Crestron **ST-CS**
Current Sensor Module
Operations Guide

CRESTRON

This document was prepared and written by the Technical Documentation department at:

Crestron Electronics, Inc.
15 Volvo Drive
Rockleigh, NJ 07647
1-888-CRESTRON

All brand names, product names and trademarks are the property of their respective owners.
© 2004 Crestron Electronics, Inc.

Contents

Current Sensor Module: ST-CS **1**

Introduction 1
Features and Functions 1
Specifications 2
Physical Description 3
Setup 7
Identity Code 7
Hardware Hookup 8
Threshold Adjustment 10
Programming Software 10
Earliest Version Software Requirements for the PC 11
Programming with SIMPL Windows 11
Uploading 14
Communication Settings 14
Uploading a SIMPL Windows Program 16
Problem Solving 17
Troubleshooting 17
Further Inquiries 18
Future Updates 18
Return and Warranty Policies 19
Merchandise Returns / Repair Service 19
CRESTRON Limited Warranty 19

Current Sensor Module: ST-CS

Introduction

Features and Functions

There are two Crestron® Current Sensor Module configurations available: ST-CS and STI-CS. Configuration is based on the type of power availability. Use the ST-CS with a 120V power supply for 120 VAC devices, and the STI-CS with a 220V power supply for 220 VAC devices. For purposes of this Operations Guide, the term ST-CS is used for either configuration, except where noted.

The ST-CS measures the average current of each half cycle of an AC load. The current sensing circuitry is highly sensitive with a wide range of adjustment. The high sensitivity makes the ST-CS ideally suited for use with low power units as VCRs, TV tuners, and satellite receivers. The wide range makes the ST-CS ideally suited for medium and high-powered units such as TV sets, video projectors, and power amplifiers up to 10 A total load (6 A for STI-CS).

When the ST-CS electronic circuit senses that the average current drawn by a monitored unit exceeds the FULL LOAD preset threshold, the full load LED (labeled FULL) illuminates. The ST-CS sends a signal to the control system indicating the current ST-CS status.

Secondary circuitry senses and determines whether the average current is less than the FULL LOAD preset, but more than no load. This PARTIAL LOAD threshold is also adjustable. The FULL LOAD and PARTIAL LOAD circuitry is mutually exclusive; only one definite status is communicated to the control system. The FULL and PARTIAL LEDs are illuminated one at a time.

Threshold adjustments are accomplished by use of a 15-turn precision potentiometer (POT). The POT permits highly accurate and repeatable current threshold settings.

Functional Summary

- Ideally suited for use with large TVs (minimum load specification 0.033A, 4W).
- The wide range makes the ST-CS ideally suited for medium and high-powered units such as TV sets, video projectors, and power amplifiers.
- Rack mountable with optional ST-RMK (1 space height).

Specifications

The following table provides a summary of specifications for the ST-CS module.

ST-CS Specifications

SPECIFICATION	DETAILS
Power Requirements	3 Watts (.25A @ 24VDC) - Cresnet or 0.5A @ 12 VDC external power supply (PW-1205 supplied with ST-CS, PWI-1210 supplied with STI-CS)
Default Net ID	18
Control System Update Files [1, 2, 3]	
2-Series Control System	Version C2-2.000.CUZ or later
CEN/CN-TVAV	Version 5.10.13V.UPZ or later
CNMSX-AV/Pro	Version 5.01.35X.UPZ or later
CNRACKX/-DP	Version 5.01.35W.UPZ or later
ST-CP	Version 4.02.04S.UPZ or later
Maximum AC Load	10 A, 1 KW @ 120 VAC (ST-CS) 6 A, 1 KW @ 220 VAC (STI-CS)
Minimum AC Load	0.033 A, 4 W @ 120 VAC
Voltage Range	0 to 220 VAC, 45 to 65 Hz
Ports/Connectors	
NET	Two 6-pin, RJ type connectors
POWER A	One 3-pin AC connector (ST-CS) One 3 conductor, six-foot cable (STI-CS)
POWER B	One 3-pin AC connector (ST-CS) One 3 conductor, six-foot cable (STI-CS)
12 VDC, 0.5A	One – Male receptacle for external power pack
POWER IN	One 3-conductor cable
Rack Space	1 unit high, ½ unit wide
Environmental Temperature	41° to 113°F (5° to 45°C)
Environmental Humidity	10% to 90% RH (non-condensing)
Dimensions & Weight	Height: 1.70 in (4.318 cm) Width: 7.07 in (17.95 cm) Depth: 6.32 in (16.06 cm) Weight: 2.72 lb (1.23 kg) ST-CS 2.96 lb (1.34 kg) STI-CS

1. The latest software versions can be obtained from the Downloads | Software Updates section of the Crestron website (www.crestron.com). Refer to the note below.
2. Crestron 2-Series control systems include the AV2, CP2/CP2E, MP2/MP2E, PAC2, PRO2, QM-RMC, QM-RMCRX and RACK2.
3. Filenames for CNX and ST-CP update files have a UPZ extension. Files on the website may be .zip or self-extracting .exe files containing the .cuz or .upz file. To avoid program problems, make sure you are using the update file with the correct suffix letter (e.g., S, V, W, X).

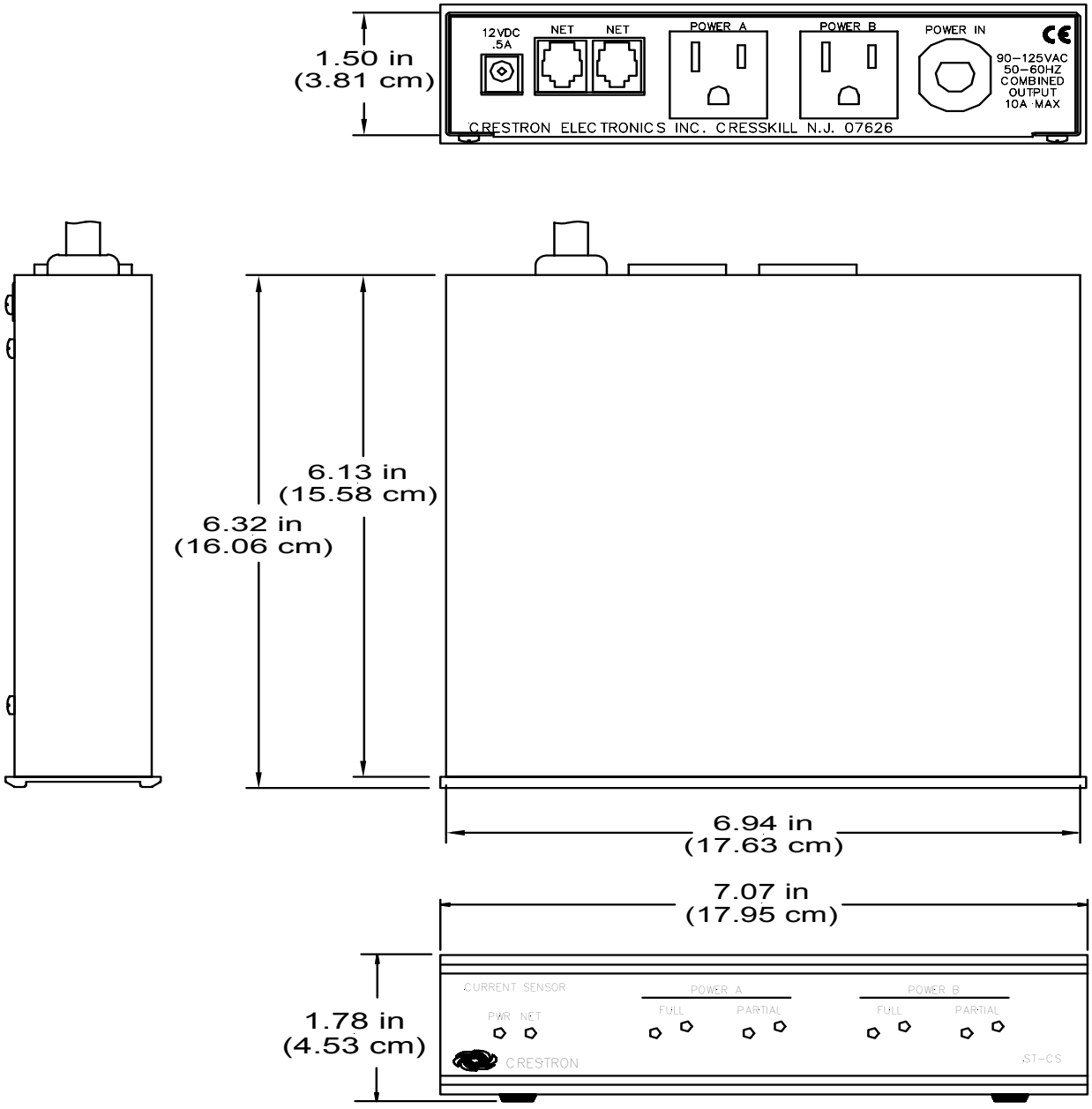
NOTE: Crestron software and any files on the website are for Authorized Crestron dealers and Crestron Authorized Independent Programmers (CAIP) only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

Physical Description

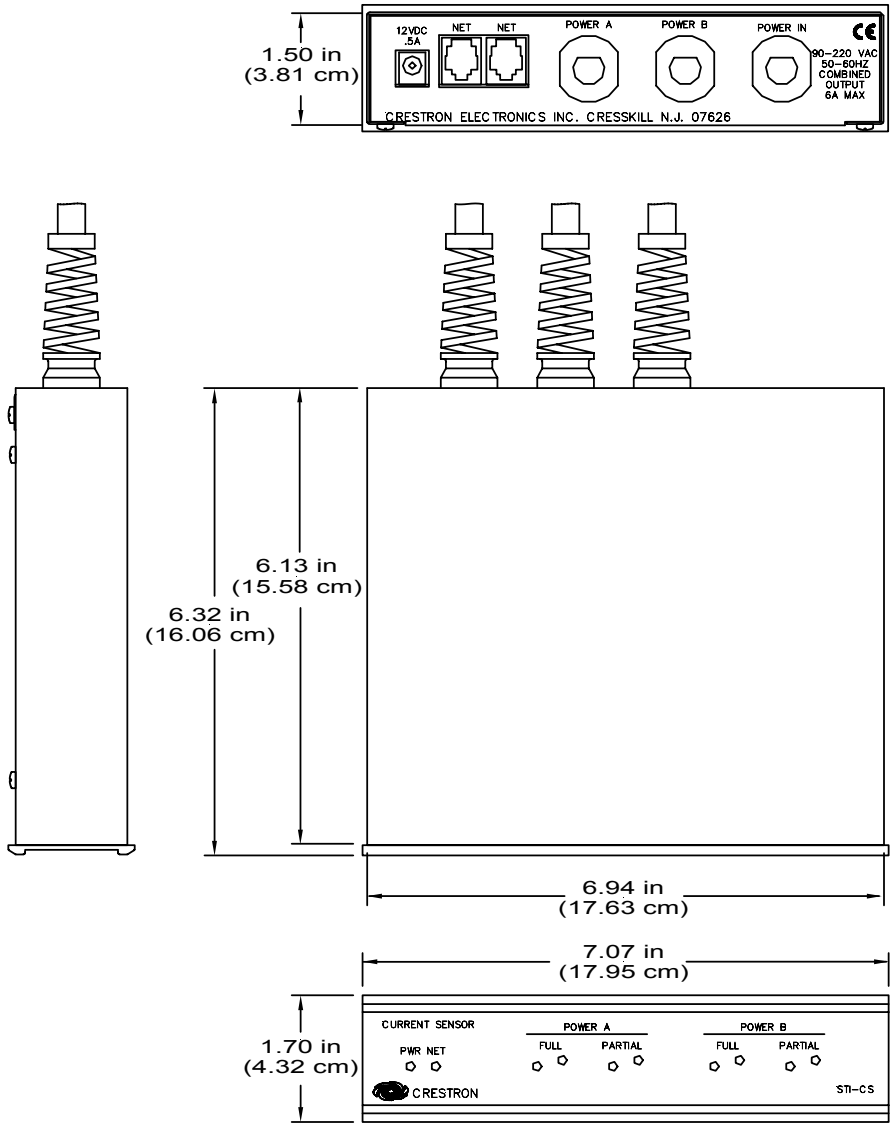
The ST-CS is housed in a black enclosure with labels on the front and rear panels. On the front of the unit there are six LEDs for indicating current status, power, and Cresnet activity. The front panel provides four potentiometers (POTs) for adjusting the current sensing sensitivity. All connections are made on the back of the unit. The proper domestic and international power cords and plugs are used on the ST-CS and STI-CS, respectively. Refer to the physical views shown below. There are four rubber feet on the base of the unit for stability and to prevent slippage.

ST-CS Front and Back Views (120 VAC Version)

ST-CS Physical Views (120 VAC Version)



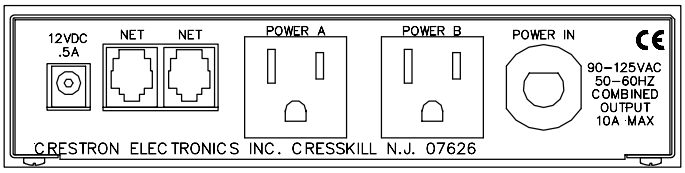
STI-CS Physical Views (220 VAC Version)



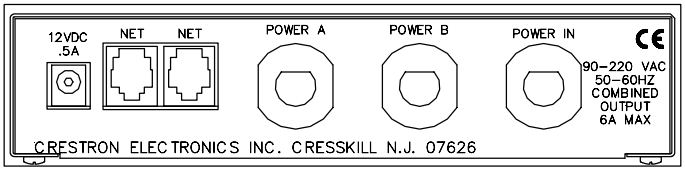
Ports

A number of ports and plugs are provided on the back of the ST-CS. Each has a silk-screened label. Refer to the following illustrations and descriptions.

ST-CS Ports and Plugs



STI-CS Ports and Plugs



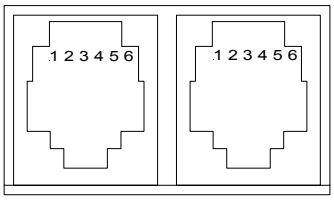
12 VDC .5 A

This DC power socket connector is used to supply external power via the supplied 500 mA power pack (1000 mA power pack for STI-CS). The supplied power pack is optional when the ST-CS receives network power.

NET

These two 6-pin, RJ-12 modular jacks are used to connect the ST-CS module to a control system. When the module is part of the Cresnet® system, power may be supplied via NET if within system power and cable length limits; the supplied power pack is optional and need not be attached. Two NET ports are available so that network units can be daisy-chained together. Review the latest revision of the Network Modular Cable Requirements (Doc. 5682).

NET Connectors



PIN	SIGNAL
1	+24
2	+24
3	Y
4	Z
5	GND
6	GND

NOTE: Most 4-conductor phone cables are wired in a crisscross fashion and are not compatible with Crestron equipment.

If the power pack is attached when the module is part of a Cresnet system, power is drawn from the power pack (the module does not draw from the network power).

POWER A and POWER B

For the ST-CS, two three-prong socket connectors are provided to connect to any device that requires current sensing.

For the STI-CS, two international power cords (approximately six feet in length) are available for connection to an international power socket.

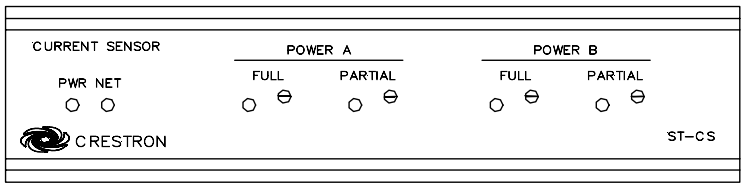
POWER IN

For the ST-CS, a three-prong plug is used to connect to a three-prong outlet that supplies power. For the STI-CS, an international power cord (approximately six feet in length) is available for connection to an international power plug.

ST-CS Indicators and User Adjustments

There are six LED indicators and four POTS located on the front panel of the ST-CS. Refer to illustration and descriptions below.

ST-CS Indicators and Adjustments



PWR (Power)

This LED illuminates when 12 volts or 24 volts DC is supplied to the ST-CS.

NET

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

FULL (POWER A & B)

These LEDs illuminate when full load threshold has been exceeded.

Clockwise ↻ rotation of the 15-turn POT decreases threshold (i.e., increases sensitivity) and changes partial load threshold, accordingly.

PARTIAL (POWER A & B)

These LEDs illuminate when partial load threshold has been exceeded.

Clockwise ↻ rotation of the 15-turn POT decreases threshold (i.e., increases sensitivity).

Setup

Identity Code

All equipment and user interfaces within the network require a unique identity code (Net ID). These codes are two-digit hexadecimal numbers from 03 to FE. The Net ID of each unit must match an ID code specified in the SIMPL Windows program. Refer to "Setting the Net ID in Device Settings" on page 12 for details of the SIMPL Windows procedure.

Refer to the note on page 14 for a definition of Viewport.

The Net ID of the ST-CS has been factory set to **18**, The Net IDs of multiple ST-CSs in the same system must be unique. Net IDs are changed from a personal computer (PC) via the Crestron Viewport.

NOTE: For detailed information on establishing communication between the PC and control system, refer to "Communication Settings" on page 14. If communication cannot be established, refer to the "Troubleshooting Communications" section in the respective Operations Guide for the control system.

Use the following instructions to set or change the Net ID.

1. Ensure that the device requiring a Net ID change is the only Cresnet unit connected to the control system.
2. Open the Crestron Viewport.
3. From the Viewport menu, select **Functions | Set Network ID**. The software checks the baud rate and then opens the "Set Network ID" window.
4. In the "Set Network ID" window, select the device requiring a Net ID change from the *Current Network Devices* text window.
5. Select the new Net ID for the device from the *Choose the new network ID for the selected device (Hex):* text box.
6. Click **Set ID** to initiate the change. This will display the "ID command has been sent" window.
7. In the "Command Complete" window, click **OK**.
8. In the *Current Network Devices* text window, verify the new Net ID code.
9. In the "Set Network ID" window, click **Close**.

NOTE: The new Net ID code may also be verified by selecting **Diagnostic | Report Network Devices** in the Viewport (alternately, select **F4**).

10. Repeat this procedure for each additional network device requiring a Net ID change.

Hardware Hookup

Refer to the following hookup diagram. Other than making the power connection last, complete the connections in any order.

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

NOTE: When installing network wiring, refer to the latest revision of the wiring diagram(s) appropriate for your specific system configuration, available from the Downloads | Product Manuals | Wiring Diagrams section of the Crestron website (www.crestron.com).

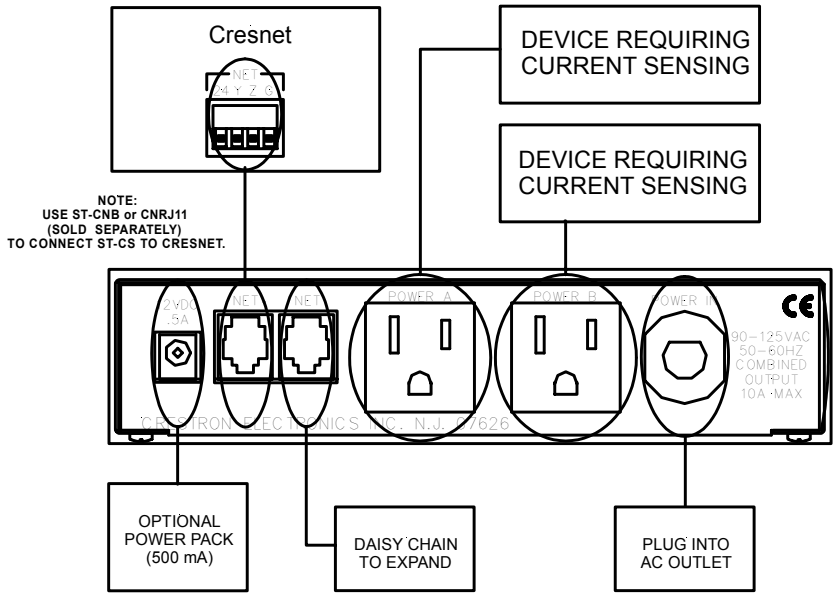
The following diagram shows connection to Cresnet. The threshold adjustment procedure that follows provides the steps necessary to properly attach a device that needs to be sensed (i.e., display device) to the ST-CS POWER A connector and adjust the POTS. If necessary, repeat the steps and attach a second device to POWER B.

NOTE: Do not attempt adjustments during periods of high or low power line voltage or voltage fluctuations.

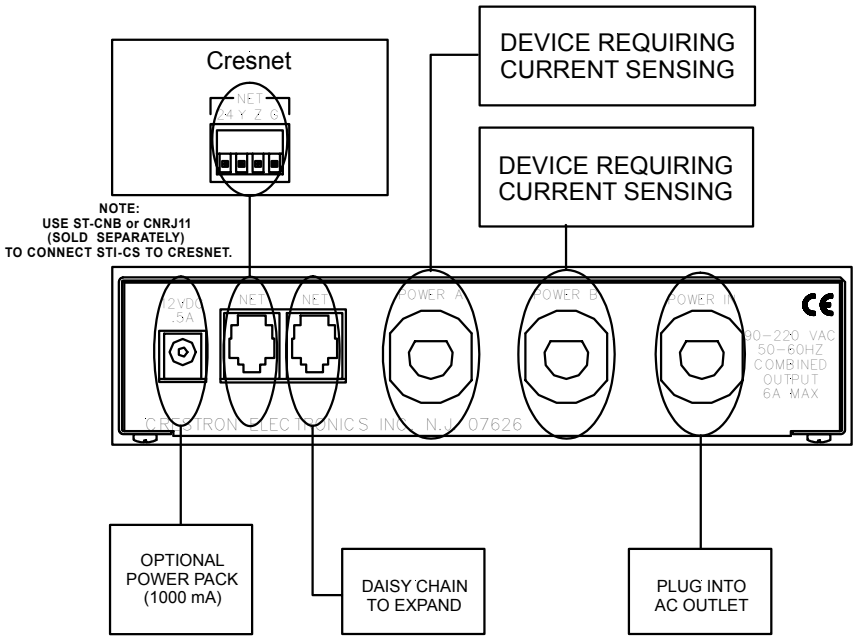
NOTE: The partial power adjustment may be used as the primary output instead of the full adjustment if increased sensitivity is required.

NOTE: If the partial power adjustment is not required, it may be placed in any position that does not cause the LEDs to flash.

Hookup Connections for ST-CS



Hookup Connections for STI-CS



Threshold Adjustment

1. Attach the ST-CS power plug (labeled POWER IN) to a live AC outlet.
2. Connect the ST-CS to Cresnet; use ST-CNB, CNRJ11 or C2N-HBLOCK (each sold separately).
3. If using the external power pack, attach the supplied power pack to the 12V power connector (labeled 12 VDC .5A). If connecting to Cresnet, 24 VDC is provided by the network.
4. Observe illumination of the PWR LED when power is supplied to the ST-CS.
5. Observe illumination of the NET LED when communication to Cresnet is established.

NOTE: If the NET LED is not illuminated, do not proceed. Refer to "Identity Code" on page 7 and reassign the Net ID, if necessary. Ensure that a valid program is loaded into the control system.

6. Rotate full load POT (labeled FULL) clockwise ↻ to adjust the POT to maximum range.
7. Rotate partial load POT (labeled PARTIAL) clockwise ↻ to adjust the POT to maximum range.
8. Attach the device power cord to the ST-CS power socket (labeled POWER A).
9. Power on the device and observe illumination of the full load LED (labeled FULL).
10. Slowly rotate the full load POT counterclockwise ↺ until the full load LED extinguishes and the partial load LED (labeled PARTIAL) illuminates.
11. Slowly rotate the full load POT clockwise ↻ until the full load LED illuminates again. The threshold has been determined.
12. Power off the device. And observe that the full load LED extinguishes and the partial load LED illuminates.
13. Slowly rotate the partial load POT counterclockwise ↺ until the partial LED extinguishes.
14. Slowly rotate the partial load POT clockwise ↻ until the partial load LED illuminates again. The threshold has been determined.

Programming Software

NOTE: Have a question or comment about Crestron software?

Answers to frequently asked questions (FAQs) can be viewed in the Online Help section of the Crestron website (www.crestron.com). To post a question or view questions you have submitted to Crestron's True Blue Support, log in at http://www.crestron.com/accounts/login.asp. First-time users will need to establish a user account.

Earliest Version Software Requirements for the PC

NOTE: Crestron recommends that you use the latest software to take advantage of the most recently released features. The latest software is available from the Downloads | Software Updates section of the Crestron website (www.crestron.com).

The following are the earliest useable software version requirements for the PC:

- SIMPL Windows, any version. Requires SIMPL+ Cross Compiler version 1.1.
- Crestron Database, any version. Required by SIMPL Windows.
- Crestron Viewport version 3.35 or later.

Programming with SIMPL Windows

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

NOTE: The following are file extensions for programs that include an ST-CS, developed for specific control system types:

.smw	source file
.spz	compiled file for 2-series
.bin	compiled file for CNX generation
.csz	compiled file for CNX generation with SIMPL+
.ush	compiled file for CNX generation with SIMPL+ header file
.usp	source code module for SIMPL+
.umc	user macro for SIMPL

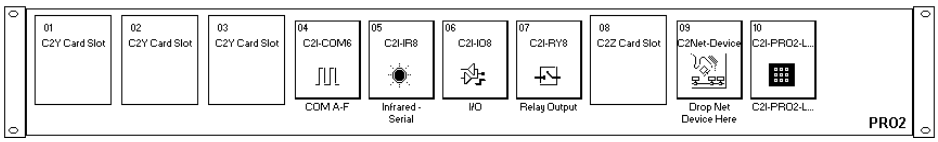
NOTE: In the following description, the PRO2 control system is used.

SIMPL Windows is Crestron's 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. SIMPL Windows offers drag and drop functionality in a familiar Windows® environment.

This section describes a sample SIMPL Windows program that includes an ST-CS.

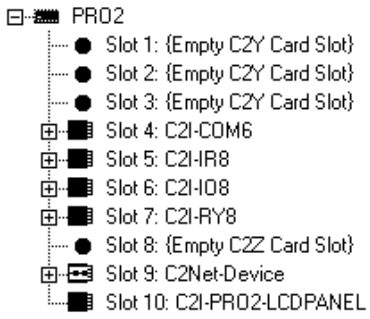
Configuration Manager is where programmers "build" a Crestron control system by selecting hardware from the *Device Library*. In Configuration manager, drag the PRO2 from the *Control Systems* folder of the *Device Library* and drop it in the upper pane of the *System Views*. The PRO2 with its associated communication ports is displayed in the *System Views* upper pane.

PRO2 System Views



The *System Views* lower pane displays the PRO2 system tree (refer to the following graphic). This tree can be expanded to display and configure the communication ports.

Expanded PRO2 System Tree

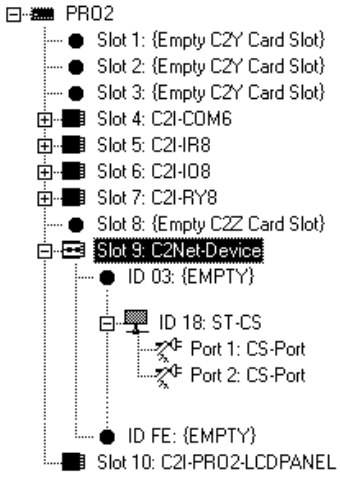


C2Net-Device Slot in Configuration Manager

To incorporate an ST-CS into the system, drag the ST-CS from the Cresnet Control Modules | Cresnet I/O Control & Other Modules folder of the *Device Library* and drop it in *System Views*. The PRO2 system tree displays the ST-CS in Slot 9, with a default Net ID of 18 as shown in the following illustration.

NOTE: The first ST-CS in a system is preset with a Net ID of 18 when its symbol is dragged into the upper pane of *System Views*. Additional ST-CS units are assigned different Net ID numbers as they are added.

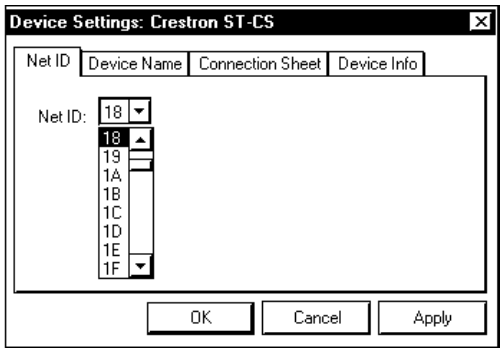
C2Net Device, Slot 9



Setting the Net ID in Device Settings

Double-click the ST-CS icon to open the "Device Settings" window. This window displays the ST-CS device information. If necessary, select the *Net ID* tab to change the Net ID as shown in the following figure.

ST-CS "Device Settings" Window

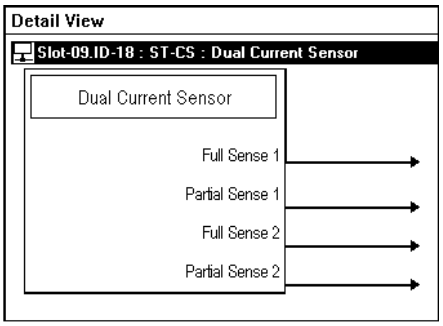


NOTE: SIMPL Windows automatically changes the Net ID values of a device added to a program if a duplicate device or a device with the same default Net ID already exists in the program. Always ensure that the hardware and software settings of the Net ID match. For Net ID hardware setting details, refer to "Identity Code" on page 7.

ST-CS Symbol in Programming Manager

Programming Manager is where programmers "program" a Crestron control system by assigning signals to symbols. The following graphic shows the ST-CS symbol in the SIMPL Windows' Programming Manager.

ST-CS SIMPL Windows Symbol



The ST-CS incorporates two independent current sensors in one unit. The <**Full Sense**> outputs go high whenever the average current drawn by a monitored device exceeds the upper threshold that is specified for that device.

The <**Partial Sense**> outputs go high when the current drawn by the device exceeds an intermediate threshold.

Device Extenders

To facilitate network functions and diagnostics, SIMPL Windows provides two device extenders for the ST-CS.

The Poll Manager and The Poll Manager (2 Series Extended) symbols are device extenders for plug-in control cards and for Cresnet devices and touchpanels. The Poll Manager takes the device on and offline without need to physically disconnect it from the network, and reports the current connection status of the device.

The device extenders are available with X-Series and 2-Series control systems; they are not available with the ST-CP or CN-Series control systems.

To add a device extender, right-click the ST-CS in *Program View*, point to Insert Device Extender and select the desired device extender. To program a device extender, expand the ST-CS in *Program View* and drag the device extender to *Detail View*.

Uploading

Assuming a PC is properly connected to the entire system, Crestron programming software allows the programmer to upload programs and projects after their development to the system and network devices. However, there are times when the files for the program and projects are compiled and not uploaded. Instead, compiled files may be distributed from programmers to installers, from Crestron to dealers, etc. In those instances, one has the option to upload via the programming software or to upload via the Crestron Viewport.

NOTE: The Crestron Viewport is available as a pull-down command from SIMPL Windows and VT Pro-e (**Tools | Viewport**) or as a standalone utility. The Viewport utility performs multiple system tasks, primarily via an RS-232 or TCP/IP connection between the control system and a PC. It is used to observe system processes, upload new operating systems and firmware, change system and network parameters, and communicate with network device consoles and touchpanels, among many other tasks. Viewport can function as a terminal emulator for generic file transfer. All of these functions are accessed through the commands and options inViewport menus. Therefore, for its effectivness as a support and diagnostic tool, the Crestron Viewport may be preferred over development tools when uploading programs and projects.

NOTE: Firmware for the ST-CS is not upgradable in the field.

The following section defines how to upload a SIMPL Windows program. Before attempting to upload, it is necessary to establish communications.

Communication Settings

NOTE: For laptops and other PCs without a built-in RS-232 port, Crestron recommends the use of PCMCIA cards, rather than USB-to-serial adapters. If a USB-to-serial adapter must be used, Crestron has tested the following devices with good results:

Belkin (large model) F5U103
I/O Gear GUC232A
Keyspan USA-19QW

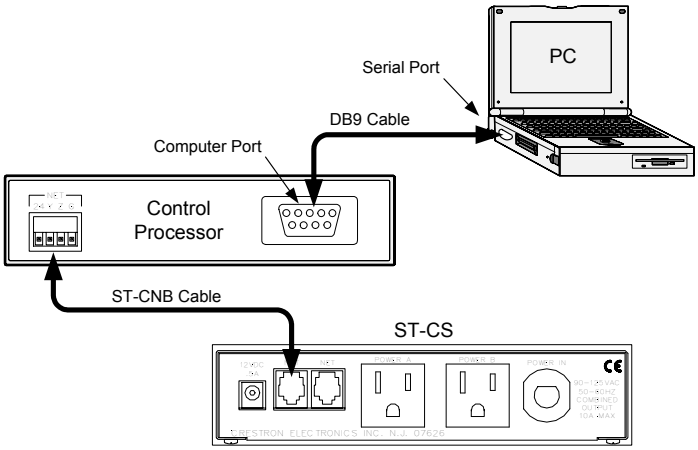
Other models, even from the same manufacturer, may not yield the same results.

The procedure in this section provides details for RS-232 communication between the PC and the control system. If TCP/IP communication is preferred, consult the latest version of the Crestron e-Control Reference Guide (Doc. 6052) or the respective Operations Guide for the control system. These documents are available

from the Downloads | Product Manuals section of the Crestron website (www.crestron.com). Refer to the following figure for a typical connection diagram when uploading files.

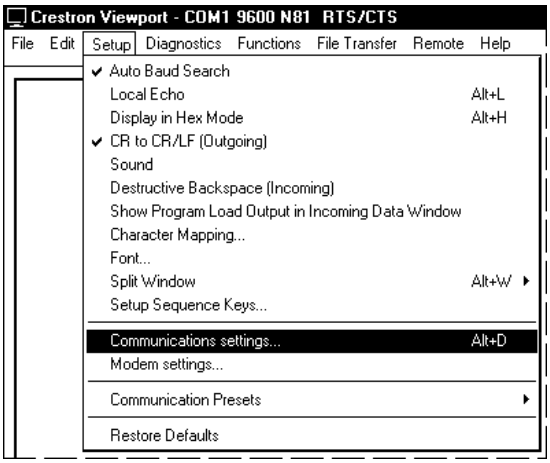
NOTE: Use a standard DB9 male to female "straight-through" cable.

Typical Connection Diagram when Uploading



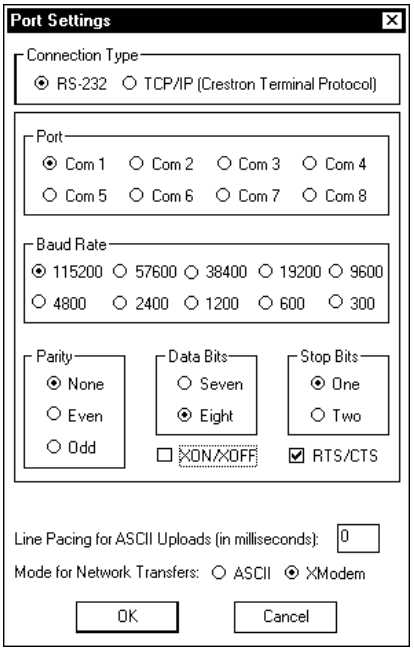
1. Open the Crestron Viewport.
   Either launch the standalone version of Viewport, or start SIMPL Windows, and from the menu bar, select **Tools | Viewport**.
2. Refer to the following illustration. From the Viewport menu, select **Setup | Communications settings** (alternatively, press **Alt+D**) to open the "Port Settings" window.

   Setup | Communications Settings Command



3. Select **RS-232** as the connection type. Verify that an available COM port (COM 1 is shown after this step) is selected, and that all communication parameters and necessary options from the "Port Settings" window are selected as shown after this step. Click the **OK** button to save the settings and close the window.

"Port Settings" Window



NOTE: The parameters shown in the illustration above are the port settings for a 2-Series control system. Consult the Operations Guide for the control system being used for the exact parameter selection.

4. To verify communication, select **Diagnostics | Establish Communications (Find Rack)**. This should display a window that gives the COM port and baud rate. If communications cannot be established, refer to the "Troubleshooting Communications" section in the respective Operations Guide for the control system.

Uploading a SIMPL Windows Program

A control system source file has the extension .smw. A compiled SIMPL Windows file has the extension .spz for a 2-Series control system, .bin for CNX generation, and .csz for CNX generation with SIMPL+.

The SIMPL Windows file can be uploaded to the control system using SIMPL Windows or via the Crestron Viewport.

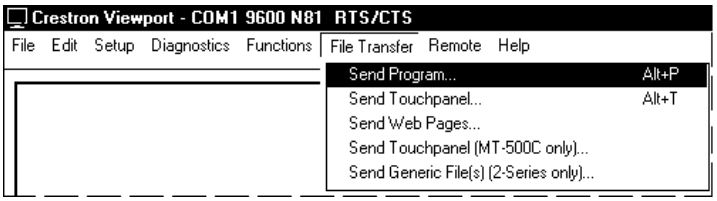
Upload via SIMPL Windows

1. Start SIMPL Windows.
2. Select **File | Open** to view the "Open" window, navigate to the SIMPL Window file (.smw), and click **Open**.
3. Select **Project | Transfer Program**.

Upload via Crestron Viewport

1. Verify that the procedure for "Communication Settings" that begins on page 14 has been performed.
2. As shown after this step, select **File Transfer | Send Program** (Alternatively, press **Alt+P**) from the Viewport menu.

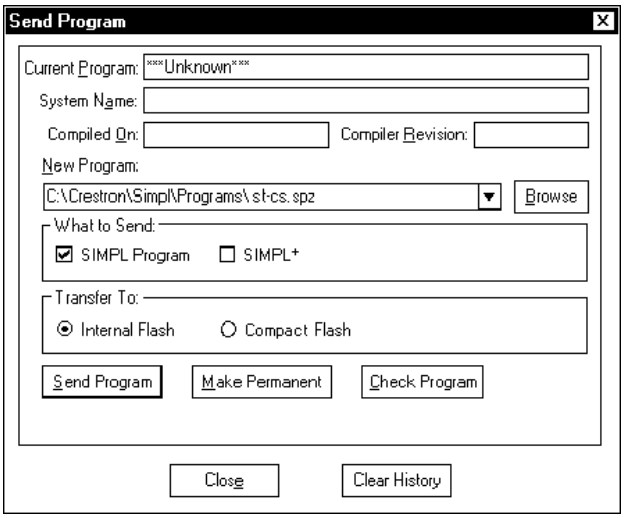
File transfer | Send Program Command



3. The "Send Program" window appears as shown after this step. Click **Browse**, locate the completed file (.spz for PRO2) and click **Open**. This displays the program's header information and enables one or both of the *What to Send* check boxes. If the program does not contain any SIMPL+ modules, only the *SIMPL Program* check box is enabled. If it does contain SIMPL+ modules, then the *SIMPL+ Program(s)* check box will also be enabled. Select one or both check boxes and then click **Send Program** to begin the transfer.

NOTE: Refer to the respective Operations Guide for control system details about the other fields in the "Send Program" window.

"Send Program" Window



4. To verify that the program has been transferred successfully, select **Diagnostics | Report Program Information**. This should display a window that provides details about the current program loaded into the control system.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

ST-CS Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Unexpected response from control system.	Network devices are not communicating to the control system.	From the Viewport, poll the network (F4) to verify communication.
Green PWR LED does not illuminate.	ST-CS is not receiving power.	Confirm that power pack is securely plugged into outlet and the connector is properly attached to the ST-CS.
		Verify that proper cables are securely attached to ST-CS NET connectors (for Cresnet system only).
	Incorrect power supply.	Use a Crestron power supply. Refer to “Specifications”.
Yellow NET LED does not Illuminate.	Improper Net ID.	Verify that ST-CS Net ID matches the Net ID in the SIMPL Windows program. Refer to "Identity Code".
	Loose network connection.	Verify cables attached to ST-CS NET connectors are proper and secure.
Does not operate reliably.	Connected device current draw too small.	Use the Crestron ST-VS (video sensor for video devices) or use the ST-PC Power Control module.

Further Inquiries

If after reviewing this Operations Guide, you cannot locate specific information or have questions, please take advantage of the Crestron award winning customer service team by calling:

- In the US and Canada, call the Crestron corporate headquarters at 1-888-CRESTRON [1-888-273-7876].
- 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 and New Zealand, call Crestron Pacific at +613-9480-2999.

You can also log onto the online help section of the Crestron website (www.crestron.com) to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features, and extends the capabilities of the ST-CS, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website (www.crestron.com) periodically for manual update availability and its relevance. Updates are available from the Downloads | Product Manuals section and are identified as an “Addendum” in the Download column.

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, 6 Volvo Drive, Rockleigh, NJ 07647, 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 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.

Crestron Electronics, Inc.
15 Volvo Drive Rockleigh, NJ 07647
Tel: 888.CRESTRON
Fax: 201.767.7576
www.crestron.com

Operations Guide – DOC. 5677A
02.04

Specifications subject to
change without notice.