

Secured Series: Hub Plus Kit

Single Door Controller Package Installation Manual

This package is designed to simplify the connections to our Secured Series Hub Plus Controller. This will translate into shorter installation times and increase your profits while at the same time increasing the protection and reliability of the device. This manual will give you step by step guidance through the installation.

Note: When installing the Hub Plus Kit do not refer to any wiring diagrams in the Secured Series Hub Plus Controller Features, Programming and Wiring guide. They no longer apply when using this kit. The programming instructions do apply.

Features:

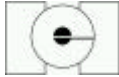
- All plug in wire harnesses are connected and now accessible through terminal screws.
- All there is to do is connect the supplied transformer to the power supply.
- No more soldering.
- Has Com Line protection for port A and Port C making networking between buildings more reliable.
- On Board RJ11 jack that is jumper selectable makes connecting to a PC or Modem within 25 Ft easier.
- On-Board Loop-back connectors for faster and easier com port tests.
- Inputs for door contact and REX have components that make testing and operation easier.

Installation

- ❑ **Step 1: Unpacking the device and checking the packing list.**
- ❑ **Step 2: Making the connections between the Front End Reader and the Hub Connection Board.**
- ❑ **Step 3: Making the connections for the REX and Door Contact.**
- ❑ **Step 4: Wiring the On-Board RJ11 Jack in the Hub Connection Board(for use with optional PC Software, available in MS-DOS and Win95 versions).**
- ❑ **Step 5: Connecting the 16.5 VAC transformer and battery (not included) to the Power Supply.**
- ❑ **Step 6: System power up.**

If you have disassembled the Hub Plus Kit and need to reconnect the Hub Plus Controller follow the steps listed below:

- ❑ **Step A: Mounting and disassembling the Hub Plus Controller.**
- ❑ **Step B: Making the connections between the Hub Plus Controller and Hub Connection Board.**
- ❑ **Step C: Reassemble the Hub Plus Controller.**
- ❑ **Step D: Connecting the Hub Plus Controller to the Power Supply.**
- ❑ **Step E: System power up.**



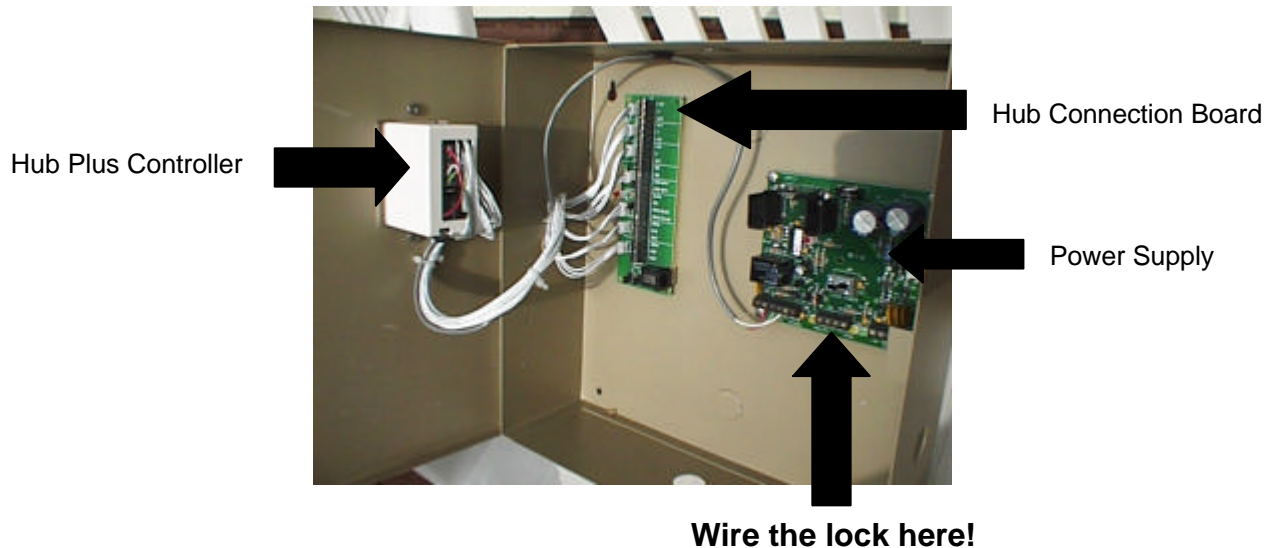
□ **Step 1: Unpacking the device and checking the packing list.**

Open the box. Inside is a metal enclosure. Mounted in the door of the enclosure is a Hub Plus Controller. Open the metal enclosure and take inventory. Inside the metal enclosure you will find:

- 1 Hub Plus Controller mounted in door of enclosure
- 1 Hub Connection Board (mounted)
- 1 IEI Door Gard Power Supply 12 Volt 1 Amp (mounted)
- 1 16.5VAC Transformer
- 1 Camlock
- 6 Three-Conductor Wire Harnesses (connected between Hub Plus and Hub Connection Board)
- 1 Four-Conductor Wire Harnesses (connected between Hub Plus and Hub Connection Board)
- 1 Four-Conductor Cable (connected between Hub Plus and Power Supply)
- 1 Set of Battery Cables and Hardware Packs
- Secured Series Hub Plus Features, Programming, Wiring Guide
- Secured Series Hub Plus Kit Installation Manual
- Enclosure Dimensions (11.5" w x 11.5" h x 4" d)

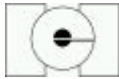
Please check the contents of the enclosure and verify all components on the packing list are present.

Taking this inventory will familiarize you with the components as well as ensure you have a complete kit.



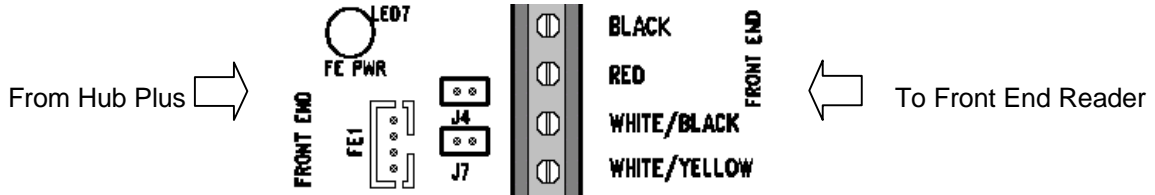
□ **Step 2: Connecting the Front End Reader to the Hub Connection Board.**

The Hub Plus Kit should be mounted on the secured side of the door and **is not meant to be used as an access device**. That is to say that no one should be using the keypad of the Hub Plus as a means of gaining access or egress. The devices to be used at the door to gain access are **Front End Readers** (not included). There is an explanation of what these units are in the Hub Plus Features Programming and Wiring Guide which is found in the white cardboard box along with the Hub Plus. Whichever Secured Series Front End Reader(s) (you may wire two Front End Readers in parallel at the door) you choose appropriate for your application it will be connected to Hub Connection Board. On the Hub Connection Board you will see four screws in the section labeled Front End. Each of these screws is labeled with a color and they will connect to the corresponding color of the four-conductor wire harness that is included with the Front End Reader. The connection is made with **four-conductor stranded with**



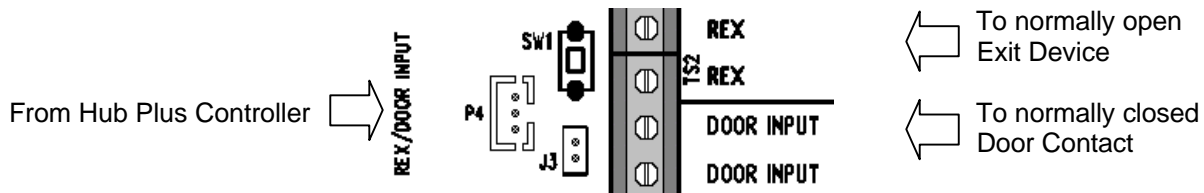
overall foil shield type cable (not included). You must use this type of cable to ensure signal integrity. After you have made your connection it is also vital to terminate the drain wire of the cable. The drain wire is a bare wire

that runs the entire length of the cable inside the shield and along side the other four conductors. This drain wire is to be terminated at the Earth Ground terminal of the Hub Connection Board only. **Do not terminate the drain wire at the Front End Reader.**



□ **Step 3: Making the connections for the REX and Door Contact.**

The manual for the IEI Secured Series Hub Plus Controller has a very good explanation of the functions of the REX (Request to Exit) and Door Contact input loops. Therefore in this manual we will merely discuss the connections and the new testing feature. Wire your normally-open device to the REX terminals and a normally-closed magnetic door contact to the DOOR INPUT terminals. A jumper cap J3 has been provided so that if you do not choose to incorporate a normally-closed door contact in your application you can shunt the loop by placing the jumper cap on both pins. If you are including a door contact do not forget to place J3 on one pin only otherwise the loop will be shunted and the local alarm functions as well as auto-relock will not function.

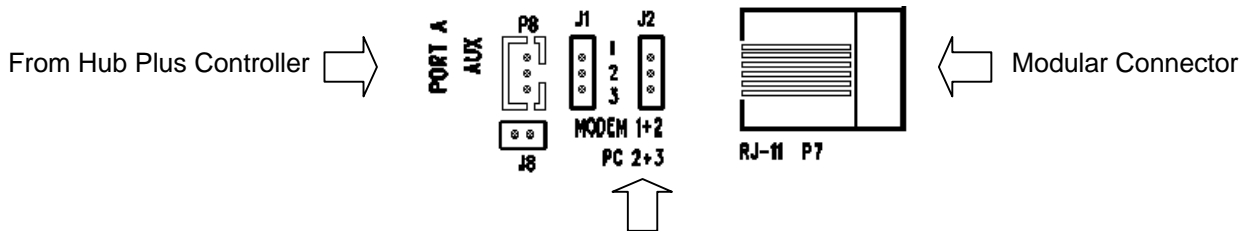


□ **Step 4: Wiring the On-Board RJ11 Jack in the Hub Connection Board (for use with optional PC Software, available in MS-DOS and Win95 versions).**

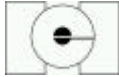
The On-Board RJ11 Jack makes connection to a PC or a Modem easier providing that the PC or Modem is located within 25 feet of the Hub Plus Kit.

➤ **If your PC or Modem is located at a distance greater than 25 feet you must use the surface mount RJ11 Jack that is included with your PC Software Kit.**

If you wish to use the On-Board RJ11 Jack disconnect the white 3 conductor wire harness from Port A on the Hub Connection Board and connect it to Port A (AUX) on the Hub Connection Board. The On-Board RJ11 Jack is Jumper Selectable. There are 2 pin-rails located behind the modular connector on the Hub Connection Board. Each of these pin rails has a jumper cap. If you are connecting to a PC within 25 Ft of this unit both of the jumper caps must be on pins 2 + 3. If you are connecting to a modem within 25 Ft of this unit both of the jumper caps must be on pin 1 + 2.



Jumper Setting for On-Board RJ11 Connector



Listed below are the 4 installation scenarios when using the PC Software:

Local Setup- Hub Plus Kit is located within six feet of PC.

By installing the Hub Plus Kit within six feet of the PC, not only may you use the On-Board RJ11 Jack on the Hub Connection Board but you may also use the six feet of straight phone cord that came with your PC Software Kit. Connect the straight phone line that came with your PC Software Kit from the DB connector on the serial port of your PC to the Modular Connector of the Hub Connection board. Place both of the Jumper Caps behind the modular connector of the Hub Connection Board on pins 2 + 3.

Remote Setup- Hub Plus Kit is located within six feet of a dedicated wall phone line.

By installing the Hub Plus Kit within six feet of the wall jack, not only may you use the On-Board RJ11 Jack on the Hub Connection Board but you may also use the six feet of straight phone cord that came with your PC Software Kit. Connect the straight phone line that came with your PC Software Kit from the modem to the modular connector of the Hub Connection Board. Place both of the Jumper Caps behind the modular connector of the Hub Connection Board on pins 1 + 2.

Local Setup- Hub Plus Kit is located greater than six feet but within 25 feet of PC.

This scenario is the same as the scenarios above with one difference. You may not use the length of straight phone cord that came with your PC Software kit since it is only six feet long. In this situation you will have to supply your own straight phone cord of the desired length. **Be sure to use straight phone cord and DO NOT EXCEED 25 FEET.**

Local or Remote Setup- Hub Plus Kit is located greater than 25 feet away from PC or modem.

With this scenario you may not use the On-Board RJ11 Jack. The surface mount RJ11 Jack will have to be used. Mount the RJ11 Jack within six feet of the PC or Modem. Using the white 3 conductor wire harness (included with Hub Plus Kit) make the connection between Port A of the Hub Plus and Port A of the Hub Connection Board. You will now use 4 Conductor Shielded Cable between the Hub Plus Kit and the surface mount RJ11 Jack. Since we are now using Port A on the Hub Connection Board the jumpers have no effect.

The connections between Port A of the Hub connection Board and the RJ11 Jack are as follows:

Hub to PC

Blue to Red
Gray to Black
Green to Green

Hub to Modem

Blue to Black
Gray to Red
Green to Green

The surface mount RJ11 wiring instructions are also found in your Software Installation Manual. Just consider that Port A on the Hub is now the Port A terminal screws on the Hub Connection Board.

Performing a Loop-back test on the Hub Connection Board.

Loop-back jumpers are an added feature of the Hub Connection Board. Using these jumpers will shorten the time it takes to perform these tests and decrease troubleshooting time.

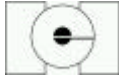
Whichever port you use to connect to Port A or Port A (AUX). Each one has a jumper directly below the receptacle for the connection from the Hub Plus Controller.

For Port A it is J5

For Port A (AUX) it is J8

The details for performing the loop-back test are covered comprehensively in the Software Installation Manual as well as the Hardware Installation Manual so we will not go into too much detail. All you need to know is that instead of shorting the Red and Black screws on the surface mount RJ11 Jack, you simply disconnect the wire harness between Port A or Port A (AUX) (whichever is being used) to the Hub Plus Controller, place the jumper across both pins at the Hub Connection Board, and perform the Com Port Test. **Make sure that after the test is completed the jumper is placed only one pin!**

A loop back jumper has also been provided for Port C as well. This gives you the unprecedented ability to test and make sure that data is being passed through the Hub Plus Controller to Port C.



The Com Port Test procedure is as follows:

1. Plug the Port A Wire Harness into Port A
2. Plug the Port C Wire Harness into Port C
3. Make sure the jumper cap for Port A is on one pin
4. Place the jumper cap for Port C (J6) on both pins
5. Remove any wires for the Port C screw terminals
6. Perform the Com Port Test

□ **Step 5: Connecting the 16.5 VAC Transformer and Battery(not included) to the Power Supply.**

Connect the 16.5 VAC Transformer included with the Hub Plus Kit to the Power Supply at the terminals marked 16.5 VAC CLASS II. Provided with the Hub Plus Kit are Battery Connection Cables. Connect these cables from your 12V battery (7AH Recommended) to the mounted power supply at the BATT terminals.

Polarity is an issue!! Be sure you know which battery terminals are positive and negative.

□ **Step 6: System power up.**

You should now have power to your system. Check the power status by checking the following:

The LED on the Power Supply should now be "on"
LED 7 on the Hub Connection Board should now be "on"
The red LED on the Hub Plus Controller should now be "on"

If the above requirements are met the system is now powered up and ready for programming and operation. If the above requirements are *not* met see the Troubleshooting Section of this manual.

If for any reason you need to replace the Hub Plus Controller. Follow the steps below to make the connections between the controller and the Hub Plus Kit.

□ **Step A: Mounting and disassembling the Hub Plus Controller.**

Note:

If you are using the Secured Series Software.

DO NOT FORGET TO REMOVE THE SECURITY CHIP FROM THE OLD HUB PLUS CONTROLLER AND INSTALL IT IN THE NEW HUB PLUS CONTROLLER.

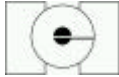
1. Look at the rear of the Hub Plus you will see the circuit board package through an opening in the rear of the casing.
2. Place your thumb on the black relay at the lower portion of the circuit board package.
3. With your thumb push the circuit board package forward. This will cause the keypad to bow and then pop out.
4. The absence of the keypad will reveal the circuit board package.
5. Carefully remove the circuit board package through the front of the Hub Plus casing.
6. Notice two mounting holes (which were hidden by Hub Plus keypad) one above and below the circuit bay.
7. Drop the Hub Plus casing into the cover of the enclosure where the knockout was.
8. Use 1" screws and nuts (enclosed) to mount the casing to the cover.

□ **Step B: Connecting the Hub Plus Controller to the Hub Connection Board.**

Now that the circuit board package is out of its casing we will connect the Hub Plus to the Hub Connection Board. Carefully pull the circuit board package apart. It is held together by 11 pins (9 on one side 2 on the other).

Note:

If you are using the IEI Secured Series PC Software Package with this unit and this is also the first or only door on the network, now is the perfect time to install the Security Chip. The Instructions for installing the Security Chip are found within the Installation Manual provided with your software kit.



The Hub Plus is made up of two circuit boards. On the board with the relays on it, look between the 5 screw terminal strip and the main relay. There you will find a 3-pin rail. A black jumper cap is also present on 2 of the pins. **This is known as the P5 Voltage Selection Jumper and it is used to configure the Hub Plus for the voltage being applied to it. In this case it will receive 12VDC from the Power Supply. For 12VDC the P5 Jumper should be on the two pins closer to the center of the board (pins 2+3). The Hub Plus is shipped from the factory set for 12-24AC or 16-24VDC. This is on pins 1+2.**

Included with the Hub Plus Kit are 6 three-conductor wire harnesses. These wire harnesses connect between the three-conductor male receptacles on the Hub Plus and the corresponding receptacles on the Hub Connection board. To ensure proper connection please make the connections between the Hub Plus and the Hub Connection board one at a time (e.g. Forced Door to Forced Door, Port A to Port A, etc.) Also included is a four-conductor wire harness. This connects between the four-conductor receptacle for the Front End Reader on the Hub Plus and the four-conductor receptacle on the Hub Connection Board. **Remember to feed the wires through the opening in the rear of the Hub Plus Casing, this is where they need to be when the entire unit is installed.**

□ **Step C: Reassemble the Hub Plus Controller.**

Carefully line up the 9 pins on the Relay Board with the 9-pin edge connector on Communications Board of the Hub Plus Controller. Insert these pins into the edge connector (be sure that no pins miss their corresponding holes, also make sure that no pins double up into one hole). Line up the two pins on the Relay Board with the 2 pin edge connector on the Communications Board of the Hub Plus Controller. Carefully squeeze the two boards together and insert the circuit board package into the circuit bay of the casing. **Note: The circuit board package goes into the circuit bay in ONE direction so that the LEDs on the circuit board package line up under the word "UP" on the front on the casing.**

□ **Step D: Connecting the Hub Plus Controller to the Power Supply.**

For this connection you will need a 12" length of four-conductor cable. Connect one end of the cable to the power supply at the four terminals marked TO KEYPAD these are +, -, C, NO. At the other end of the cable connect the four conductors to the corresponding screw terminals on the Hub Plus Controller.

□ **Step E: System power up.**

You should now have power to your system. Check the power status by checking the following:

- The LED on the Power Supply should now be "on"
- LED 7 on the Hub Connection Board should now be "on"
- The red LED on the Hub Plus Controller should now be "on"

If the above requirements are met the system is now powered up and ready for programming and operation. If the above requirements are *not* met see the Troubleshooting Section of this manual.

TROUBLESHOOTING

❖ **If the LED on the Power Supply is not "on":**

- Check the connection between the Power Supply and the Transformer
- Check the connection between the Power Supply and the Battery
- Check the output voltage of the Transformer (it should read at least 16.5 VAC)
- Check the AC on the electrical outlet (it should read at least 110 VAC)

❖ **If the Red LED on the Hub Plus controller is not "on":**

- Check all of the above
- Check the connection between the Power Supply and the Hub Plus Controller
- Check the P5 Voltage Setting on the Hub Plus Controller (see Hub Plus manual)

❖ **If LED 7 on the Hub Connection Board is not "on":**

- Check all of the above
- Check the connection between HCB(P4) and the Hub Plus Controller
- Check the connection between the HCB(FE1) and the Front End Reader

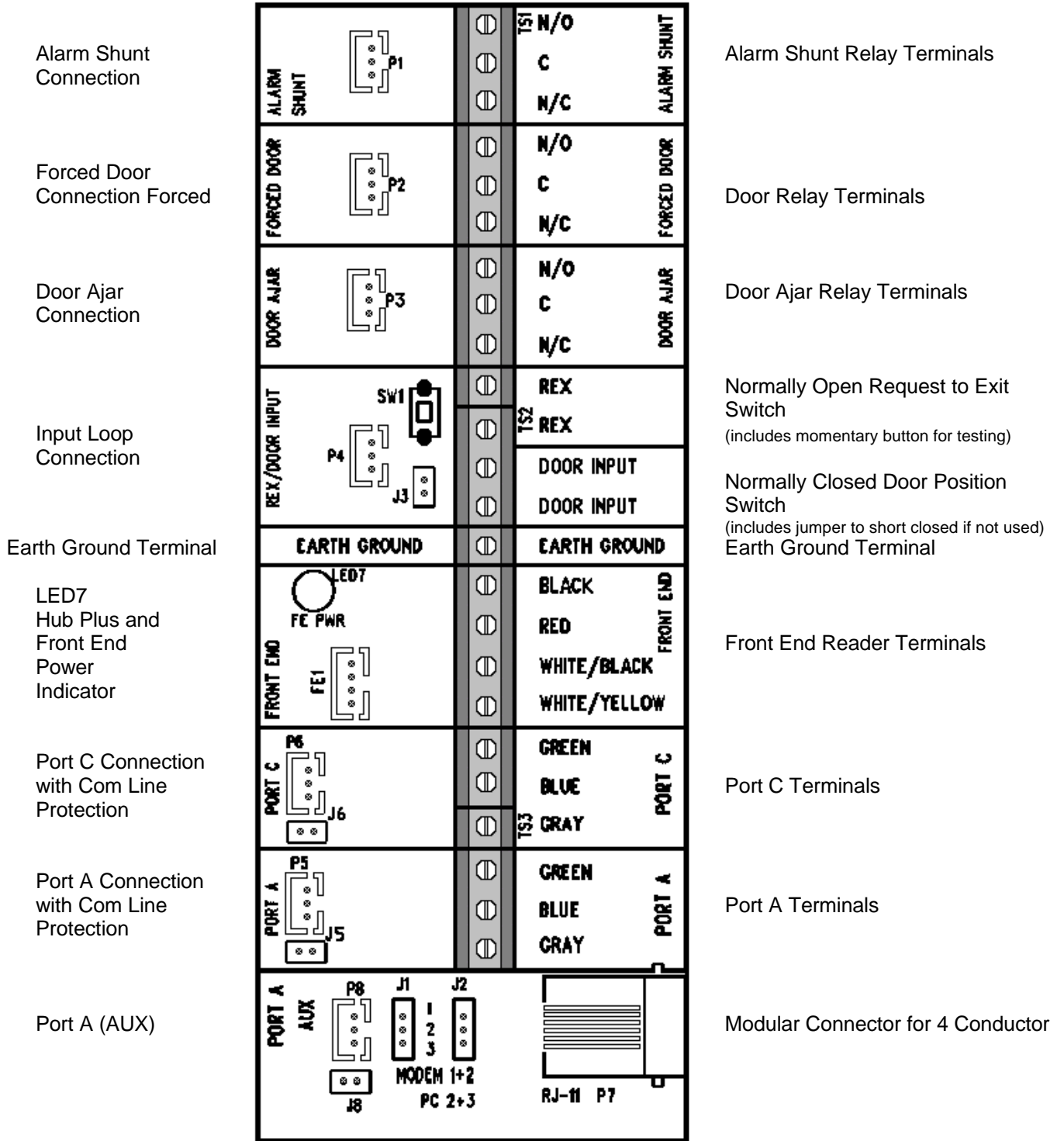
❖ **If all three of these LEDs are not "on" then call IEI Technical Support at 1-800-343-9502**

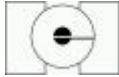


HUB CONNECTION BOARD LAYOUT

From Hub Plus

To Exterior Devices





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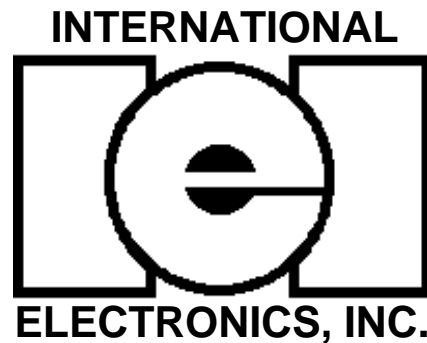
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