



EQUIPMENT INSTALLATION MANUAL

Group Controllers

Version 2.02

This manual contains information for software version 2



WARRANTY

Products sold by Smartrise Engineering (Smartrise) are warranted to be free from defects in workmanship and material for a period of fifteen (15) months from the date of shipment. Any products defective in workmanship or material shall, at the discretion of Smartrise, be repaired or replaced at no charge to the Buyer. Determination as to whether a product is defective and eligible for an authorized return rests with Smartrise. The obligation of Smartrise shall be limited solely to that of repairing or replacing of defective products returned to Smartrise by the Buyer. It is the obligation of the Buyer to return defective products to Smartrise with all parts and documentation. A return merchandise authorization (RMA) number must be obtained from Smartrise prior to returning products.

Smartrise makes no warranty as to the fitness of its products for any application not specified in writing by Smartrise. Use of Smartrise products in any unauthorized manner will void this warranty and may cause damage to the product and/or injury.

This warranty is exclusive and in lieu of all other warranties, expressed or implied, including, but not limited to, any warranty of merchantability or of fitness for a particular purpose and therefore, the Buyer hereby waives any and all claims.

LIMITATIONS OF LIABILITY

In no event shall Smartrise Engineering be liable for loss of profit, indirect, consequential, or incidental damages whether arising out of warranty, breach of contract or tort. Failure to understand the elevator control system could result in damage to the system and possibly even danger to the passengers. Only properly trained and qualified personnel should attempt to work on the system.

CODE COMPLIANCE

Smartrise controllers are certified by ASME A17/CSA B44 and the State of California. Depending on the jurisdiction where the controller is operating, it will be configured per the specific local code requirements as specified by the buyer.

PERSONAL SAFETY: PERSONAL INJURY AND/OR DEATH MAY OCCUR

Smartrise Engineering controllers should only be installed by qualified, licensed, trained elevator personnel familiar with the operation of microprocessor-based elevator controls. All safety devices, known as electronic protective devices (limits, governors, hoistway locks, car gate, etc.) shall be tested to be fully functional prior to attempting to run the elevator. Never operate the system with any safety device rendered inoperative in any way. The User is responsible for compliance with the current National Electrical Code with respect to the overall installation of the equipment, and proper sizing of electrical conductors connected to the controls. The User is responsible for understanding and applying all current Local, State, Provincial, and Federal Codes which govern practices such as controller placement, applicability, wiring protection, disconnections, over current protection, and grounding procedures. To prevent the risk of personal shock, all equipment should be securely grounded to earth ground as outlined in the National Electrical Code. Failure to obtain an actual earth ground source may result in electrical shock to personnel.

EQUIPMENT SAFETY

All equipment chassis should be securely grounded to earth ground as outlined in the National Electrical Code. Improper grounding is the most common cause of electrical component failures and electrically noise-induced problems. All component replacement must be done with the main line power off. Unauthorized modifications to circuits or components should not be attempted without Smartrise Engineering authorization to ensure all safety features are maintained. Care should be taken when using test leads and jumpers to avoid applying high voltage or ground to low voltage microprocessor circuits.

CONTROLLER GROUNDING REQUIREMENTS

NOTE – For the controller to function properly it is very important to provide proper building ground connections to the controller.

- ❖ Examples of a proper building-to-controller ground connection is to attach the ground cable to:
 - To a grounding rod that has been driven into the pit flooring.
 - The street side of the incoming water main. Beware of grounding to a standard water pipe as a coupling may insulate it from proper earth ground.
- ❖ The controller has 1 or more common ground bus terminal blocks.



- ❖ All grounds need to land at this common point including building, motor, transformer, and filter grounds. This prevents ground loops, and will limit the impedance between the grounds and noise will be channeled back to building ground.

Providing a proper ground is mandatory and will improve the performance of the controller.

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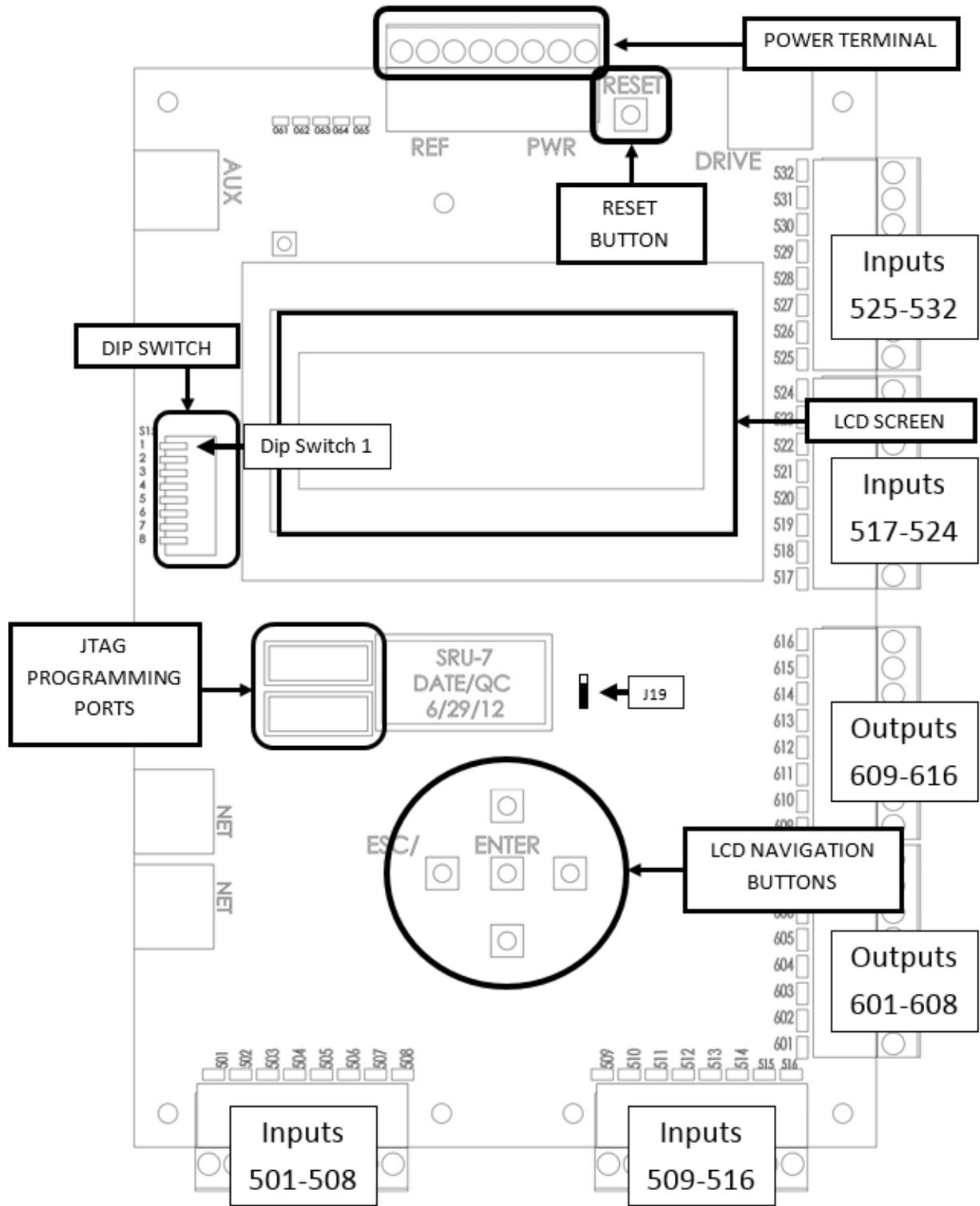
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Common Installation Issues & Procedures

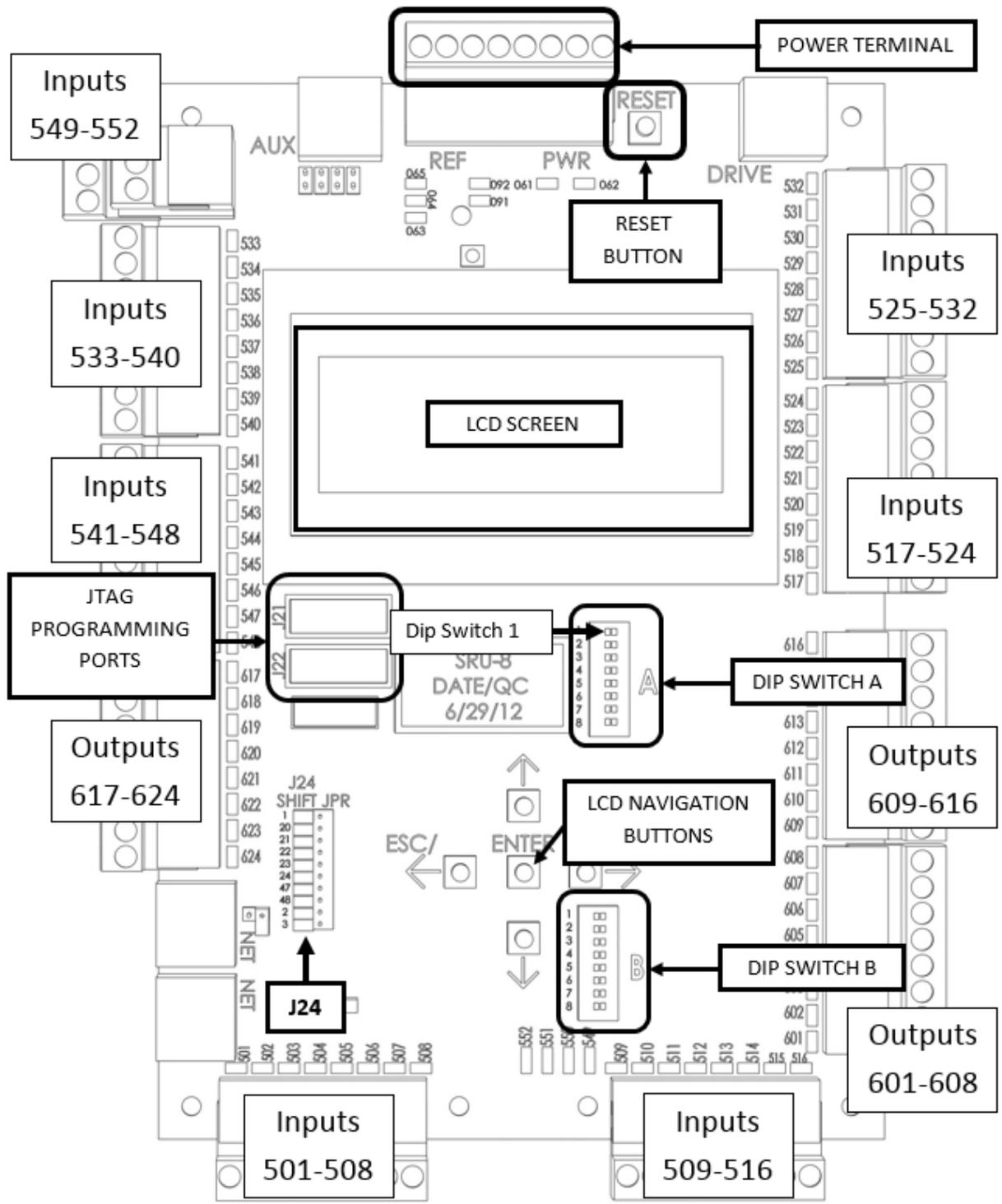
- **GROUP COMMUNICATION ISSUES** – Make sure to connect the shield of the GN+/GN- shielded pair to reference (REF) on **both ends**. This communication cable part of the traveler located between the machine room and car top board. Make sure the GN+ & GN- wires are connected to the same terminals in the machine room as well as the Group DIN rails.
- **HALL BOARD COMMUNICATION TESTING** – To test communication on any hall board turn on Dip Switch 8. The two green LEDs on the hall board blink indicating it is transmitting and receiving communication from the machine room. This is a test dip switch only. Do this one floor at a time when installing the hall boards; it will confirm that the wiring and board are good. Always do this before moving onto the next floor.
- **JUMPING OUT UNUSED INPUTS** – If the drawings show a normally closed contact for an Input your system does not require, apply a jumper from 24vdc to the specified Input terminal. All Smartrise boards **Receive 24vdc inputs ONLY** and provide **24vdc reference via programmed outputs**.
- **ENTERING CAR CALLS** – You can enter a hall call from the Group SRU by going to **MAIN MENU | DEBUG | ENTER HALL CALLS** and using the Up/Down arrow keys to select a floor to go to. Press the Enter button to latch that floor.

SRU – SMARTRISE UNIVERSAL BOARD

REVISION 5-7 BOARD



REVISION 8 BOARD



INTRODUCTION

GROUP CONTROLLER

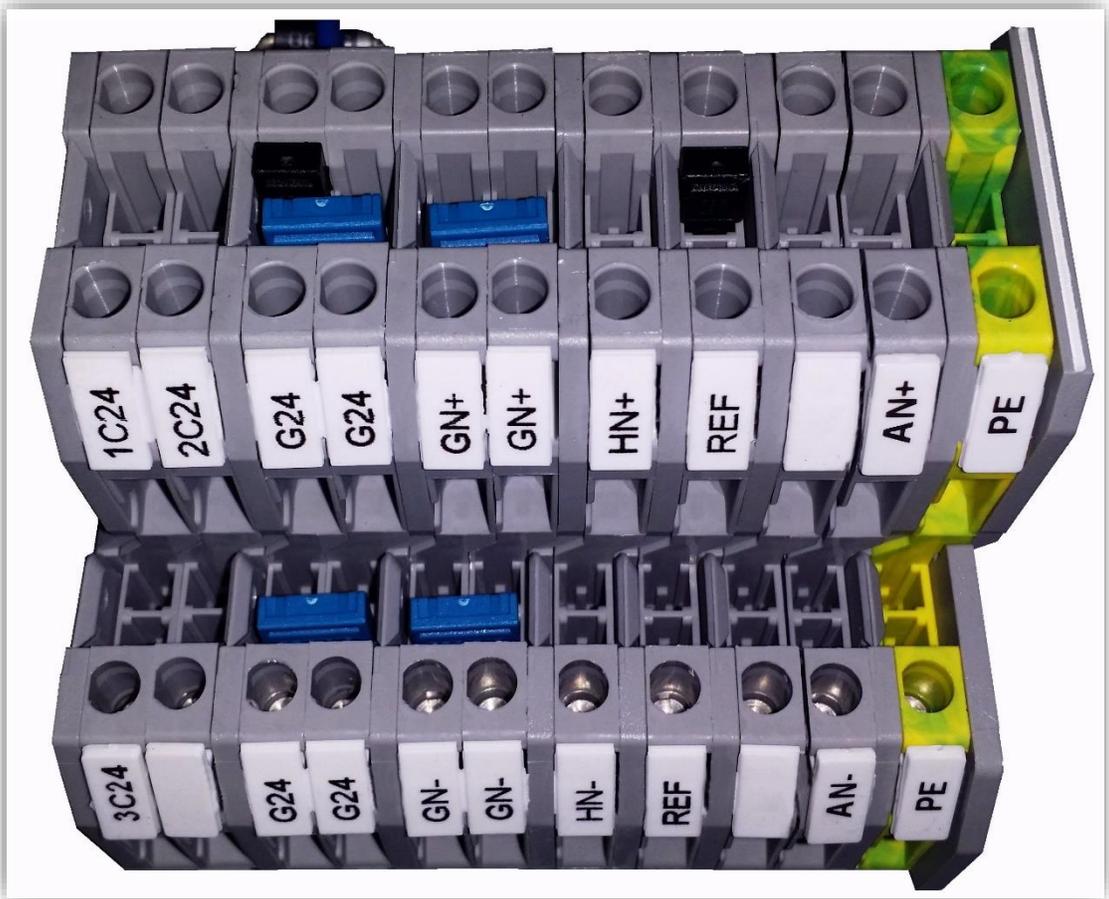
The Group Controller will generally be a Group SRU board mounted in its own small enclosure with a row of terminal blocks, or Din Rail. The Group Controller does not have its own power supply but instead receives its power from the cars. Terminals for power, network connections to the cars, hall stations, and remote monitoring equipment are provided.

DIN RAIL

The Din Rail is the mounting terminals for all installer supplied wiring. These terminals are pre-wired to the required IOs and power supplies. They are labeled on the prints as a square box at the end of a line or on a line where a jumper can be applied. All jumpers should go between Din Rail terminals and not the actual terminals on the relays.

The same Din Rail terminals that are next to each other are connected with a blue jumper. The same terminals that are above each other are connected by a black jumper. These jumpers are installed by the factory and should not be moved.

EXAMPLE DIN RAIL CONFIGURATION (GROUP SHOWN)



HALL BOARDS AND CABLING

The Smartrise Hall Board is a small computer board used to control the hall call stations, lanterns, lobby fire key switch, and other devices mounted at the landings. Each hall board has two input terminals – **UB** and **DB** – and two output terminals – **UL** and **DL**. **UB** stands for “up button” and **DB** stands for “down button”. These are the inputs that get powered when the call button is pressed. Likewise, **UL** stands for “up lamp” and **DL** stands for “down lamp”. These are the outputs that, when active, ground one side of the call lamp to illuminate the button.

*Note: A common mistake is to mis-wire the **DB / DL** terminals at the bottom terminal landing and the **UB / UL** terminals at the top terminal landing. The terminals should be for the direction you want the car to travel, therefore, **UB / UL** for bottom terminal hall call button and **DB / DL** for top terminal hall call button.*

Although the terminal names denote call button connections, the Hall Board can be used for other devices too. When driving a hall lantern, only the **UL** and **DL** terminals are used with **UL** grounding one side of the up arrow lantern and **DL** grounding the down.

For the lobby fire station, the two inputs are used for the key switch (center position is assumed if neither left nor right is active) and one of the outputs is used for the fire lamp.

Other devices may also be controlled by a hall board so check the drawings for proper configuration of each board.

The Hall Boards themselves are connected to the hall network (denoted as “**HN+**, **HN-**” on the drawings). Smartrise recommends using Cat5 type cables when networking the hall boards together. Cat5 cables are easy to connect and because their internal wiring uses twisted-pairs, they provide good noise immunity. The RJ45 connectors on the Hall Board have pins for both power and data, allowing a single cable to provide a complete interface. If for some reason Cat5 cabling is not practical, all the power and data signals from the RJ45 connectors are also available as screw terminals on the hall board.

The DIP switches on the Hall Board are used for network addressing and debugging. Switches 1-7 provide a network address. Your job prints will have a table explaining how to set these switches at each location. Switch 8 can be turned on for diagnostics. When switch 8 is on (along with the address switches 1-7), the board will activate the **UL** and **DL** outputs one at a time. Every time a valid message is received, the board will alternate which output is active. Two onboard LEDs indicate which output is on so you will see these LEDs alternate back and forth.

The hall board will connect to the group controller (**HN** network) much the same way as they would a simplex controller, however, the hall lanterns will connect to the individual car’s **AN** network.

SYSTEM ARCHITECTURE

SRU BOARDS

A Group system consists of 2 to 8 cars connected to one Group SRU controller. Each car's Machine Room controller will connect to the Group controller through a network line labelled GN.

The Group SRU board is normally mounted inside its own enclosure, much like a CT SRU in a 3-board system. This board is mounted with its own DIN rail for connections to the hall network and to each car's Machine Room Controller for communication and power.

POWER BUS

Your Smartrise controller has several different power circuits used to power different parts of the system. The following is a summary of power bus designations sometimes found on the drawings. This information is not necessarily specific to your job so always consult the drawings that came with the job before making any wiring connections.

1. REF, G24

- a. **REF** is the 0 volt reference for all the 24vDC power busses. It is tied to the negative output of the 24vDC power supply in the Machine Room Controller. On most Smartrise controllers, **REF** is isolated from earth ground and from **N**. This is done to prevent damage to the low voltage SRU boards in the event that a high voltage AC wire is accidentally connected to one of the boards.
- b. **G24** is group SRU's 24vDC power supplied from each car's H24 breaker to the group controller. This is supplied to the DIN rail and isolated from each car's power by a diode. **G24** is used to power the hall boards and the Group SRU board.

COMMUNICATION NETWORKS

A typical Smartrise controller has several communication networks but the group controller only has two – **GN** & **HN**. The **GN** network links the Group Controller to the cars and the **HN** network links to the hall stations. The following sections describe the various networks used in the Smartrise controller system.

1. GROUP NETWORK (GN)

The **GN** or Group Network is the 2-wire network (**GN+/-**) that links the Group controller to the individual car controllers. It allows the group to dispatch hall call assignments to the cars and to receive status information from them.

The network is formed by connecting a shielded pair from each car's **HN** terminals to the Group controller's **GN** terminals. The shield of this cable should be connected to the **REF** terminal of the group and on each car.

2. HALL NETWORK (HN)

The **HN** or Hall Network is the 2-wire network (HN+/-) that links the Group controller to the Hall Boards at each landing. The Hall Boards communicate information about the devices to which they are connected including hall call pushbuttons and fire or EMS keys.

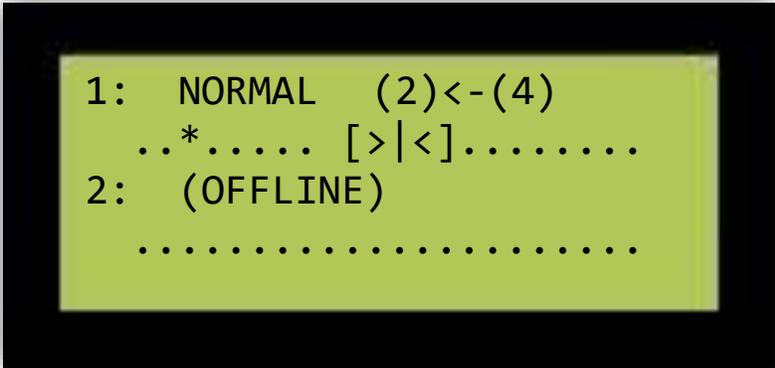
Smartrise recommends daisy chaining the hall boards together using Cat5 cables. The hall boards themselves have two RJ45 connectors to allow for easy daisy chaining or you can use 3-way splitters (available from Smartrise). When 3-way splitters are used, you daisy chain the splitters in the hoistway and use the third jack of the splitter to connect to the Cat5 cable that will run through the wall to the Hall Board at a particular floor.

MENU NAVIGATION

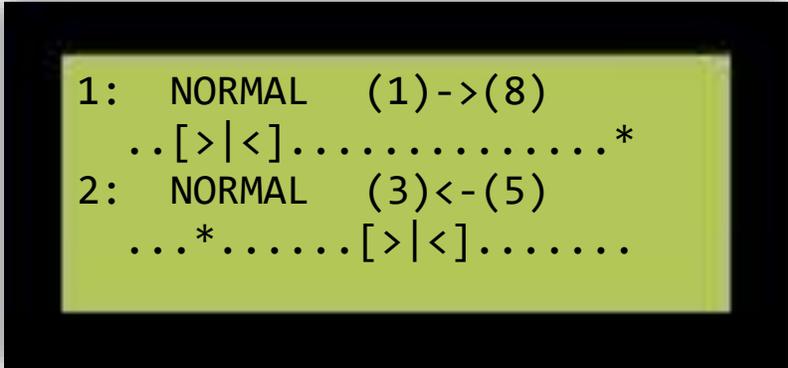
HOME SCREEN

The Home Screen provides an overview of the Group car’s status. This includes the car’s position, hall calls and door status. Press the Right Arrow key to exit the Home Screen and go to the Main Menu.

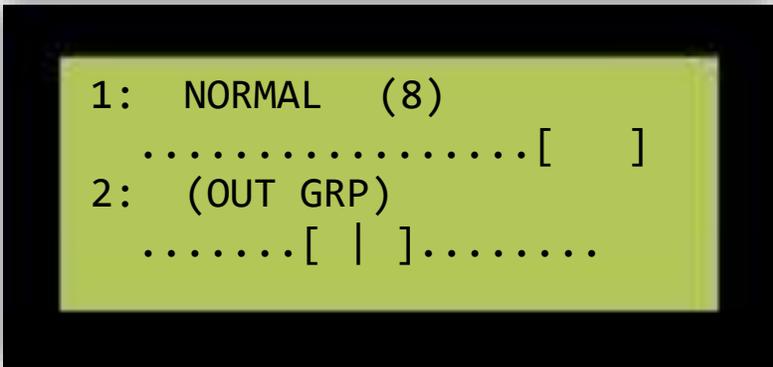
NORMAL VIEW SCREEN – Car #1 going from 4th floor to 2nd floor / Car #2 offline



NORMAL VIEW SCREEN – Car #1 going from 1st floor to 8th floor / Car #2 going from 5th floor to 3rd floor

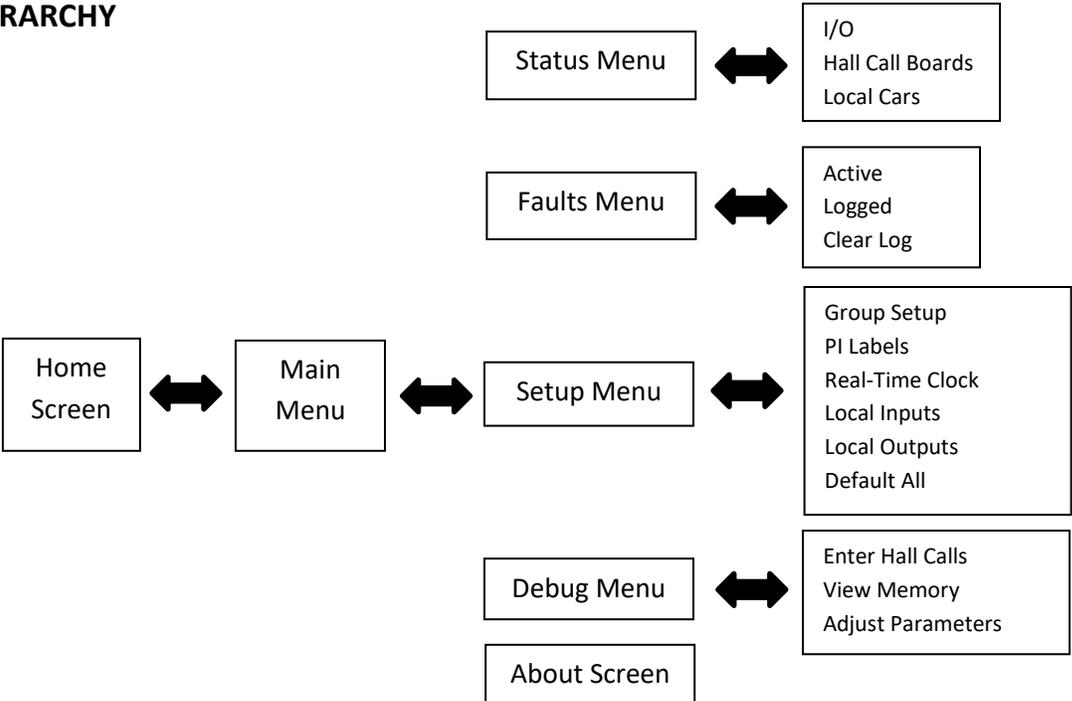


NORMAL VIEW SCREEN – Car #1 stopped on 8th floor w/doors open / Car #2 on 4th floor and Out of Group



MAIN MENU

HIERARCHY



The user interface of the SRU board is arranged in a hierarchical fashion where navigating toward the right (pressing the Right Arrow Key) takes you deeper into the menu system while navigating left escapes back to the higher levels. The Home Screen is at the top level. Press the right arrow key once to get to the Main Menu. Press the Right Arrow key again to enter one of the submenus.

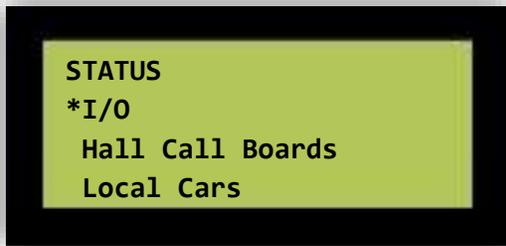
If you're ever lost just keep pressing the Left Arrow key until you get back to the Home Screen.

MAIN MENU

The Main Menu provides access to the four main submenus: Status, Faults, Setup, and Debug. It also provides access to the "About" screen which gives information about the installed software. Use the Up and Down Arrow keys to select a submenu and press the Right Arrow (or Enter) key to go there.

STATUS

The Status screen provides information about the current state of the controller. You can view which inputs are currently active, see the learned positions of hoistway magnets and switches, and get the status of a cars communication with the group.

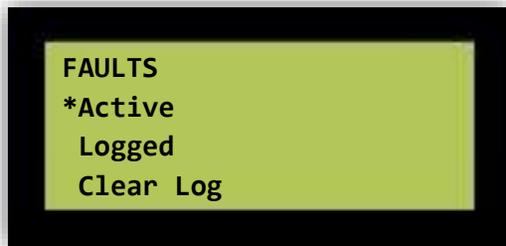


Use the up and down arrow keys to scroll through all the available options.

FAULTS

The Faults menu is a good place to go when troubleshooting. It allows you to see what is currently wrong with the elevator as well as a history of recent problems.

The menu has three options: view active faults, view logged faults, and clear the log.

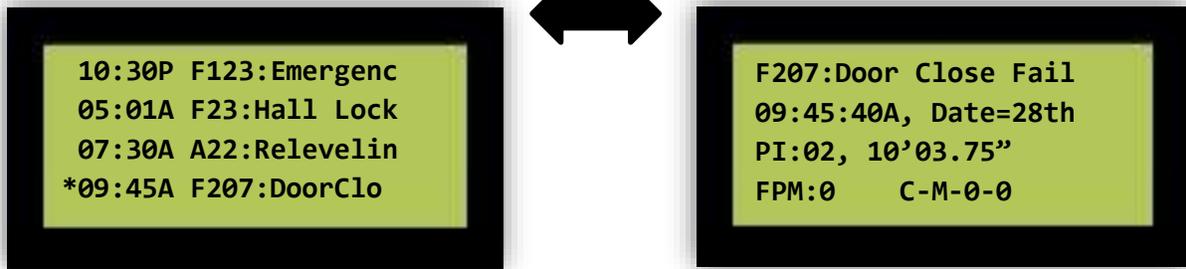


The Active Faults screen show any faults or alarms that are active at this moment. Faults are conditions that prevent the elevator from running. Alarms are informational messages that you should be aware of but don't necessarily prevent operation. If the red LED O65 is flashing, you have an active fault. The Active Faults screen is automatically displayed when a new fault or alarm occurs. You can disable that feature by turning on DIP switch A-6.

2. LOGGED FAULTS

The Logged Faults screen shows a history of approximately the last 15 faults that occurred. Scroll down to see the most recent faults and scroll up to see older ones. Pressing the Right Arrow key when a fault is selected takes you to the Fault Detail screen where you can see all the information that was recorded when the fault was logged.

Left and right arrow keys switch between fault log list and detailed views.



- 1) The first line of the Fault Detail screen shows the fault number and description;
- 2) The second line shows the time and date when the fault occurred.
- 3) The third line shows the PI and position of the car when the fault occurred.
- 4) The bottom line shows the speed of the car in feet per minute. The four characters after the speed are the CPU, ETS position, Extra Byte 1 and Extra Byte 2.

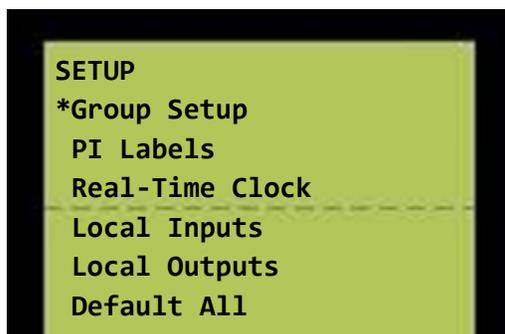
To ensure the fault log has the most accurate information, be sure to set the correct time and date under the **MAIN MENU | SETUP | REAL-TIME CLOCK** menu option.

3. CLEARING THE LOG

The third option on the Faults menu is for clearing the log. When this option is selected, you will be asked to confirm your choice. If you choose “yes” then the data recorded in the log will be erased. You are not required to clear the fault log as old faults are automatically erased when new ones are logged but it can sometimes be helpful when troubleshooting to clear out old faults.

SETUP

The Setup menu is the primary place to go to configure and adjust the car. It has options for setting speeds and slowdowns, adjusting floor levels, configuring the doors, and performing many other functions necessary to make the elevator run properly. You can also enable optional features like security and even change the function of certain input or output terminals.



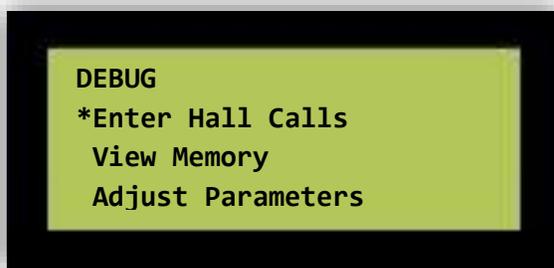
Use the up and down arrow keys to scroll through all the available options.

DEBUG

The Debug menu was originally designed for internal use by Smartrise during software development. It has options for viewing memory, checking communication network status, and adjusting parameters – including many that don't appear in the Setup menu. As more features were added to this menu, it became sort of an advanced setup and status area.

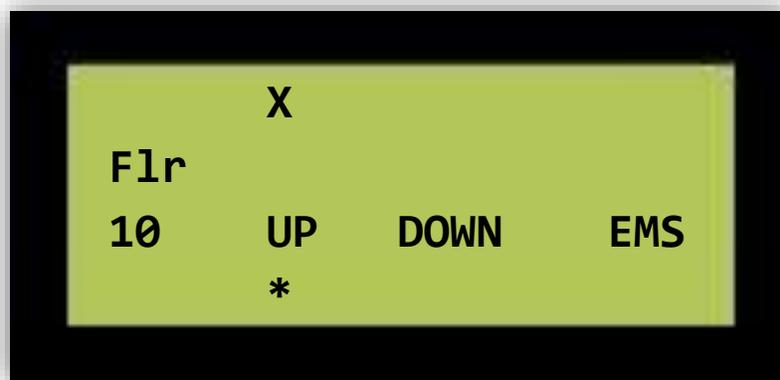
One of the most used features under Debug is the option to “**Enter Hall Calls**”. This is very similar to the MR controllers “Enter Car Calls” in which it allows you to send the car to any floor from the machine room. By using DIP switch A-3, you can disable the car doors to prevent anyone from entering the car while you're testing it. This is explained in more detail further on in this section.

1. ENTER HALL CALLS



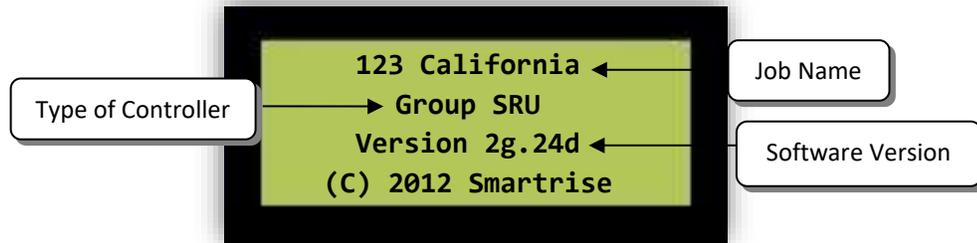
Use the up and down arrow keys to scroll through all the available options.

You can enter car calls from the **MAIN MENU | DEBUG | ENTER HALL CALLS** screen. Use the up and down arrow keys to select which floor you want the car to go (in this case floor 7) to and then right or left arrow keys to select which direction you want the car to go (in this case “UP”). Press Enter key to latch the call. An “X” will appear above your selection and the car will be latched in that direction. In the example below a call was put in for the UP direction to floor 10.



ABOUT

The About screen provides information about the controller. The job name and software version number can be found here.



HALL NETWORK

Hall call buttons, arrival lanterns, the Fire Phase 1 key and light and other hall mounted devices are normally connected to the controller via a Cat5 serial channel called the Hall Network or HN. In a group setting, there may be more than one network.

Call buttons and the fire key which are shared by all the cars will connect to the Group SRU board on the **HN** network.

Group arrival lanterns which are specific to a car will come directly to that car's din rail on a separate hall network called the Auxiliary Network or **AN**.

Regardless of whether the network is called **HN** or **AN**, they operate the same way. A hall board is placed at each device. The hall board has two input terminals and two output terminals so a single hall board can service both an up and down hall call button. Likewise a single hall board can drive both the up and down arrival lanterns at a floor. The fire recall key is usually a three position switch but since the center position can be assumed when the other two are off, a single hall board can handle it as well (with one of the outputs used to control the fire hat jewel).

Once a hall board has been connected to a device, that device can become part of the Hall Network.

GENERAL INSTALLATION

OVERVIEW

This part of the manual explains how to get the group controller wired and running. This mode of operation is vital in group networks as the group board handles the smoke alarms, fire recall and the hall call network.

MOUNTING

Mount the group controller cabinet in a well ventilated area.

CONNECTING THE CARS TO THE GROUP SRU BOARD

The group SRU board normally comes mounted in a small cabinet with a piece of DIN rail that also includes terminals for landing the hall network and communication wiring.

Refer to the provided drawings for the connections required between the machine room SRU and the group SRU. The power for the group controller is supplied by each car. Refer to the drawings for proper connecting.

Be aware that communication signals are normally sent on differential pairs with a plus (+) and minus (-) wire. The Car-to-Group Network with its **GN+** and **GN-** signals is one such example. Signals like these should be connected via a shielded pair (or twisted pair if available) within the traveler cable. Pay close attention to your job prints about how to connect the shield. Sometimes the prints will show a shielded pair connected to the **REF** terminal and sometimes to **GROUND**. Also, note whether the shield is shown connected at one end only or at both ends. Connect as shown to avoid communication problems.

SMOKE SENSORS

To prevent the controller from going into Fire Recall during setup you must first bypass the smoke sensor inputs. If you don't have your Smoke sensors installed and wired to the SRU board install temporary jumpers from **G24** to the smoke Inputs on the SRU (refer to provided drawings for correct terminal locations).

To clear Fire Recall after jumping out the smoke sensors perform a **Dip (A) Switch 1 + Reset** on the SRU.

Smoke 1 – All floors EXCEPT main floor alarms (sends car to main recall floor)

Smoke 2 – Main floor alarm (sends car to alternate recall floor)

Smoke 3 – Machine room sensor (sends car to main recall floor)

Smoke 4 – Hoistway alarm (sends car to main recall floor)

FIRE PHASE DEFINITIONS

There are two ways of engaging Fire Recall – Smoke Sensors 1~4 and the hall fire switch. Sensors send the car to predefined floor depending on which alarm is activated and the key switch brings car to the main recall floor.

1) FIRE RECALL

Hall Fire Switch Off – normal setting for Fire Recall switch

Hall Fire Switch On – starts Fire Recall mode and allows firemen to call car to specified floor.

Hall Fire Switch Reset – resets Fire Recall and returns car to normal operation

2) FIRE PHASE 2

Car Fire Switch Off – Normal off setting for Fire Phase 2 switch

Car Fire Switch On – Switches Fire Recall to Fire Phase 2 allowing car to accept car calls. Requires manual opening of doors at floors using Door Open / Close buttons.

Car Fire Switch Hold – Allows operator to hold the car at a level. Does not allow doors to operate. Will not accept Hall or Car Calls until switch is turned off hold.

Car Fire Switch Cancel – Cancels Fire Recall

Independent Service – Takes control of car immediately except during Fire Recall in which it will take over after 30 sec timer.

GROUP PARKING SETUP

1. On Each Car:
 - a. Go to **MAIN MENU | SETUP | GROUP SETUP | PARK DELAY TIME** to setup the delay time until the car goes into park mode (000 secs).
2. Group SRU board:
 - a. Set Real-Time clock to your current date and time. It is set for PST when it leaves the Smartrise factory. Do this at: **MAIN MENU | SETUP | REAL-TIME CLOCK**.
 - b. In **MAIN MENU | SETUP | GROUP SETUP** there are (3) Park Rules that can be programmed in the group controller. Each Park Rule can be setup up for different floors. Park Rule 1 is the default the group uses 24hrs/day - 7 days/wk unless another Park Rule is saved for a specific block of time.
3. Setting each Park Rule (You will have Park Floors that match the number of cars in group):
 - a. Park Floor 1 – Sets the main floor you want the cars to park at.
 - b. Park Floor 2 – Sets the alternate floor you want the cars to park at.
 - c. Park w/Doors Open – Sets how many cars to park with the doors open.
 - d. Park by Car ID – Allows specific cars to park on specific landings set in this parameter.
4. Park Times menu:
 - a. Rule park times can be changed in the **MAIN MENU | SETUP | GROUP SETUP | PARK TIMES** menu item. These times are listed in 15 minute block increments.
 - b. For example: Park Rule 1 can be set for the cars to park at the lobby at start of business from 5-7 am. Park Rule 2 can be used for the lunch hour 11-1 pm to move the cars to alternate floors to help facilitate higher lunch traffic on those floors. Park Rule 3 can be used for when people are leaving work to have the cars park at the work floors to facilitate the higher traffic use and then back to the lobby for all other times. The following is a programming example:
 - i. Let's assume the cars are set to park at Lobby in Park Rule 1.
 - ii. In **MAIN MENU | SETUP | GROUP SETUP | PARK RULE 2** set Park Floor 1 to #4.
 - iii. To program Rule 2 for 1 hour from noon to 1pm go to **MAIN MENU | SETUP | GROUP SETUP | PARK TIMES** and save Rule 2 four times at the times: 12:00P – 12:15P, 12:15P-12:30P, 12:30P-12:45P & 12:45P-01:00P.
 - iv. The cars will park at floor #4 from 12 pm to 1 pm.
 - v. After 1 pm Rule 2 is complete and the group defaults back to Rule 1 to park the cars at the Lobby unless another rule is implemented for alternate floors.

GROUP SECURITY SETUP

There is no standard security setup on the group controller. Hall call security can only be performed by installing dry contacts on the hall call boards (HCB's) or with the "Enable All HCBs" input on the Group SRU.

APPENDIX A – SMARTVIEW MRM

SMARTRISE SMARTVIEW MACHINE ROOM MONITORING (MRM)

Overview

SmartView (MRM) is a computer program that is designed to run on a Windows based computer that is located near (within 500 feet) one or more Smartrise Elevator Controls.

The MRM in SmartView (MRM) stands for Machine Room Monitoring. The SmartView (MRM) software monitors the operation of the connected elevators, collects real-time data and permits interaction with the elevator controls from the computer. In addition, the SmartView (MRM) software provides this functionality to other members of the SmartView software family. These include: SmartView (Remote), SmartView (Lobby) and SmartView (Maintain).

The SmartView (MRM) program is a powerful tool. It can collect information, send information to external computers, and can be used to change the operation of the elevators connected to it. As such, it may be desirable to limit access to SmartView (MRM) to authorized persons only. To accomplish this, SmartView (MRM) has four Access Levels, each of which allows certain operational privileges within the SmartView (MRM) program. Each successive Access Level (below) has elevated privileges.

None – Can view elevator status.

User – Same as above. Can also control elevator function and view reports.

Manager – Same as above. Can also manipulate saved data and make basic program changes.

Administrator – Same as above. Can make advanced program changes and use advanced tools.



The SmartView MRM has many applications. If your job is equipped with the SmartView MRM you will receive a separate manual for installation and operation of this equipment.

APPENDIX B – MENU PARAMETER INDEX

Main Menu Item	1 st Sub Menu Item	2 nd Sub Menu Item	3 rd Sub Menu Item	Description	
[Status]	I/O	Input Groups		Displays the real time status of any programmed input.	
	Hall Call Boards	Fire Recall		Displays the communication and button status of the Fire Recall Hall Board.	
		EMS		Displays the communication and button status of the EMS Hall Board.	
		Hall Call Boards (F,R)		Displays the communication and button status of the Riser Hall Board.	
	Local Cars		Displays the communication status of each Car connected to the group controller.		
[Faults]	Active		Displays current active faults that are preventing the car from running.		
	Logged		Displays the 15 latest faults stored in the board's nonvolatile memory.		
	Clear Log		Clears the fault log history.		
[Setup]	Group Setup	Num Cars		Sets how many cars are in group	
		Park Rule 1	Park Floor 1		Sets primary floor to park cars at
			Park Floor 2		Sets secondary floor to park cars at
			Park w/Doors Open		Indicates which car to park with the doors open at the park floor
			Park Start Time		Sets the start time to initiate current park rule – (Park Rule 1 cannot be modified)
			Park End Time		Sets the end time to stop current park rule – (Park Rule 1 cannot be modified)
			Park By Car ID		Allows you to set which floor you want certain cars to park at.
		Park Rule 2		Same as 1 – except Start/End time can be modified	
	Park Rule 3		Same as 1 – except Start/End time can be modified		
	PI Labels		This feature permits the user to label any landing to a 2 digit alpha-numeric or numeric configuration		
	Real-Time Clock	Time		This feature sets the internal clock time for fault identification	
		Date		This feature sets the internal clock date for fault identification	
	Local Inputs		N/A		The feature allows the user to see if the Smartrise SRU is registering an input. The inputs are board specific; For example, when looking on the Group SRU it will show just the Group inputs.
Local Outputs		N/A		The feature allows the user to see the programmed output configuration for any Smartrise SRU. For example, if using the Group SRU this would allow the user to see all programmed outputs on the Group Board	
Default All		Defaults all parameters to the factory programming. If DIP switch one is placed down in conjunction with a default all critical values will be defaulted as well.			

Main Menu Item	1 st Sub Menu Item	2 nd Sub Menu Item	3 rd Sub Menu Item	Description
 Debug 	Enter Hall Calls			Allows the user to input a hall call from the Group controller
	View Memory			This is a troubleshooting parameter that is reserved for factory setup. Do not change unless directed by Smartrise
	Adjust Parameters			These are parameters that can be changed by the installer to adjust operation. Refer to Addendum III for a complete list of parameters available.
 About 	Version			Describes the controller board, job name and software version the controller is using.

APPENDIX C – FAULT DESCRIPTIONS INDEX

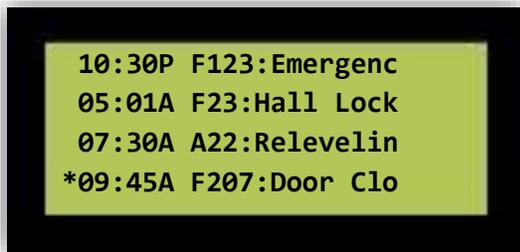
Many faults are caused by loose wiring or cables. Check the wiring associated with the fault item before contacting Smartrise. On Cat5 cables, reseal cable in net port making sure that locking tab is fully secure.

Note: **Faults** will cause a moving car to perform an emergency stop.

The Group SRU board maintains a log of the last 15 faults and alarms. This log is maintained even if the controller is powered off. To view this fault history, navigate to:

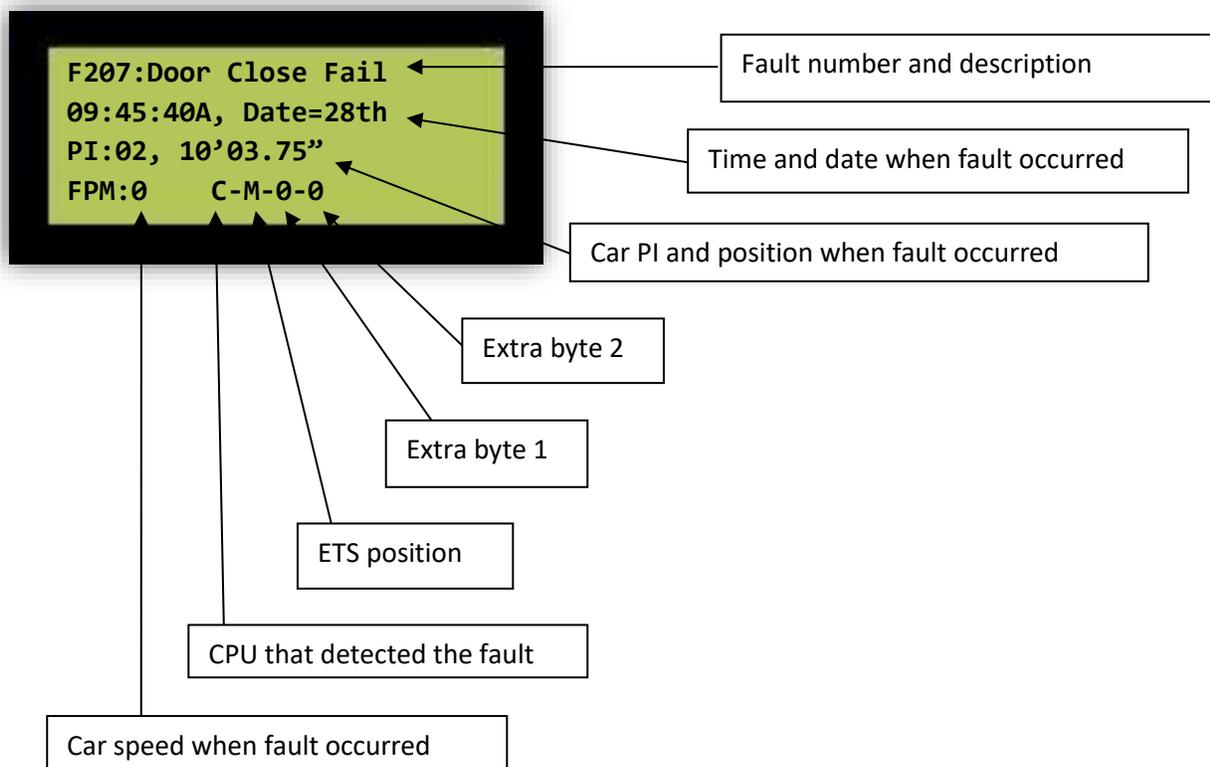
MAIN MENU | FAULTS | LOGGED

You will see the fault log displayed as a list faults and alarms with the newest faults at the bottom of the list. Scroll up and down to see the entire list of recorded faults and alarms.



To get detailed information on a particular fault or alarm, move the cursor next to that fault and press the ENTER button.

Below is an example of how faults are displayed on the Fault Detail screen.



The fault number and descriptions are listed at the end of this appendix. The time and date indicate when the fault was written to the log. It is important that the real-time clock be set properly to have an accurate idea of when the faults occurred. The PI shows the floor label of the closest doors zone magnet and the position shows feet and inches. FPM indicates how fast the car was moving.

Four additional indicators on the bottom row show CPU, **ETS** position, and Extra Bytes 1 and 2.

<i>CPU</i>	<i>Computer that Detected the Fault or Alarm</i>
A	Machine Room SRU, J21 processor
B	Machine Room SRU, J22 processor
C	Cartop SRU, J21 processor
D	Cartop SRU, J22 processor

<i>ETS Position</i>	<i>Meaning</i>	<i>State of ETS Switches when Fault or Alarm Occurred</i>
B	Bottom	DETS switch was open, UETS switch was closed.
M	Middle	Both DETS and UETS switches were closed.
T	Top	DETS switch was closed, UETS switch was open.
U	Unknown	Either DETS or UETS were both open and the CPU recording the fault did not have accurate information about the state of the switches. Faults that occur shortly after a power on or during a system communication loss may indicate an unknown ETS position.

Extra Byte 1 and Extra Byte 2 are normally both zero indicating that no additional information is available. Several faults and alarms will store additional information in these bytes that can be used to diagnose the cause of the fault. The *F29: Out of Service* fault is one example that uses these bytes to indicate what caused the car to go out of service. See the fault and alarm description table below for more information on when these extra bytes are used.

F53	Fault Log Cleared	All faults stored in memory have been automatically erased
Causes	<p>During power up of the controller, the software validates that the memory used to store the fault log is valid. An F53 fault is thrown and the fault log memory is cleared if it is found to contain invalid data.</p> <p>A new SRU board that has not been powered on may have invalid data in the area of memory used to store faults. Reprogramming an SRU with a new software version may cause the fault log to get cleared.</p> <p>If the controller lost power or an SRU board was reset during the recording of a fault, the log data may become invalid and have to be cleared.</p> <p>If the F53 fault happens every time the controller is powered up, it probably means that the battery that provides power to the Real-Time Clock chip is dead. This is the large chip in the center of the SRU board. It keeps track of time when the controller is powered off and also stores the fault log in RAM.</p>	
Remedies	<p>With the exception of a dead RTC chip battery, an occasional F53 should not be a problem. If you suspect a dead battery, you will need to replace the RTC chip. Most SRU boards manufactured after 2009 have this chip socketed. If your board has the chip soldered, you will need to replace the board.</p> <p>It is perfectly safe to run the elevator with a dead battery in the RTC chip. It simply means that the fault log will be erased if you lose power. Also, any functions that require knowing the time and date (e.g. timed security) may not function properly after a power loss.</p>	

F130	Power On	SRU board was powered on
Causes	Normal on power up	
Remedies	No action needed.	

F131	Reset	Reset button monitor
Causes	Reset button on board pressed OR power glitch OR bad SRU board.	
Remedies	No action needed unless SRU board has been determined to be bad. In that case replace the SRU board.	

F132	RST #3 SW	CPU faults
F133	RST #4 MC	
F134	RST #5 CO	
F135	RST #6 CP	
Causes	Bad SRU board	
Remedies	Replace SRU board	

F136	RST #7 WD	CPU faults
Causes	Software problem causing watchdog circuit to trip OR bad SRU board.	
Remedies	Software: Reprogram SRU board with correct software. Hardware: Replace SRU board	

F160	Critical Params Invalid	One or more of the “critical” parameters is not valid
Causes	One or more of the following parameters is not set to a valid value: <i>Number of floor</i> <i>Controller type</i> <i>Number of car doors</i> <i>Number of controller boards</i>	
Remedies	After a power-on or board reset, this fault may come on briefly. If the fault clears right away then no action is required. If the fault persists, you may need to default the parameters by selecting SETUP DEFAULT ALL.	

F1	Other Params Invalid	One or more of the “other” parameters is not valid
Causes	1-0	No Run Speeds set.
	2-0	Non-ascending Run Speeds.
	3-0	One or more of the Run Speeds is set to a value greater than 900 fpm.
	4-0	Inspection Speed set greater than 150 fpm. To comply with A17.1 code, inspection speeds above 150 fpm are not allowed.
	5-0	Unused Run Speeds not set to zero.
Remedies	1-0	There are eight available Run Speeds (S1-S8). You must set at least one with a non-zero value.
	2-0	The speed defined by S2 must be larger than S1. Likewise S3 must be larger than S2. This applies to all non-zero Run Speeds. All unused Run Speeds must be set to zero. Example: S1 = 50 fpm S2 = 175 fpm S3 = 300 fpm S4 ~ S8 = 0
	3-0	Reduce the offending Run Speed to less than 900 fpm or contact Smartrise for software to support higher speeds.
	4-0	Reduce Inspection Speed to 150 fpm or less.
	5-0	Set all Run Speeds above highest one used to zero.

F200	*	Internal software error.
Causes	Software has encountered an unexpected problem.	
Remedies	<p>An F200 fault will sometimes occur immediately after saving a parameter. This is due to technical details of how the CPUs update their internal Flash memory. No corrective action is required in this case.</p> <p>If an F200 fault occurs during normal operation, contact Smartrise. Please note the information on the Fault Detail screen including the value of the Extra Bytes.</p>	

APPENDIX D – ALARM DESCRIPTION INDEX

Note: **Alarms** provide information to the user but do not cause an emergency stop.

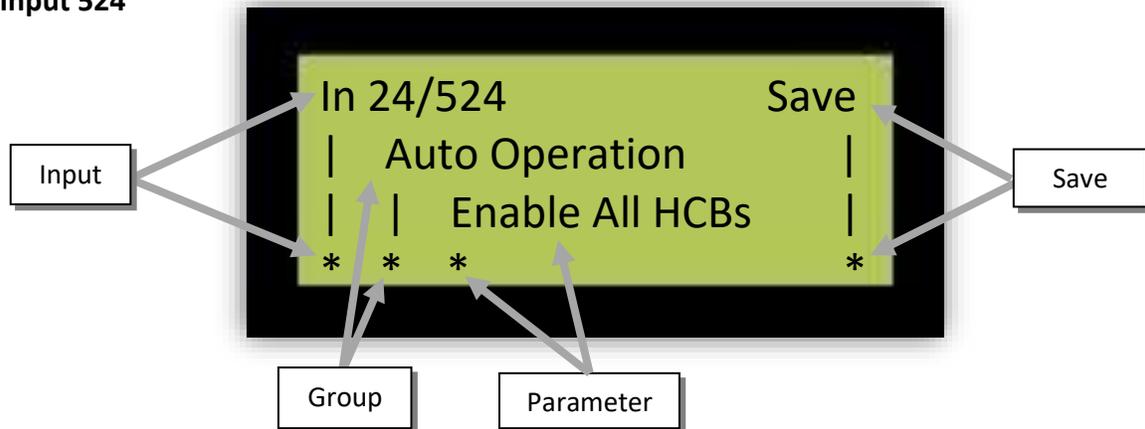
A53	Seismic	
Causes	Seismic Input.	
Remedies	Reset the seismic unit.	
A54	OOS Input	
Causes	Out of Service Input. This is used for a variety of functions.	
Remedies	The OOS input is active. Check the item wired to the OOS input to find out what is the cause.	
A55	Auto Dispatch	
Causes	Group or Hall Network Comm Down.	
Remedies	Check to see if group is communicating with car on (GN+/-). Check to see if Simplex SRU is communicating with the Hall Network on (HN=/-). Check for loose wiring or missing shield.	
A56	Limited Speed	
Causes	Limit Speed input active.	
Remedies	Reset any installed features that are limiting car speed.	
A57	Smoke/Heat Sensor	
Causes	Smoke Active.	
Remedies	Reset tripped smoke sensor; check for loose wiring on MR board.	
A58	Lobby Fire Key	
Causes	Lobby Fire Key Active.	
Remedies	Alert indicating the Lobby Fire Key is on.	
A59	Remote Fire Key	
Causes	Remote Fire Key Active.	
Remedies	Alert indicating Remote Fire Key is on.	
A61	Checking Parameters	
Causes	Normal on startup.	
Remedies	No action needed.	

A65	NVRAM Invalid	
Causes	The data stored in the non-volatile RAM of the real-time clock chip is invalid. Could result from new software running for the first time on the board OR a dead battery in the RTC chip OR a bad SRU board	
Remedies	New Software running: No action needed Dead battery in RTC (Real Time Clock chip): Swap RTC chip with one from the cartop or cop SRU boards. Bad SRU: Replace SRU board	
A66	Smokes Bypassed	
Causes	The Lobby fire key is set to "bypass"	
Remedies	Turn the Lobby Fire Key to Off.	
A71	Fire Phase 1	
Causes	The Fire hall board has been placed in Fire Recall On mode.	
Remedies	Turn off fire recall keyswitch.	
A100	PC COMM Loss	
Causes	Lost communication with PC monitoring system.	
Remedies	N/A	
A101	PC COMM Connected	
Causes	Established communication with PC monitoring system.	
Remedies	N/A	

APPENDIX E – INPUT / OUTPUT PROGRAMMING TUTORIAL

The Smartrise SRU controller allows the user to program an Input or Output on any unused terminal. The following example is how an Input is programmed for the addition of a Low Pressure switch on the machine room SRU board:

Example: Programming Instructions for adding an Input for Enable All Hall Call Boards (HCBs) on Input 524



- 1) Go to **Main Menu | Setup | Local Inputs**
 - a. With asterisk on first line “Input” use up/down arrows to scroll to “In 24/524”
 - b. Move asterisk over with right arrow to second line (Group) & change to “Auto Operation” using the up/down arrows
 - c. Move asterisk over with right arrow to “Parameter” section and change to “Enable All HCBs” using the up/down arrows
 - d. Use the right arrow to move the asterisk over to the “Save” line and press the “Enter” button to save
- 2) You will need to supply the switch with 24vdc on one side and wire the other to this input port.
- 3) You can perform this for many different types of inputs and outputs. Take some time to scroll through the different categories to see which inputs / outputs are available.

To program an Input you will need to go to **Main Menu | Setup | Local Inputs**.

To program an Output you will need to go to **Main Menu | Setup | Local Outputs**.

Note: Not all controllers will have ALL of these options as they are based on software revisions. This is just a generic reference for determining which category has which input/outputs.

1. Auto Operation
 - a. **(Inputs)** Enable All HCBs, Sabbath Enable
 - b. **(Outputs)** Emergency Power, EMS Lamp, Sabbath Lamp,
2. Fire/Earthquake
 - a. **(Inputs)** Smoke 1~4, 2nd Fire Key, Seismic
 - b. **(Outputs)** Fire Lamp Lobby
3. Controller
 - a. **(Inputs)** Limit Speed, Go OOS, E-Pwr On, E-Pwr Gen Ready, E-Pwr Auto Select, E-Pwr Select 1~8, Car 1~8 Lowered
 - b. **(Outputs)** E-Pwr Run Car 1~8, E-Pwr Lwr Car 1~8
4. Hall Call Up (Front)
 - a. **(Inputs)** Button 01~32
 - b. **(Outputs)** Lamp 01~32
5. Hall Call Down (Front)
 - a. **(Inputs)** Button 01~32
 - b. **(Outputs)** Lamp 01~32
6. Hall Call Up (Rear)
 - a. **(Inputs)** Button 01~32
 - b. **(Outputs)** Lamp 01~32
7. Hall Call Down (Rear)
 - a. **(Inputs)** Button 01~32
 - b. **(Outputs)** Lamp 01~32

APPENDIX F – SOFTWARE INSTALLATION

To program an SRU board you will need:

- **Smartrise Programming Pod**
- **A fully charged laptop with either of the following operating systems: Windows XP, Vista, 7 or newer.**

- **Note: To check what operating system your Laptop has, click on the Start Menu on the lower left corner, right click on “My Computer”, and click on properties. You will see the windows edition in this menu. If running on a Windows XP operating system, be sure that all updates are currently up to date.**

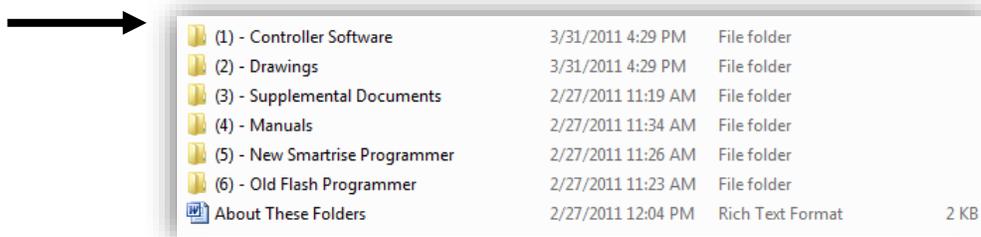


- **The software for your specific job is provided by Smartrise in two ways: a Smartrise CD included in the job binder OR by online download. Instructions for each option are as follows:**

Software provided by CD

Every Smartrise job is provided with a binder that consists of two CD's containing software for the specific job. Smartrise controllers are shipped initially with the software already installed on the controller; these CD's are provided as back-ups.

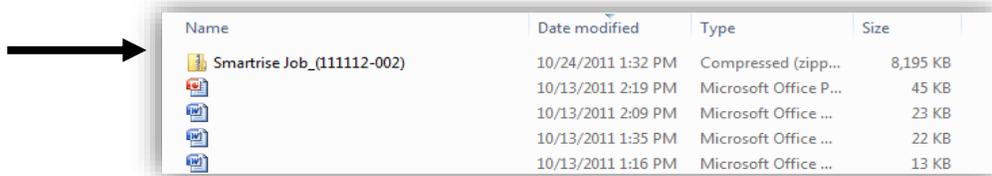
- Insert the supplied CD into the CD ROM drive. Usually a menu similar to the one shown below will appear. If no menu appears then open “My Computer” and click on the CD ROM drive.
- Click on the “Open folder to view files” option to explore the Smartrise CD folders. A list of folders with the software will appear. The software is located in the “(1) – Controller Software” folder.



Software provided by online download link

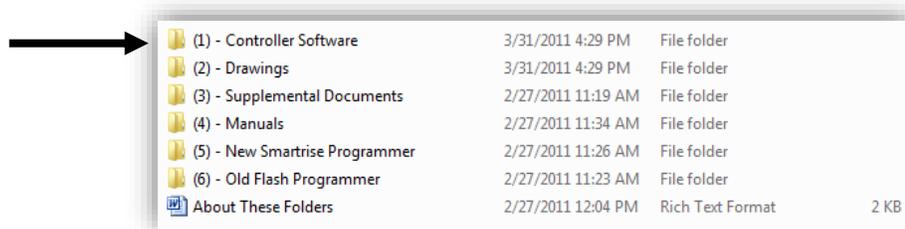
If an update was made to the job OR the CDs are missing, Smartrise can send an e-mail with a link to a downloadable zip file for the software. Download the file to a known location on the computer.

- Navigate to the location the file was downloaded to and double click the zipped folder as shown below.



Name	Date modified	Type	Size
 Smartrise Job_(111112-002)	10/24/2011 1:32 PM	Compressed (zipp...	8,195 KB
 Microsoft Office P...	10/13/2011 2:19 PM	Microsoft Office P...	45 KB
 Microsoft Office ...	10/13/2011 2:09 PM	Microsoft Office ...	23 KB
 Microsoft Office ...	10/13/2011 1:35 PM	Microsoft Office ...	22 KB
 Microsoft Office ...	10/13/2011 1:16 PM	Microsoft Office ...	13 KB

- When the zip file is opened, the software will be located in the “(1) – Controller Software” folder.



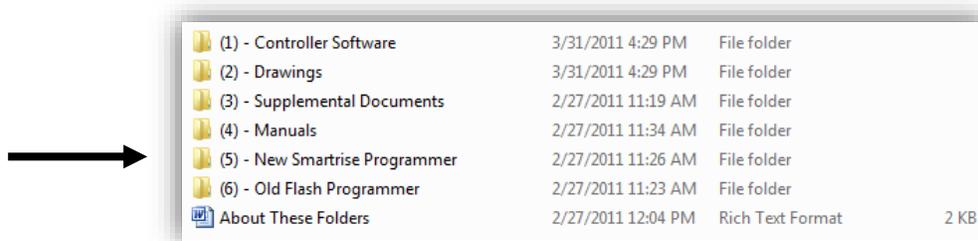
 (1) - Controller Software	3/31/2011 4:29 PM	File folder	
 (2) - Drawings	3/31/2011 4:29 PM	File folder	
 (3) - Supplemental Documents	2/27/2011 11:19 AM	File folder	
 (4) - Manuals	2/27/2011 11:34 AM	File folder	
 (5) - New Smartrise Programmer	2/27/2011 11:26 AM	File folder	
 (6) - Old Flash Programmer	2/27/2011 11:23 AM	File folder	
 About These Folders	2/27/2011 12:04 PM	Rich Text Format	2 KB

APPENDIX G – PROGRAMMING A REPLACEMENT SRU

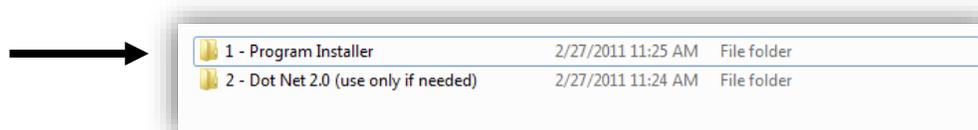
Special considerations need to be made when installing the software on a Smartrise SRU.

You need to install the Smartrise Programmer Application prior to installing the software on the SRU boards. Use the following procedure:

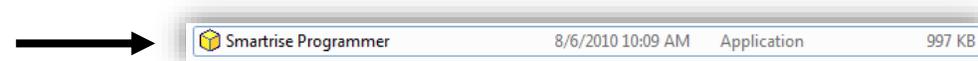
Open the (5) – New Smartrise Programmer Folder in your software package



Open the 1 – Program Installer Folder

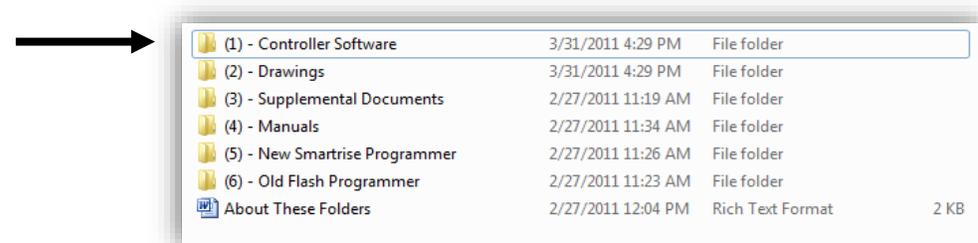


Install the Smartrise Programmer



Once the Smartrise Programmer is installed go back to the index of folders shown below and open the

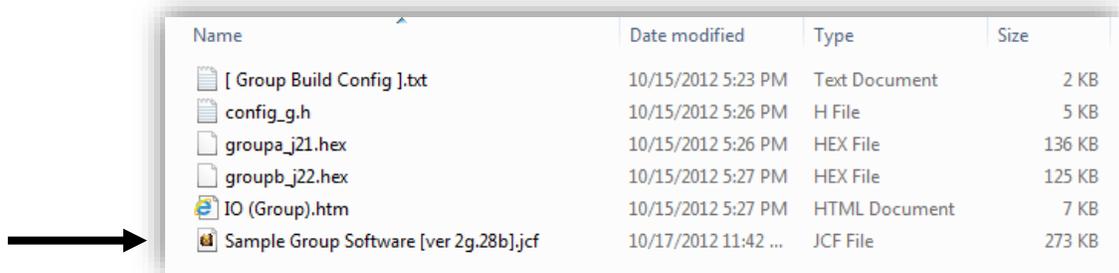
(1) – Controller Software folder with the JCF Software file inside shown below:



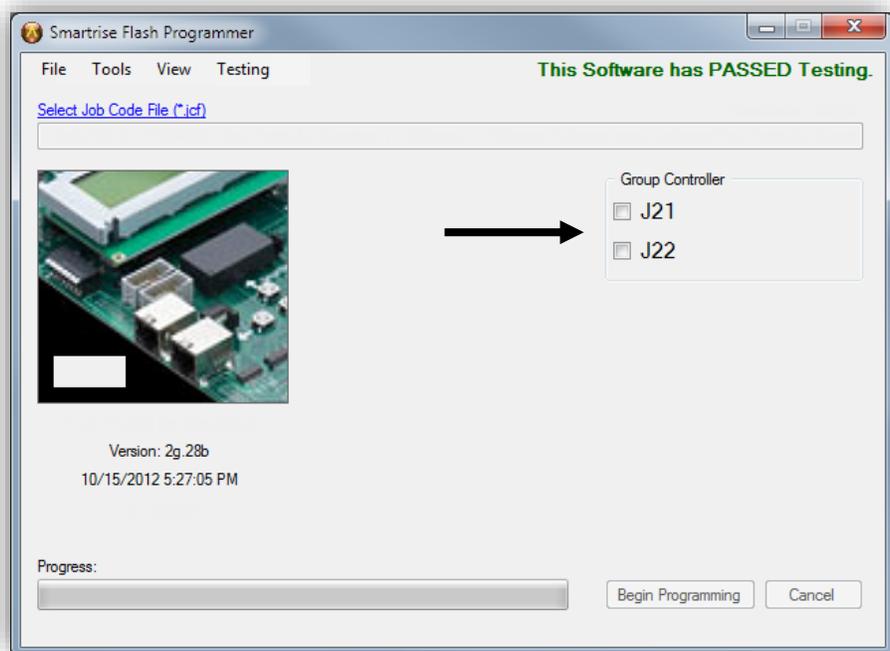
Open the Group Software Folder, in this example the version of the Controller software is 2.28s and the Group software is 2g.28b but the version may vary from job to job.



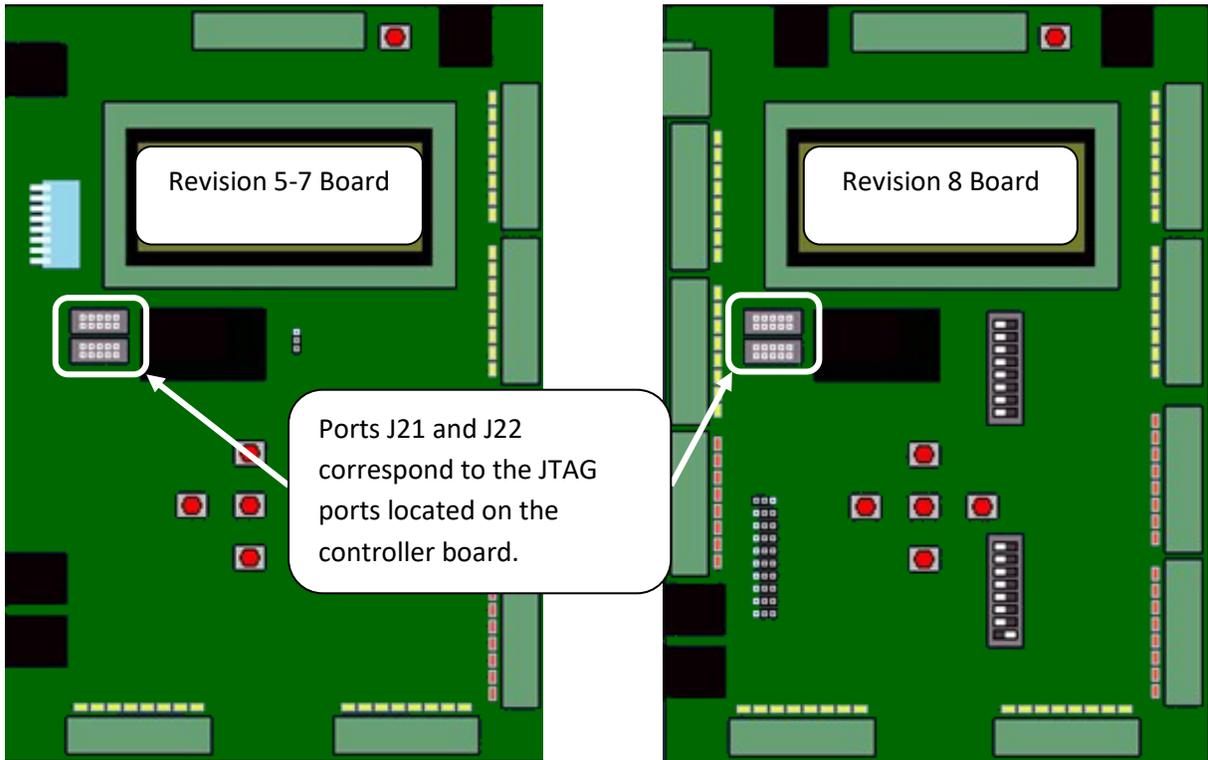
Open the JCF file by double-clicking on it. If it doesn't open then you might not have the Smartrise programmer installed. Refer to previous section for installation instructions.



The Smartrise Programmer interface:



Note: The group software is the only software located on this interface.



It is imperative that you install the correct software onto the correct JTAG port.

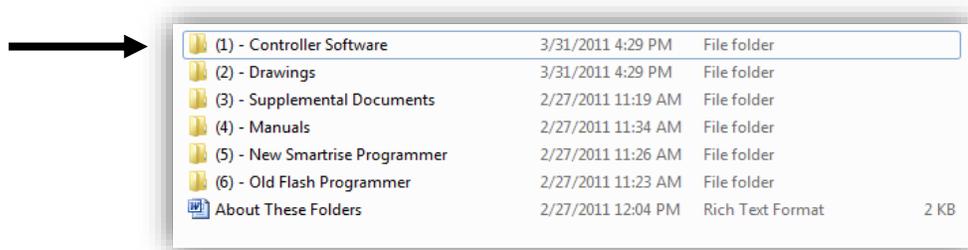
To do this, first connect your Smartrise programmer to your laptop via USB, and then connect the other end to the JTAG port on the controller.

Warning: As mentioned earlier, your laptop needs to be fully charged for this process, plugging in your laptop to an AC source while installing software could result in damage to the SRU Board. Also, do not disconnect the programmed pod from the SRU board while the controller is being programmed.

Identify which controller you are installing, IE: Machine room, car-top, cop.

Programming a Group Controller SRU

The group controller software will be located in the Controller Software folder.



Then locate the folder with the group software in it. The folder will clearly be labeled “Group [software version]”. After locating the jcf file, proceed below.

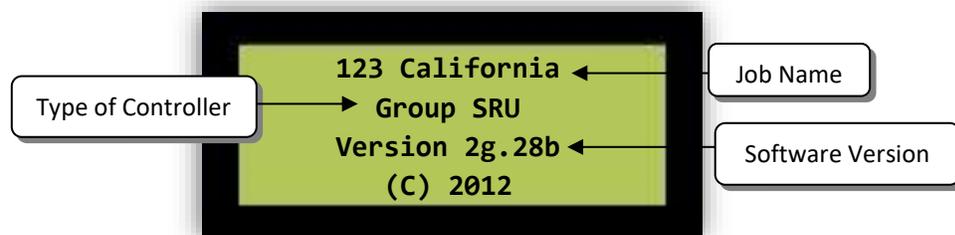
- A controller cannot be programmed if unpowered, ensure that you have 24V supplied to the controller.
- Activate **Dip Switch #1** on the group controller. (The group controller will not fault like the machine room controller)
- Plug in the programming pod into the **J21** port first. Select the **J21** checkbox on the Smartrise programming application show below.



- Next, click the “**Begin Programming**” button on the bottom of the programming interface to begin programming the board.
- Notice the progress report bar, when programming is finished, the LCD display will show “**Progress: Done**”. NOTE: Verify that the POWER and RUN LED’s on the programming pod itself are off before disconnecting it from a controller.
- Next move the programming pod from port **J21** to **J22**, click on the **J22** check box and then the “Begin Programming” button.
- When programming is finished:

CYCLE POWER – ** DO NOT PRESS THE RESET BUTTON **

- Next, go to the **MAIN MENU | SET UP | DEFAULT ALL |** select “Yes” and press the Enter (center) button. The controller will begin to default all the factory parameters (This could take several minutes). Once this is finished, cycle power again.
- When the controller is fully powered and finished loading, turn off **Dip Switch 1**.
- Verify that the controller is programmed correctly. This is done by going to the **MAIN MENU | ABOUT**. If all the information is correct, the controller software has been successfully installed. You will see something that resembles the figure below.



Software Version

- If all the information is correct, the Group Controller has been successfully programmed.