Wiring Diagram for Lens A, B, and D (+/-12V, +/-8V, and +/-6V)



Wiring Diagram for Lens C (KTS/KTS-A Series and MD/BMD/SD Series)



RS-232

This DB9 female connector is primarily used to control “smart” cameras (serial-port-controlled cameras). Refer to the pinout table below.

CNXFZ Pinout for RS-232 Port

PIN	DESCRIPTION
1	-
2	Rx (to CNXFZ) Input
3	Tx (from CNXFZ) Output
4	-
5	GND
6	-
7	RTS (from CNXFZ) Output
8	CTS (to CNXFZ) Input
9	-

CNXFZ Indicators

Two indicators are located on the CNXFZ front panel. Both have a silk-screened label. Refer to the illustration shown in “CNXFZ Ports” on page 3 and the descriptions after this paragraph.

POWER

This LED illuminates when 24 VDC is supplied to the CNXFZ.

NET

This LED illuminates when communication between the control system and the CNXFZ is established. Illumination indicates that the SIMPL program currently loaded has a network device defined at the same NET ID as the CNXFZ.

CALIB

Function not defined at time of printing. LED installed for future use.

CNXFZ Buttons

Five buttons are located on the CNXFZ front panel. The purpose of these buttons is to permit local manual operation of lens focus and zoom functions when installing the unit. Each has a silk-screened label. Refer to the illustration shown in “CNXFZ Ports” on page 3 and the descriptions after this paragraph.

FOCUS \wedge (IN) / FOCUS \vee (OUT)

These buttons provide manual focus inward or outward control of the camera lens.

ZOOM \wedge (IN) / ZOOM \vee (OUT)

These buttons provide manual zoom inward or outward control of the camera lens.

CALIB

Function not defined at time of printing. Button installed for future use.

Leading Specifications

The table below and on the next page provides a summary of leading specifications for the CNXFZ. Dimensions and weights are rounded to the nearest hundredth unit.

Leading Specifications of the CNXFZ

SPECIFICATION	DETAILS
Power Requirements	24 VDC, 2.5A; 60 Watts
Default Network ID	40
SIMPL™ Windows®	Version 1.30.01 or later*
CNX Operating System	Version 5.01.21x or later
CNX Monitor	Version 2.05x or later
CNMS, CNRACK, CNLCOMP Operating System	Version 3.18.09 or later
ST-CP Operating System	Version 4.00.49 or later
ST-CP Monitor	Version 1.29 or later
VisionTools™ Pro (VT Pro)	Version 1.21 or later*
Crestron Database	Version 11.7.211 or later*

* The latest software versions can be obtained from the Software Downloads page (Simplwin, Touchpnl, and Cresdb Libraries) of the Crestron website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.

Leading Specifications of the CNXFZ (Continued)

SPECIFICATION	DETAILS
Dimensions & Weight	Height: 5.50 in (13.97 cm) Width: 3.50 in (8.89 cm) Depth: 1.31 in (3.34 cm) Weight: 0.65 lb (0.29 kg)

As of the date of manufacture, the unit has been tested and found to comply with specifications for CE marking.



NOTE: This unit complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) these devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

Setup

Network Wiring

NOTE: This section only applies to those applications using 4-wire Cresnet wiring.

When calculating the wire gauge for a particular network run, the length of the run and the power factor of each network unit to be connected must be taken into consideration. If network units are to be daisy-chained on the run, the power factor of each network unit to be daisy-chained must be added together to determine the power factor of the entire chain. The length of the run in feet and the power factor of the run should be used in the following resistance equation to calculate the value on the right side of the equation.

Resistance Equation

$$R < \frac{40,000}{L \times PF}$$

Where: R = Resistance (refer to table below).
 L = Length of run (or chain) in feet.
 PF = Power factor of entire run (or chain).

The required wire gauge should be chosen such that the resistance value is less than the value calculated in the resistance equation. Refer to the table after this paragraph.

Wire Gauge Values

RESISTANCE (R)	WIRE GAUGE
4	16
6	18
10	20
15	22
13	Doubled CAT5
8.7	Tripled CAT5

NOTE: All network wiring must consist of two twisted-pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the Y conductor and the Z conductor.

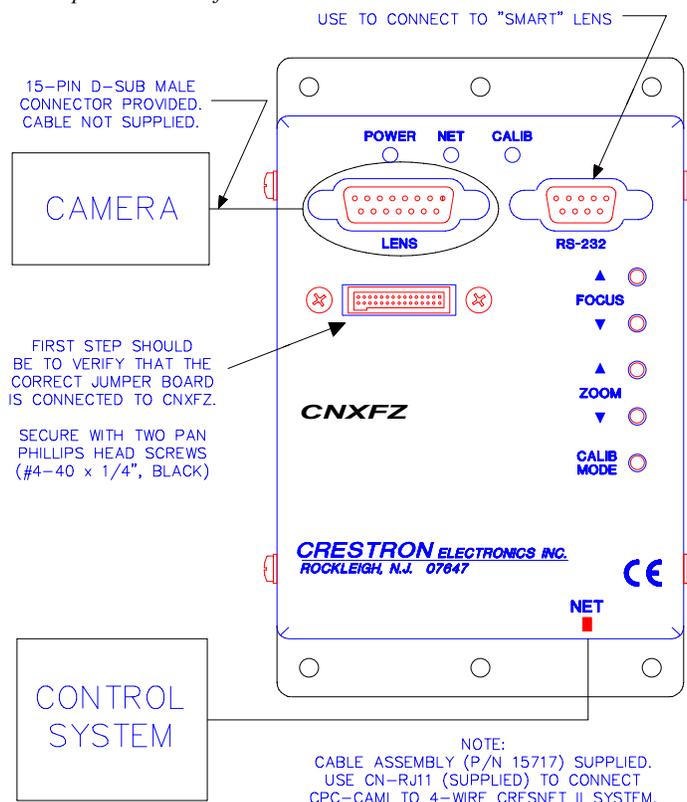
NOTE: When daisy-chaining Cresnet units, strip the ends of the wires carefully to avoid nicking the conductors. Twist together the ends of the wires that share a pin on the network connector, and tin the twisted connection. Apply solder only to the ends of the twisted wires. Avoid tinning too far up the wires or the end becomes brittle. Insert the tinned connection into the Cresnet connector and tighten the retaining screw. Repeat the procedure for the other three conductors.

Hookup

Refer to the hookup diagram below. Other than connecting the correct jumper board first and making the power connection last, complete the connections in any order.

NOTE: Before making any connections, review latest revision of network interconnection drawing (Doc. 5411) or the Crestron Network Modular Cable Requirements (Doc. 5682) when making connections to the port labeled NET.

Hookup Connections for CNXFZ



Identity Code

Each device and user interface within the network requires a unique identity code (NET ID). These codes are recognized by a two-digit hexadecimal number from 03 to FE. The NET ID of the unit must match an identity code specified in the SIMPL

Windows program. The NET ID of each CNXFZ has been factory set to 40, but may be changed from the PC via VT Pro or SIMPL Windows.

The method for changing the unit's NET ID is identical regardless of the software chosen. Attach the CNXFZ to the control system (verify that the software is running) and complete the following steps to change the NET ID.

1. Disconnect all network devices from the control system, except for the one CNXFZ that needs to have its NET ID changed.
2. Select **Tools | ViewPort** to open the "Crestron Performance Viewport" dialog box.
3. Select **Functions | Set Network ID**. The software checks the baud rate and then opens the "Set Network ID" dialog box.
4. Notice the list of current network devices in the dialog box. Highlight the CNXFZ.
5. The NET ID of the CNXFZ (default is 40) appears in the box below the list. Use the scroll arrow to assign another NET ID.
6. When the newly assigned NET ID appears, select the **Set ID** button to initiate the change.
7. The software responds with a successful message to confirm the new NET ID.
8. To verify this procedure, select **Diagnostics | Report Network Devices**. Confirm that the CNXFZ has a new NET ID code.
9. Reconnect other network devices that were disconnected in step 1.

SIMPL™ Windows® Programming

NOTE: VisionTools Pro (VT Pro) is a Windows® compatible software package for creating Crestron touchpanel screen designs.

SIMPL (Symbol Intensive Master Programming Language) is an easy-to-use programming language that is completely integrated and compatible with all Crestron system hardware. The objects that are used in SIMPL are called symbols. SIMPL Windows offers drag and drop functionality in a familiar Windows® environment.

SIMPL Windows is Crestron Electronics' software for programming Crestron control systems. It provides a well-designed graphical environment with a number of workspaces (i.e., windows) in which a programmer can select, configure, program, test, and monitor a Crestron control system.

The next two subsections describe a sample SIMPL Windows program that utilizes the CNXFZ. The first subsection details how the sample program works with a textual description and block diagram. The second subsection provides a broad description of how to actually create the SIMPL Windows program. A third subsection, "Application for an Alternate Method of Control" on page 15, is provided to offer an alternate method of control. An example program is referenced, but details for creating it are not furnished.

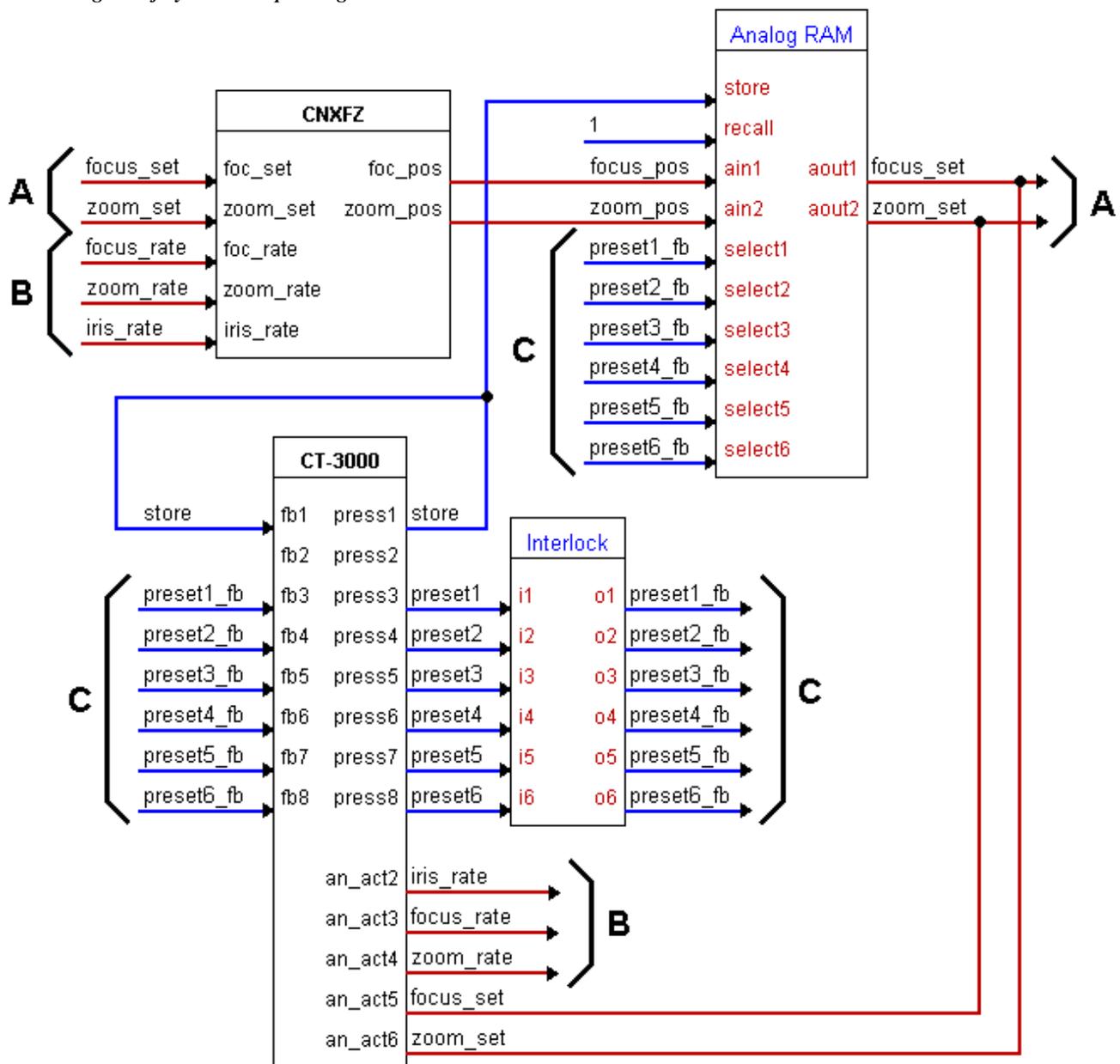
NOTE: The following description assumes that the reader has knowledge of SIMPL Windows. If not, please refer to the extensive help information provided with the software.

NOTE: There is no need to recreate the sample SIMPL Windows program. A similar copy of this program is available from Crestron's ControlCD (version 5.2 and later) or the Software Downloads page (Examples Library) of the Crestron website (www.crestron.com). Search for the CNXFZ.ZIP file. This zipped file contains the necessary files to recreate the following programming sample.

How the Program Works

A basic CNXFZ SIMPL program is shown on the next page in block diagram form. For this example, the SIMPL Windows program controls the CNXFZ through the use of nine analog signals.

Block Diagram of System Incorporating a CNXFZ



Positional Feedback Signals

Positional feedback signals are generated by the networked CNXFZ and input to the rest of the program. Two analog positional feedback signals, FOC_POS and ZOOM_POS, represent the current focus/zoom lens setting. The CNXFZ converts positional potentiometer wiper voltages to analog positional feedback signals. In general for example, an analog level of 0% on ZOOM_POS indicates that the lens is at its wide shot (wide and tight shot descriptions may be reversed for some camera lens, consult the manufacturer). An analog level of 100% on ZOOM_POS indicates that the lens is at its tight shot.

Drive Signals

Drive signals are generated from the SIMPL Windows program and output to the CNXFZ. There are two types of drive signals, position and rate. Each type is comprised of analog programmed outputs for the CNXFZ.

Two position drive signals, FOC_SET and ZOOM_SET, are used to instruct the CNXFZ to drive the camera to a preset position. Anytime the analog level on one of these drive signals change, the CNXFZ adjusts the corresponding focus/zoom lens position until the feedback matches the level at the programmed output.

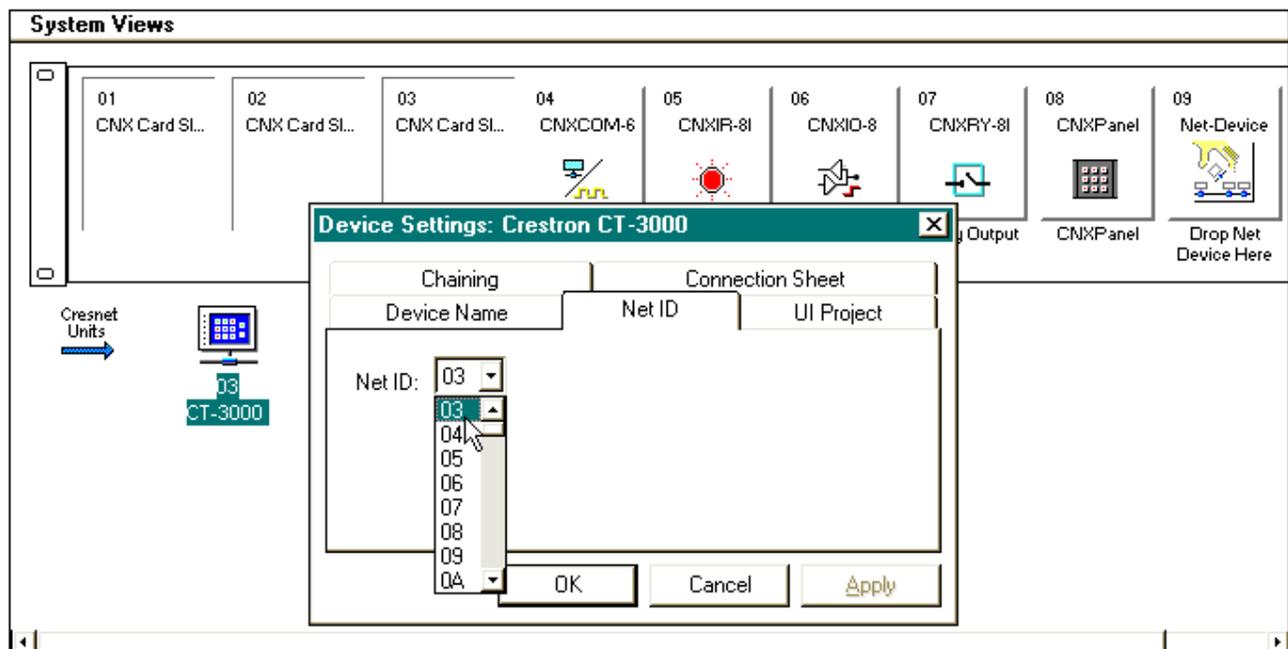
Three rate drive signals, IRIS_RATE, FOC_RATE, and ZOOM_RATE, are used to drive the focus/zoom lens position without the use of presets. For the focus/zoom lens position to remain motionless, the analog level at each of these programmed outputs should be 50%. If one of these levels rises higher than 50%, the corresponding iris or focus/zoom lens position is adjusted in the positive direction until the level returns to 50%. If the level drops below 50%, the corresponding iris or focus/zoom lens position is adjusted in the negative direction until the level returns to 50%.

How to Create the Program

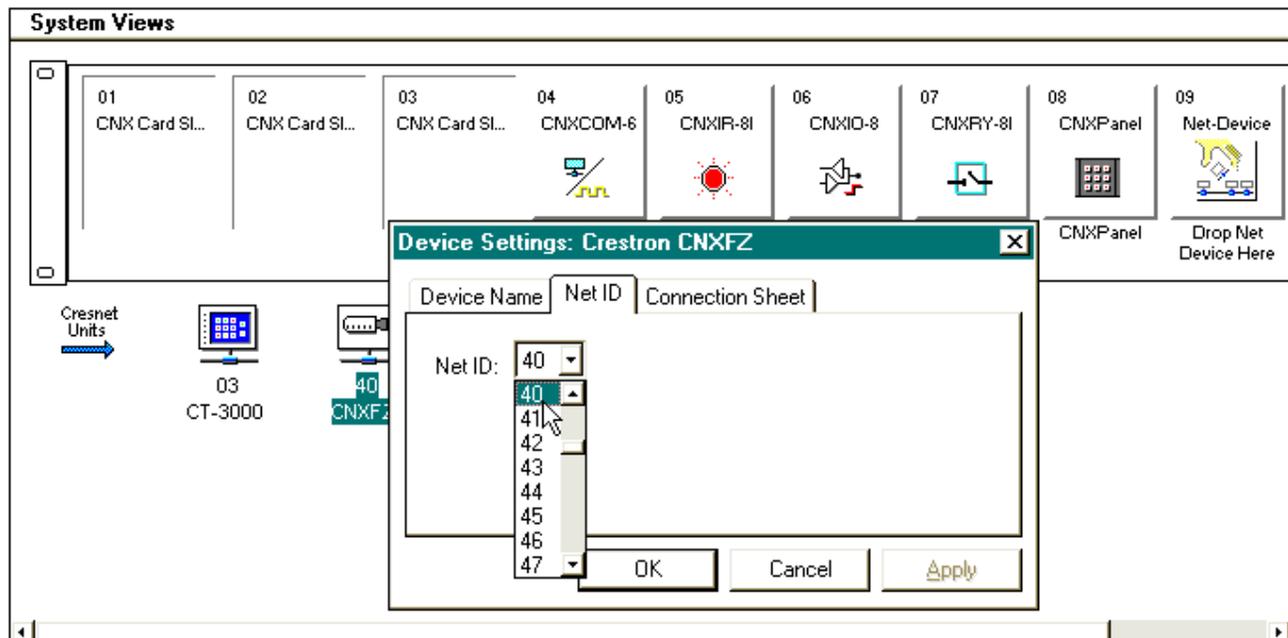
Configuration Manager

Use the Configuration Manager workspace (**Project | Configure System**) in SIMPL Windows to select and configure all the devices that need to be included into the system. For this example, from the Control Systems folder in the *Device Library* select CNMSX-PRO. Add a CT-3000 from the Touchpanels (Wired) folder; the touchpanel NET ID must be set to 03, shown on the next page. Drag and drop the CT-3000 onto *Net Device* (Slot #9 on the CNMSX-PRO).

NOTE: SIMPL Windows v1.30.01 or later is required to program the control system containing a CNXFZ. If using an earlier version of SIMPL Windows, Crestron recommends a SIMPL Windows and operating system upgrade. The latest versions can be obtained from the Software Downloads page (Simplwin and OPSYS Libraries) of the Crestron website (www.crestron.com). New users are required to register in order to obtain access to the FTP site.

System View of the CT-3000 in SIMPL Windows' Configuration Manager

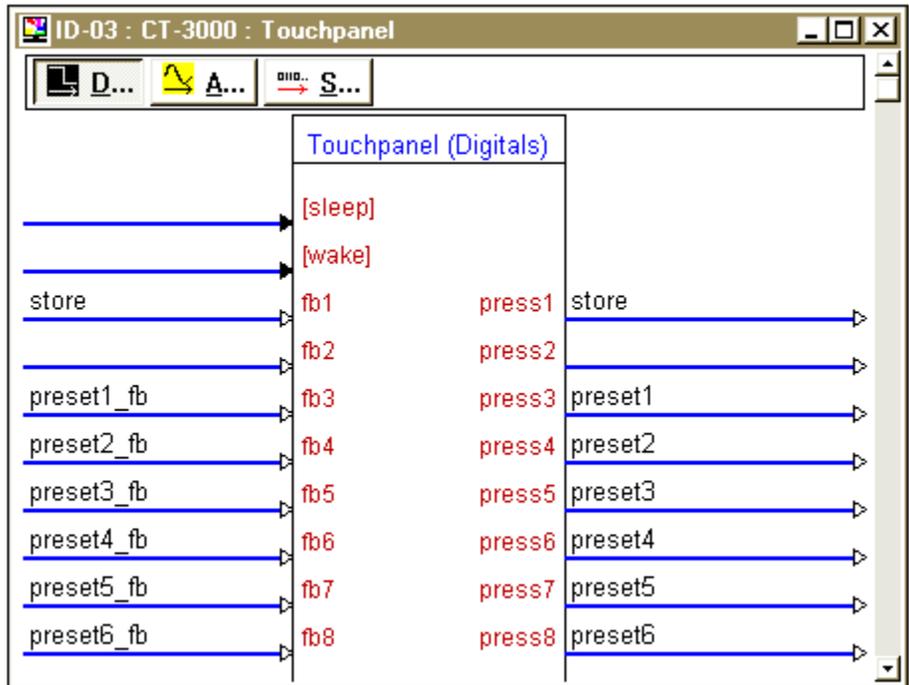
Also add the CNXFZ to the system. Drag and drop the CNXFZ from the Network Control Modules folder into *Slot #9* on the CNMSX-PRO. Verify that the NET ID is set to 40, shown below.

System View of the CNXFZ in SIMPL Windows' Configuration Manager**Programming Manager**

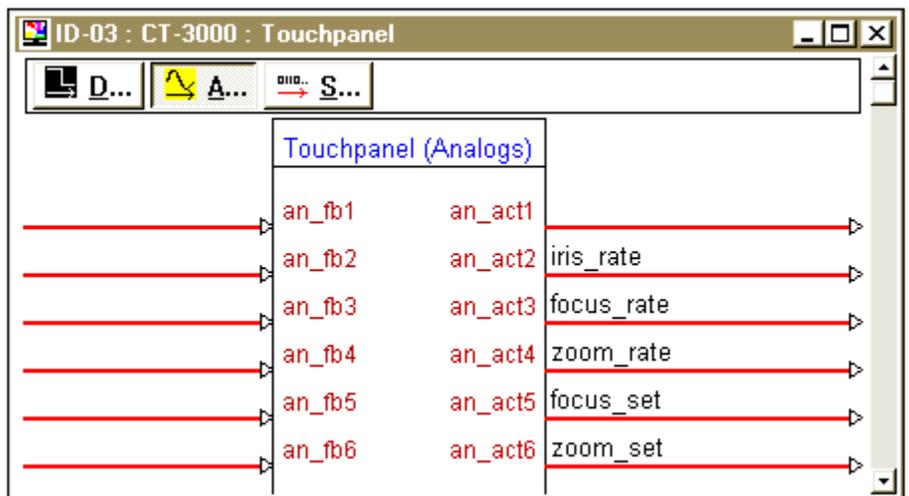
Use the Programming Manager workspace (**Project | Program System**) in SIMPL Windows to select symbols and assign their respective signals. For this example, a touchpanel was added automatically when the device was added to the system in the

Configuration Manager workspace. Expand the Network Modules folder and double click on the CT-3000 for a detail view (alternatively CTRL+D or drag and drop into *Detail View*). Assign digital and analog signals to the touchpanel as shown after this paragraph.

Detail View of the Digital Signals for the CT-3000 in SIMPL Windows' Programming Manager

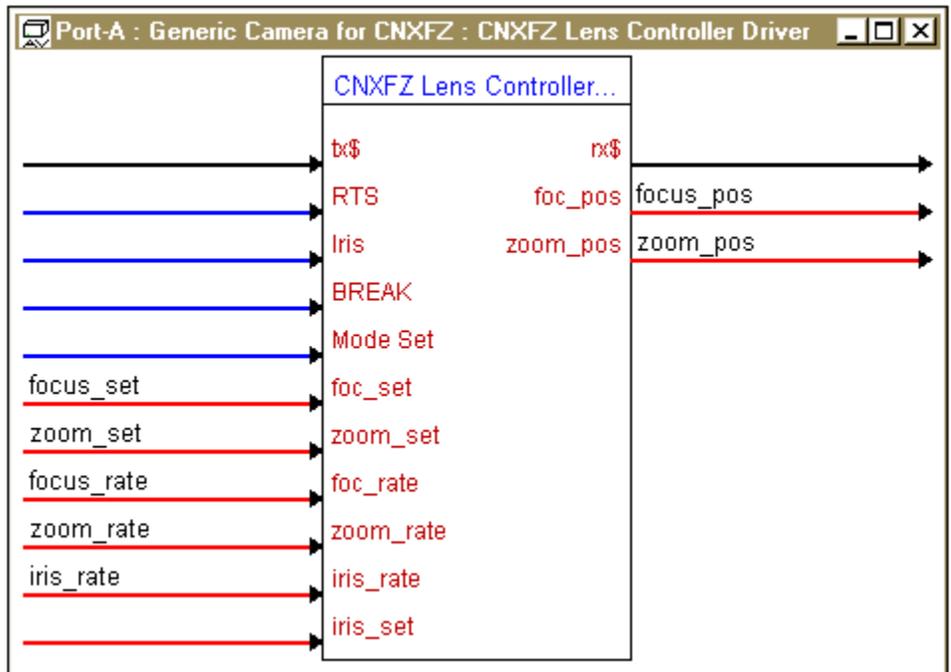


Detail View of the Analog Signals for the CT-3000 in SIMPL Windows' Programming Manager



Also from the Network Modules folder, double click on the CNXFZ and the Port A: CNXFZ Lens Controller Driver icons for a detail view (alternatively CTRL+D or drag and drop into *Detail View*). Assign signals to the CNXFZ as shown after this paragraph.

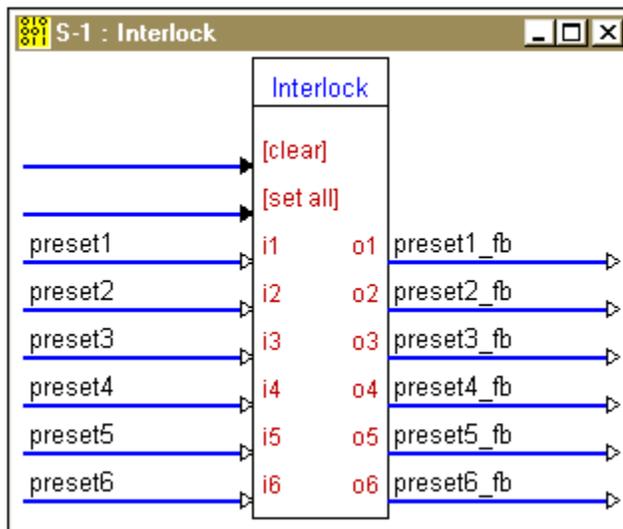
Detail View of the Signals for the CNXFZ in SIMPL Windows' Programming Manager



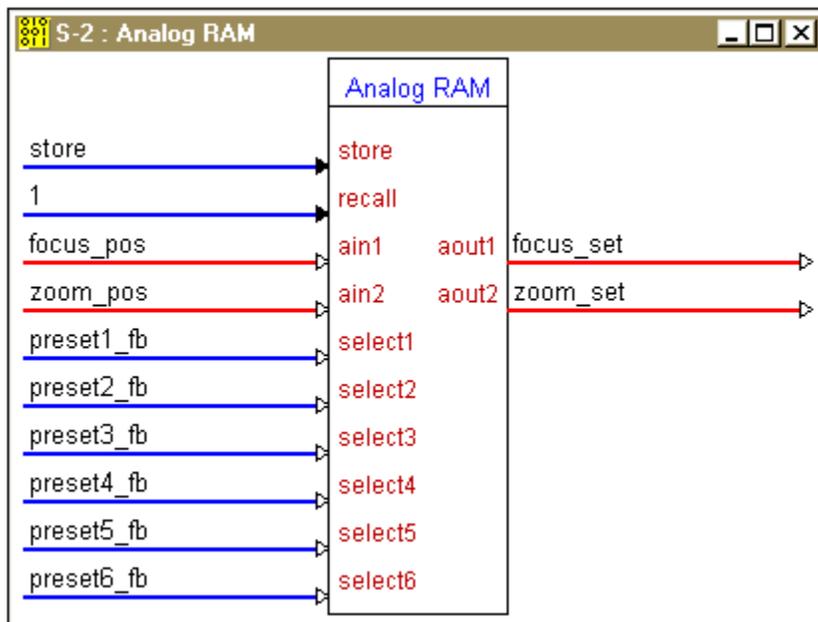
Two logic symbols are necessary for this SIMPL Windows program. They must be added from Logic Symbols folder (*Symbol Library*) in the Programming Manager workspace. In this example, drag and drop an InterLock and Analog RAM symbol from the Memory subfolder into the Logic folder in *Program View*. Expand the Logic folder and double click on the symbol icons for detail views (alternatively CTRL+D or drag and drop into *Detail View*). Assign signals as shown below.

NOTE: Descriptive symbol names can be added by right mouse clicking on the symbol icon in the Logic folder in *Program View* and select **Edit Symbol Comment** (alternatively, highlight the icon and depress Ctrl+R or Tab). Enter a new descriptive name in the "Enter Symbol Comment" dialog box and click **OK**.

Detail View of an Interlock (S-1) in SIMPL Windows' Programming Manager



Detail View of an Analog RAM (S-2) in SIMPL Windows' Programming Manager



Application for an Alternate Method of Control

NOTE: There is no need to recreate the sample programs referenced below. A copy of the programs are available from Crestron's ControlCD (version 5.2 and later) or the Software Downloads page (Examples Library) of the Crestron website (www.crestron.com). Search for the CNXFZ2.ZIP file. This zipped file contains the necessary files to recreate the following programming sample.

This alternate method of control utilizes the VT-3500 and a program for the CNMSX-PRO using the CNXFZ network control module. This example program actually offers two methods of control in one program. In CNXFZ.VTP, there are two pages (Main with buttons and Main with slider). Each represents a different user implementation.

In one method, the user wants buttons to select the focus and zoom action (one button for each direction). The program provides buttons to store and recall presets as well. Use the CNCAMI rate control module from the Crestron Modules folder of the *Symbol Library* to provide an analog output (focus_rate and zoom_rate). These outputs control focus and zoom via two digital (button) inputs.

The other method uses the analog value directly from the touchpanel. Use the "snap-back" feature of an analog slider for a different look. Typically, this appearance is superior, but most users prefer the discrete buttons for real-world control.

Position/Rate Mode Definition

In position mode, a voltage corresponding to a position of the lens (focus or zoom) is fed to the lens interface and the lens moves the motors to the position that corresponds to the input voltage. In rate mode, the voltage fed to the lens corresponds to the rate and direction in which the motor moves. The result is smooth lens movement.

Most lens types operate in rate mode. If position feedback is provided then focus/zoom presets can be recalled. Without feedback, lens presets cannot be achieved in rate mode. Some lenses can switch between rate and position mode; the CNXFZ provides the appropriate connections to facilitate this. This type of lens can achieve presets without feedback.

Problem Solving

Troubleshooting

The table below provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron technical support representative.

CNXFZ Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
CNXFZ does not function. POWER LED is not illuminated.	CNXFZ is not receiving network power.	Confirm power is supplied to the unit.
CNXFZ does not function. NET LED is not illuminated.	CNXFZ is not communicating with the network.	Verify network connection on interface box. Poll network in Performance Viewport.
CNXFZ is not responding.	Loose or broken wiring.	Verify cable ends and wiring.
	CNXFZ ID is not set to match the NET ID.	Poll network in Performance Viewport. Verify that the CNXFZ NET ID is properly set to match the SIMPL program.
	CNXFZ ID is not unique; two or more units share the same ID.	Poll network in Performance Viewport. Verify that each ID is used once.
	ID setting changed after CNXFZ powered up.	Power down CNXFZ. Power up to reset ID.

Further Inquiries

If after reviewing this Operations Guide for the CNXFZ, you cannot locate specific information or have questions, please take advantage of Crestron's award winning technical support team by calling:

- In the US and Canada, call Crestron's corporate headquarters at 1-888-CRESTRON [1-888-273-7876] or 1-201-767-3400.
- In Europe, call Crestron International at +32-15-50-99-50.
- In Asia, call Crestron Asia at +852-2341-2016.
- In Latin America, call Crestron Latin America at +5255-5093-2160.
- In Australia, call Crestron Pacific at +613-9480-2999.

For local support from exclusive Crestron factory-trained personnel in New Zealand call Amber Technologies at +649-410-8382.

Return and Warranty Policies

Merchandise Returns / Repair Service

1. No merchandise may be returned for credit, exchange, or service without prior authorization from CRESTRON. To obtain warranty service for CRESTRON products, contact the factory and request an RMA (Return Merchandise Authorization) number. Enclose a note specifying the nature of the problem, name and phone number of contact person, RMA number, and return address.
2. Products may be returned for credit, exchange, or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to CRESTRON, Cresskill, N.J., or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. CRESTRON reserves the right in its sole and absolute discretion to charge a 15% restocking fee, plus shipping costs, on any products returned with an RMA.
3. Return freight charges following repair of items under warranty shall be paid by CRESTRON, shipping by standard ground carrier. In the event repairs are found to be non-warranty, return freight costs shall be paid by the purchaser.

CRESTRON Limited Warranty

CRESTRON ELECTRONICS, Inc. warrants its products to be free from manufacturing defects in materials and workmanship under normal use for a period of three (3) years from the date of purchase from CRESTRON, with the following exceptions: disk drives and any other moving or rotating mechanical parts, pan/tilt heads and power supplies are covered for a period of one (1) year; touchscreen display and overlay components are covered for 90 days; batteries and incandescent lamps are not covered.

This warranty extends to products purchased directly from CRESTRON or an authorized CRESTRON dealer. Purchasers should inquire of the dealer regarding the nature and extent of the dealer's warranty, if any.

CRESTRON shall not be liable to honor the terms of this warranty if the product has been used in any application other than that for which it was intended, or if it has been subjected to misuse, accidental damage, modification, or improper installation procedures. Furthermore, this warranty does not cover any product that has had the serial number altered, defaced, or removed.

This warranty shall be the sole and exclusive remedy to the original purchaser. In no event shall CRESTRON be liable for incidental or consequential damages of any kind (property or economic damages inclusive) arising from the sale or use of this equipment. CRESTRON is not liable for any claim made by a third party or made by the purchaser for a third party.

CRESTRON shall, at its option, repair or replace any product found defective, without charge for parts or labor. Repaired or replaced equipment and parts supplied under this warranty shall be covered only by the unexpired portion of the warranty.

Except as expressly set forth in this warranty, CRESTRON makes no other warranties, expressed or implied, nor authorizes any other party to offer any other party to offer any warranty, including any implied warranties of merchantability or fitness for a particular purpose. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supercedes all previous warranties.

Trademark Information

All brand names, product names, and trademarks are the sole property of their respective owners. Windows is a registered trademark of Microsoft Corporation. Windows95/98/Me/XP and WindowsNT/2000 are trademarks of Microsoft Corporation

Appendix: Application Examples

The application examples in this appendix suggest the lens cabling connection for the lens type jumper (A through D) to be used for a given camera lens. The camera lens pins are listed in the left-most column. The CNXFZ LENS connector pins are listed in the right-most column.

Lens Cabling Connection for Jumper A (+/-12V)

Canon

J6 x 11REA

3 (RED)	—	Lens Common	—	2
				<u>FOCUS</u>
2 (WHT)	←	Focus Motor Drive	—	1
8 (RED/BLK)	←	Feedback Supply	—	12
7 (WHT/BLK)	—	Focus Feedback	→	14
				<u>ZOOM</u>
1 (BLK)	←	Zoom Motor Drive	—	3
4 (GRN)	—	Zoom Feedback	→	13
6 (BLU)	—	Zoom Ground	—	15

OR

Panasonic WV-LZ81/10 (presets not supported)

HIRSCHMAN

CONNECTOR

1	—	Lens Common	—	2
				<u>FOCUS</u>
3	←	Focus Motor Drive	—	1
				<u>ZOOM</u>
4	←	Zoom Motor Drive	—	3

OR

Cosmicar H6ZAHE-2P and C6Z1218H2ESP-2

CONNECTOR

J4 (DIN 8)

2	—	Lens Motor Common	—	2
				<u>FOCUS</u>
5	←	Focus Motor Drive	—	1
7	←	Feedback Supply	—	12
3	←	Focus Feedback	→	14
8	←	Feedback Ground	—	15
				<u>ZOOM</u>
4	←	Zoom Motor Drive	—	3
1	—	Zoom Feedback	→	13

Lens Cabling Connection for Jumper B (+/-8V)

Computer			
<u>H10Z0812M</u>			
red,blk	←	Lens Common	→ 2
			<u>FOCUS</u>
green	←	Focus Motor Drive	→ 1
purple	←	Feedback Supply	→ 12
blue	→	Focus Feedback	→ 14
orange	→	Feedback Ground	→ 15
			<u>ZOOM</u>
yellow	←	Zoom Motor Drive	→ 3
grey	→	Zoom Feedback	→ 13

Lens Cabling Connection for Jumper C (+2.5V to +7.5V)

Fujinon MD/BMD/SD Series and Canon KTS/KTS-A Series			
CONNECTOR			
<u>J2/CN2</u>			
8	←	Focus Control	→ 1
3	→	Ground	→ 2,4,10
9	←	Zoom Control	→ 3
2	←	Zoom Speed/Pos Sig	→ 5
1	←	Focus Speed/Pos Sig	→ 5
10	←	Iris Speed/Pos Sig	→ 5
7	→	Signal Common	→ 6
11	→	+V1(+7.5V)	→ 7
5	←	Iris Control	→ 8
4	←	Iris Mode (Local/Camera)	→ 11

Lens Cabling Connection for Jumper D (+/-6V)

CONNECTOR			
<u>8000-9801-00</u>			
4	←	Lens Common	→ 2
			<u>FOCUS</u>
3	←	Focus Motor Drive	→ 1
6	←	Feedback Supply	→ 12
8	→	Focus Feedback	→ 14
5	→	Feedback Ground	→ 15
			<u>ZOOM</u>
2	←	Zoom Motor Drive	→ 3
7	→	Zoom Feedback	→ 13
9	→	Ground	→ 4



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REMOTE CONTROL SYSTEMS

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*Specifications
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Doc. 5753
06.99

