



700-AMM Installation QRG (Input Module)

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1.0 Installing a 635-DSI Board on the I2C Data Bus

This section describes installing a 635-DSI Board on the I2C Data Bus (ribbon cable) to support AMMs on RS485 Section.

DO NOT INTERRUPT FLASHING. Do not interrupt the power source, I2C Bus, or SW1 Reset on the CPU or DSI board during flashing process. Interrupting flash can damage board memory and require factory repair.

1. System Galaxy Software SG 10.4 (or higher) required. All existing & new panels must be flashed to current flash.
2. 635-CPU supports 635-DSI with 700-AMM Input Modules on the RS485 Section (i.e. not supported on a 600 CPU).
3. 635-DSI Board supports up to 16 Input Modules on each RS485 Section: for up to 4000 ft. total line distance.
4. 700-Input Module supports 16 Inputs per board (256 inputs on each DSI RS485 Section).
5. 700-Input Module current draw is 0.03 Amps (30 mA).

NOTE: a 635-CPU supports up to 64 devices per CPU Board. Each 700-Input Board counts as 1 device (DSI Board not counted).

6. SET THE DSI BOARD ID using dipswitch pos. 4 thru 8. (factory default 16 = only position 4 ON)
 - a) Turn OFF/DOWN all Switch Positions 4 thru 8.
 - b) Then only turn ON/UP the DIP Switch positions that are needed to set the desired Board ID – use table below.
 - The Board ID must be unique on the I2C data bus (ribbon cable), and Valid IDs are 1 thru 16.

TABLE FOR SETTING BINARY DIPSWITCH (BOARD NUMBERS)

ID	Actual DIP Switch Position	ID	Actual DIP Switch Position
1	8 = ON	9	5, 8 = ON
2	7 = ON	10	5, 7 = ON
3	7, 8 = ON	11	5, 7, 8 = ON
4	6 = ON	12	5, 6 = ON
5	6, 8 = ON	13	5, 6, 8 = ON
6	6, 7 = ON	14	5, 6, 7 = ON
7	6, 7, 8 = ON	15	5, 6, 7, 8 = ON
8	5 = ON	16	4 = ON (factory default)

- OPTION-C (Switch pos. 3) is OFF (19200 bps).
- OPTION-B (Switch pos. 2) is unused.
- OPTION-A (Switch pos. 1) is unused

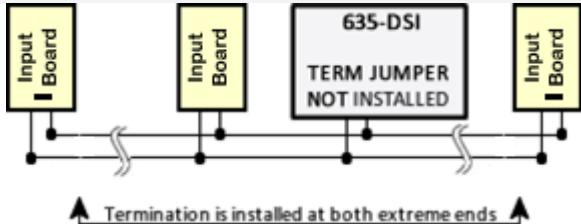
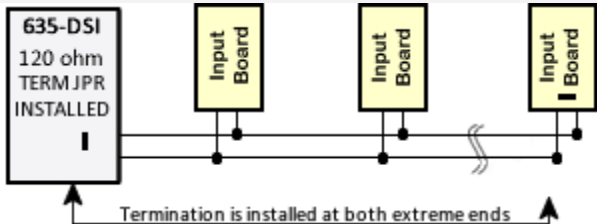
7. Correctly set the 120-ohm Termination Jumper on each RS485 Section (JP4/JP5) of the DSI Board.
 NOTE: Consider the RS485 Sections separately when setting the termination jumpers. The RS485 Sections function independently; thus, one section of the DSI might be at the *end-of-line*, while the other section is not.

Diag. A. DSI Jumper shown in the TERM position when DSI Board is located at the end of a RS485 wire-run.

Diag. B. DSI Jumper shown OPEN (NOT INSTALLED) when the DSI is NOT at the end-of-line (120 Ω jumpers is installed only on the Input board at the 'extreme end' of the line).

Diagram A: 120 Ω term jumper installed on DSI.

Diagram B: 120 Ω term jumper not installed on DSI.

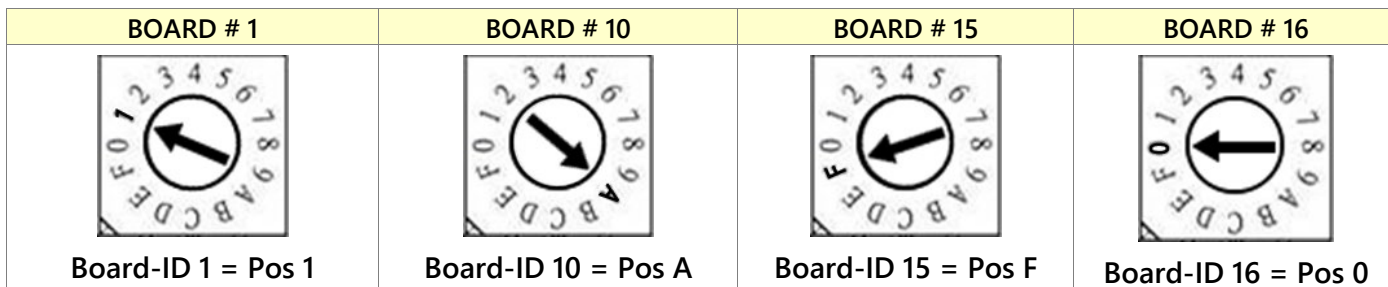


Use the BLACK 2-PIN JUMPERS (included with Boards) Installed ONLY at the end of the RS-485 wire-runs.

8. **Install the DSI Board into the controller cabinet and connect to the I2C Bus (ribbon cable) and power harness.** The DSI must be communicating on the I2C bus before connecting the Input Modules. Verify DSI communication by entering the CPU's IP Address into a Web Browser* to confirm the connection status of the DSI Board. (*PC and CPU must be on same network segment. Board appears on **Panel Status page**. Board Status should = Normal. When using the Web Config Page diagnostics, you should uncheck/update the server 1 connection) Alternately, a DSI connection can be confirmed by retrieving/saving in the Controller Programming screen via the SG software.)

INSTALLING THE 700-AMM (Input Module)

9. **Before installing a 700-AMM Input Module, you must configure the Board-ID on the Rotary Switch:**
- a) **Use screwdriver to change rotary switch:** Each Input Module must have a unique ID on the DSI RS485 Section. Valid Board ID = 1 thru 16.



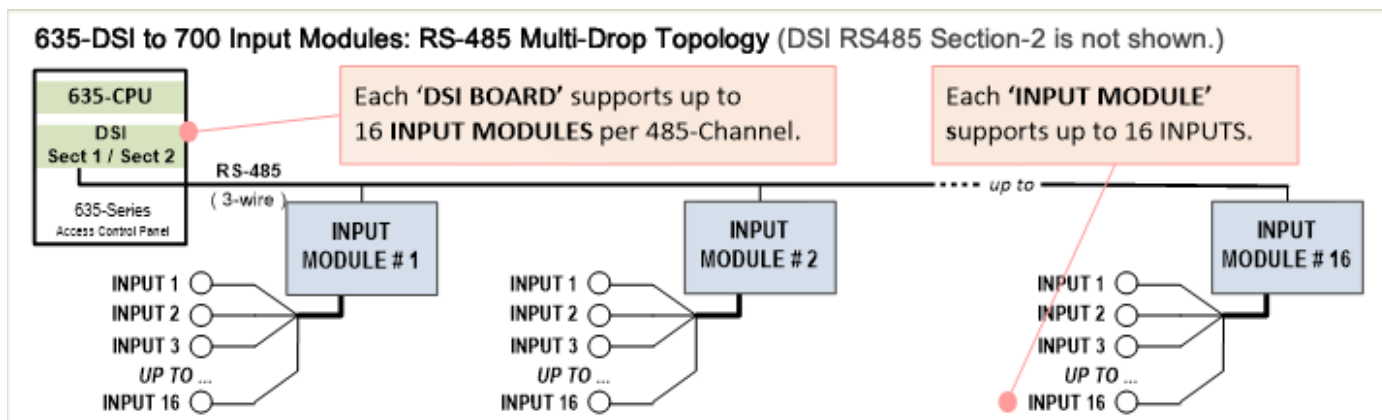
- b) **Table 2: Board ID Rotary-Switch Settings** and **Table 3: Input Supervision LED States**

NOTE: the swappable Input Supervision Resistor Pack is 4.7K (default). You can swap to a 2200K Ohm Resistor Pack. The EOL/Inline Resistors must match the value of the resistor pack installed on the Input board.

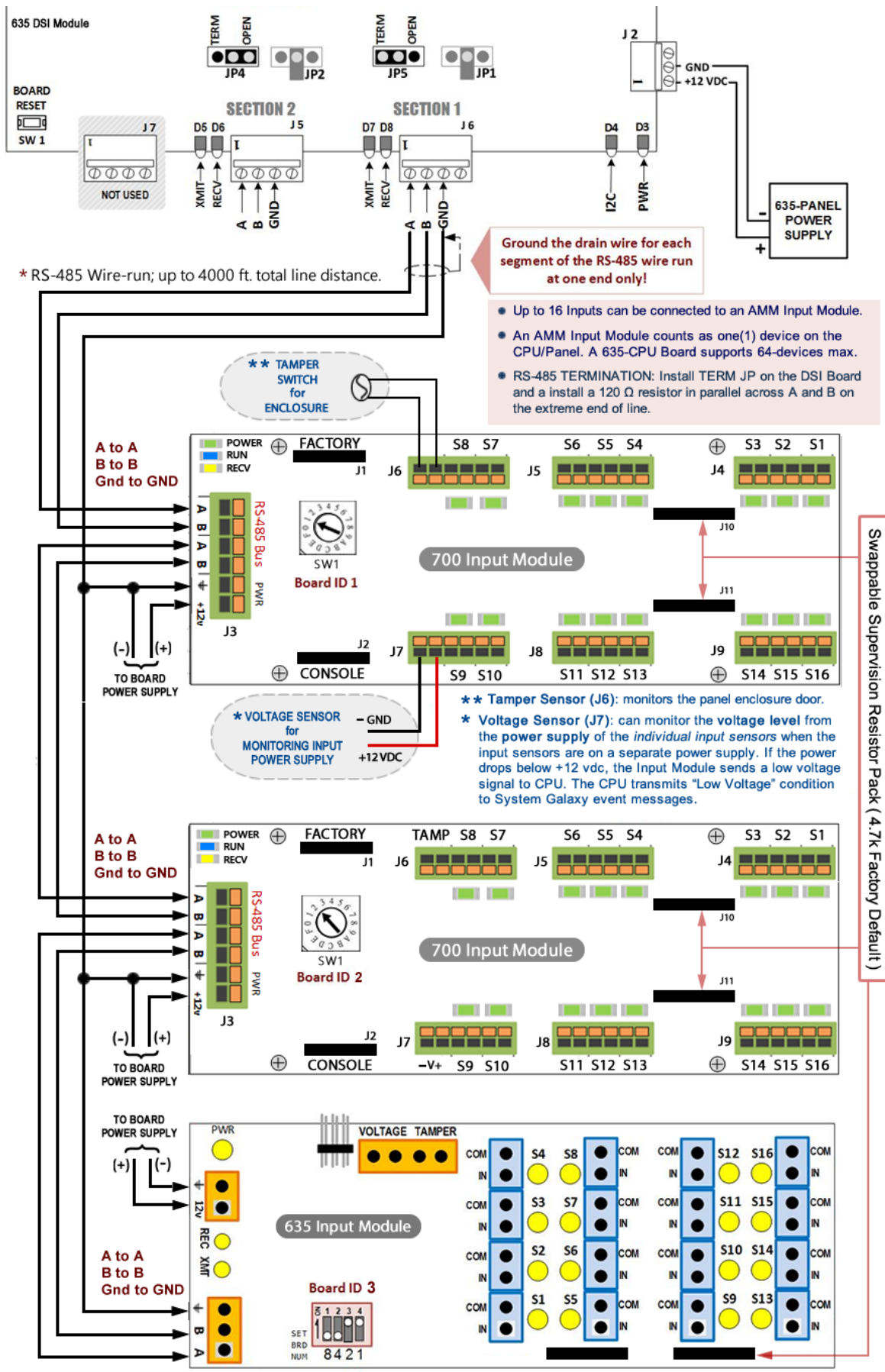
Table-2: Board ID Numbering for Rotary Switch Settings (uses hexadecimal markings)			
Switch Position	AMM ID	Switch Position	AMM ID
1	1	9	9
2	2	A	10
3	3	B	11
4	4	C	12
5	5	D	13
6	6	E	14
7	7	F	15
8	8	0	16

Table-3: Input Supervision LED States		
Supervision Resistors	Device Contact	LED Blink Rate
No Resistors	Open	Fast
	Closed	OFF
Series Resistor	Open	Fast
	Closed	Slow
Parallel Resistor	Open	Slow
	Closed	OFF
Series/Parallel Resistors	Open	Slow
	Closed	Slow

- c) **RS485 Topology Diagram of 635-DSI Section-1:** showing *Board IDs* and *Input Numbering* of the Input Modules.



10. RS485 NETWORK WIRING: Land the 3-Wire Cable from DSI Board RS485 Section → 700-AMM Input Boards.



11. INSTALLER CAN VIEW AND TEST INPUTS from the embedded web page as follows:

- Enter the panel's IP Address into a *web browser* to find the *Panel Status page*. (The PC/browser must be able to reach the same network segment that the panel is in).
- In the '**Attached Boards**' table, click on the **Serial#** of the **DSI Board** that is connected to the Input Modules
RESULT: This will open the *DSI Testing page* (see below).

**System Galaxy 635 Web Server
Panel Status**

Model Number: 635
Local Date/Time: 09-09-25 05:22/2014

----- This image is cropped to save space -----

Attached Boards						
Serial#	Board#	Status	Board Type	Version	Using CPU	Flash Update
3400004	4	NORMAL	635-DSI	5.05	1	n/a
3000001	1	NORMAL	635-DPI	5.05	1	n/a

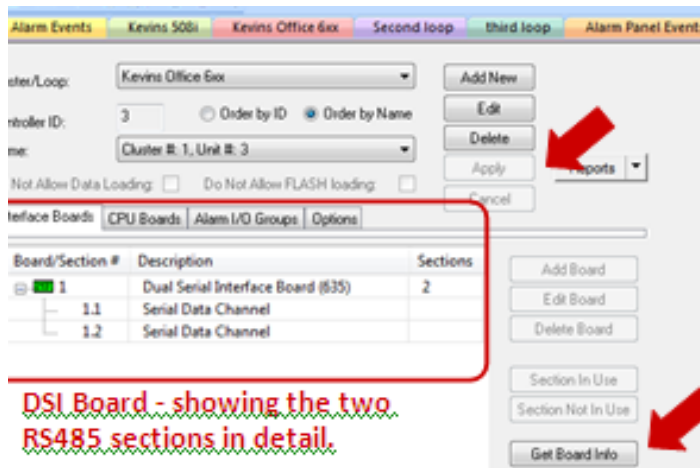
- In the *DSI Test Screen* (below), choose the **Section# (one or two)** that the *Input Modules* are connected to.
- In the [Function] list choose 'Galaxy Input Modules'.
- Click the [APPLY] button to retrieve the states of the individual inputs.
RESULT: The Found column will display "yes" for each AMM Board that is physically connected and powered ON.
All **AMM Modules** that are connected to the chosen **DSI RS485 Section** will display a color-coded block that represents the state of the individual input. Inputs 1 - 16, Voltage (Vt), Tamper (Ta) are shown.
 - GREEN** = Short Circuit
 - RED** = Open Circuit
 - YELLOW** = 1 Resistor detected (for inputs 1 thru 16)
 - ORANGE** = 2 Resistors detected (for inputs 1 thru 16)
 - WHITE** = No module or inputs detected for that Board ID.

Configuration Options				Selection Testing			
Local Date/Time:				Section	Two		
Serial Number:	3400004			Function	Galaxy Input Modules		
Software Version:	5.05			<input type="button" value="Apply"/>			

DSI Section 2 setup for Galaxy Input Modules																			
Legend: short circuit 1 resistor 2 resistors open circuit																			
iMod	Found	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	Vt	Ta
1	yes	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Yellow	Green
2	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
3	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
4	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
5	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
6	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
7	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
8	yes	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red	Red
iMod	Found	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	Vt	Ta
9	no																		

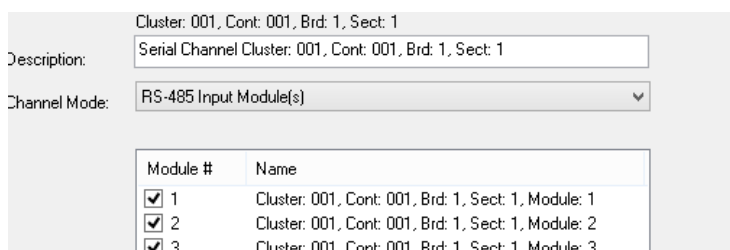
12. In the System Galaxy Software, you must program the Loop/Cluster, Controller, and DSI Board.

- ▶ In the *Controller Properties* screen, click **[Edit]** then click **[Get Board Info]**. The boards that are attached to that CPU will be retrieved and can be saved.
- ▶ NOTE: The CPU must be powered ON and connected to the LAN and the CPUs configured with IP Addresses and the Boards installed and connected to the I2C ribbon cable. The GCS services must be running/connected.
- ▶ Set unused board sections to **[NOT IN USE]**.
- ▶ Remember to click **APPLY** to save settings.



13. Select **Configure > Hardware > Serial Channels** from the SG menu to configure the DSI boards.

- ▶ Set the **Channel Mode** field to "RS485 Input Module".
- ▶ "check" only the Input Board numbers you installed.
- ▶ Remember to click **APPLY** to save settings.



14. Select **Configure > Hardware > Inputs** from the SG menu to configure the individual Inputs.

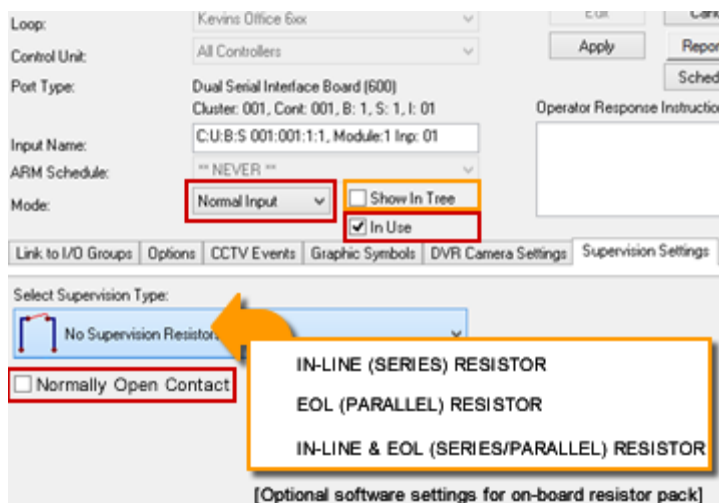
- ▶ Select the correct Loop and Controller, and the Input from the [Input Name] list.
- ▶ Click **EDIT** button. **You may change the Input Name to a logical name** (the physical coordinates of will continue to display above the name field for reference (cluster, unit, DSI board, section, input module ID and input position number).
- ▶ **You must set the Mode for the input.**
- ▶ **Set the ARM Schedule as appropriate.**
- ▶ **You must check the [IN USE] option.**
- ▶ You can also check the **[Show in Tree]** option to display inputs in the SG Hardware Tree.
- ▶ In the **Link to I/O Groups** tab (not shown), configure the input as desired (*you must have already created any custom I/O Group name if needed*).

NOTE: See Chapter 9 of **Software User Guide** for more Input Programming steps – avail. thru Software Help Menu.

15. **You must set the [Normally Open Contact] option** to match the type of device that is wired to the input (i.e. *check* if device is N.O. contact; *uncheck* if device is N.C.). Located on the **Supervision Settings** tab (shown below).

16. (OPTIONAL) **Configure Input Supervision if used.**
NOTE: An on-board *supervision resistor pack* is installed on the Input Module (4.7K Ω factory default). The resistor pack can be changed. For supervision to be operational at an individual input, then the inline/end-of-line resistors must be installed at the device-end of the wiring and the supervision programming must be configured for the individual input (in this screen). The value selected in the Input Properties screen must match what is installed in the field wiring – and must also match the on-board resistor pack. See Table-3 for Input Supervision LED Status

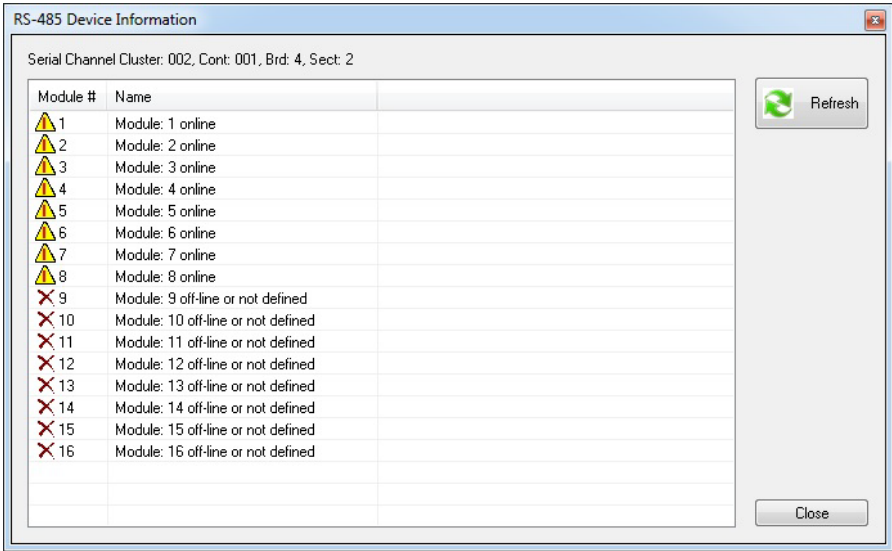
NOTE: (J3) aux voltage & cabinet tamper inputs are also configured from this screen (supervision does not apply).



17. **IMPORTANT:** You must launch *GCS Loader Utility* and load data to the panel. You can open the Loader from SG by right-clicking the appropriate *Loop Name* in the Hardware Tree, then choosing the 'Load' option from the menu.
- a) When the *initial Data Load* is completed, the system will calibrate the inputs.
 - b) Future updates to the Input programming should be sent to the panel when you click [Apply] in the programming screen. However, you are in doubt, or the panel doesn't seem to pick up the change, you can always manually perform a data load to be sure that your inputs are correctly calibrated.
 - c) In the GCS Loader's Data tab, you should check all available loader options, because some programming is interdependent on other components such as schedules. To speed up the loading process, you can safely uncheck or omit loading 'all cards' if you know the user cardholder database is large and you know you do not have card changes – or load all cards on a separate pass after you finish loading the system programming.

18. You can also verify the input device status on the RS485 Input Modules from the Controller Properties screen. ([Configure > Hardware > 635 Controller](#))

- a) In the *Controller Properties* screen, expand the DSI Board and select the appropriate Section number (not pictured).
- b) Click the [RS-485 Device Info] button to retrieve a list of all the Input Modules connected to the DSI Board. *Individual inputs are not shown in this screen.*
 - 'online' = an Input Module is detected and is configured in System Galaxy for the Module number shown. The Module number is the Input Board's binary ID that was configured in **Step 8** of this document).
 - 'off-line / not defined' = either the system did not detect a module – OR – the module has not been configured into the *Serial Channel programming* screen (see **Step-13** of this document).



List of Modules connected to DSI#4 Section-2 located in Controller#1 of Cluster#2

NOTE: The screen below shows that there are **8 Modules** on Section 2 of the DSI Board. *The numbers 1-8 are the Board IDs of each Input Module, not the individual inputs.*

NOTE: To see the status of individual inputs, you can use the Device Status screen (View > Device Status).