AURORA

Aurora Mobile Power³ ™
Controller Installation and Operations Manual

Part No. 3133.00050	REV. D	Revised on 01/26/05

Power 3 ™

Part No. 3133.00050	REV. D	Revised on 01/26/05

Aurora Mobile Power³ ™

Controller Installation and Operations Manual

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Introduction

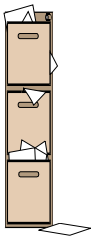
Thank you for purchasing the Aurora Power³ Electric Mobile System. We believe that you will find that the Aurora Power³ Electric Mobile System to be a highly efficient user-friendly system. The Aurora Power³ is a fully powered electric mobile aisle system. The operator's safety is our primary concern here at Richards-Wilcox, Inc.

Purpose of this Manual

This manual is applicable to the Aurora Power³ manufactured by Richards-Wilcox, Inc.

Richards-Wilcox, Inc. Company policy is one of continuous product improvement and the right is reserved to alter specifications at any time without prior notice. While reasonable effects have been made to ensure that at the time of publishing this manual all information is correct, the descriptions and illustrations appearing are not binding.

System Benefits



The Aurora Power³ makes optimum use of available space by using only one access aisle for each bank of storage racks, when mounted on mobile carriages. The mobile carriages can be moved either single or in large blocks to create an aisle wherever access is required.

The Aurora Power³ Electric Mobile System offers twice the storage capacity compared to conventional static shelving occupying the same precious space.

Major Characteristics

The major characteristics have been broken down into five categories:

Storage Capacity

- Optimum use of available storage space for any situation.
- Flexibility for multiple aisles per bank of storage.
- Storage is readily accessible.
- High-density storage capability.
- High useful load rating per carriage.
- High maximum moveable load.
- Remaining space between banks can be filled with stand alone static carriages.
- Carriages can be moved single or in blocks.

System Benefits Overview

- One touch-pad operation. Simply press the “Arrow Touch-pad” at the desired aisle.
- All mobile carriages move in a sequential order.
- Operator(s) are able to step into an aisle before the aisle is fully opened.
- The “Stop Touch-pad” also acts as an emergency stop.
- DC motors provide for a soft start and soft immediate stop.
- 24 month warranty on electronics. 5 year on mechanics.
- Long term reliability.

Versatility

- Carriages are available in a wide range of standard sizes.
- Nonstandard sizes are available on special order.
- May be installed in new construction or can be installed in existing buildings.
- Customer requirements can be met to a high degree.
- Compatible for mounting of various types and models of storage shelves and racks.
- Suitable for storage of office documents, archives, libraries, computer stations, warehouses goods, shops, museums, etc.

System Features

- Lighted Touch-pad for system status. The Touch-pads are located on the front of the end panels.
- Overhead cable conduit pantographs protect all wiring for mobile carriage to mobile carriage.

- Integrated microprocessor and solid state controls.
- All rails are driven eliminating carriage racking, utilizing full-length drive shafts.
- Textured paint finish.
- Powder-coat paints finish available in many colors.
- End panels are available in laminated finish or textured paint.
- Mobile carriages and shelving components are manufactured from one source.

Safety

- "Passive Aisle Safety" requires reset at open aisle.
- Full-length Photo-eye Safety sweep on one side of carriage is standard.
- "Motor Current Monitoring System (MCMS)", monitors motor for any slight indication of over-current.
- All electronics are fail-safe.

Warranty

With the exception of purchased components and units, Richards-Wilcox, Inc. provides the following warranty to the original purchaser of this Aurora Power³ Electric Mobile System. This equipment is free from defects in workmanship and material for a period of twenty-four (24) months on any electrical components and five (5) years on any mechanical components from the date of shipment from Richards-Wilcox, Inc. If during the warranty period following the date of shipment any covered part(s) is proven defective in either material or workmanship, it will be replaced without charge, freight prepaid. Components and units purchased by Richards-Wilcox, Inc. carry the manufactures warranty.

This warranty shall not be in force and effect unless:

- Purchaser gives Richards-Wilcox, Inc. immediate notice of defective part or parts.
- Purchaser affords Richards-Wilcox, Inc. the opportunity to inspect defective part or parts.
- Material is still property of original owner.
- Material is still part of the original installation operating under normal usage; eight (8) hours per day and five (5) days per week constitutes normal usage.
- Material is properly maintained and lubricated.
- Mobile system is properly installed.

Richards-Wilcox, Inc. liability under this warranty shall be limited to furnishing a part or parts as necessary. Any expense relative to installation shall not be borne by Richards-Wilcox, Inc. Equipment damaged as a result of exposure too corrosive or abrasive substances shall not be replaced under this warranty.

The above warranties do not cover parts which upon inspection are determined by Richards-Wilcox, Inc. to have been subject to misuse, neglect, alterations, accident, abuse, damage by fire, flood or similar causality.

In no event shall Richards-Wilcox, Inc. be liable for indirect or consequential damages of any nature.

Service

Should the need for service arise, first contact your local Richards-Wilcox, Inc. dealer/distributors from whom this equipment was purchased? Our dealer/distributors are factory trained and are capable of responding to all sales and service inquiries. If, for some reason you are unable to get service locally, or would like to know who represents us in your area, contact our main office as shown below.

We backup our dealer/distributors with a national and worldwide service organization of experienced, factory trained field engineers. If your local representative needs help, our organization will respond promptly. Our help covers technical assistance for hardware, electronics, installation, preventative maintenance and equipment repair.

For Assistance

Richards-Wilcox, Inc.
600 South Lake Street
Aurora, Illinois 60506
Tel: 630 897-6951
Fax: 630 897 6994
Toll Free: 800 253-5668

Hazard

To alert you to possible hazards in the maintenance, servicing, and operations of this equipment, the precautions are listed in three classes of warning: Danger, Warning, or Caution. This classification follows ANSI and O.S.H.A. standards and, means the following:

- **Danger** A hazardous situation which, if not avoided, will result in death or serious injury. Although the equipment may be damaged, the main emphasis is on severe personal harm. Danger indicates the highest possible hazard level.

- **Warning** A potentially hazardous situation which, if not avoided, may result in death or serious injury and possible equipment damage.
- **Caution** A potentially hazardous situation which, if not avoided, may result in minor or moderate injury with possible equipment damage. It may also be used as an alert against unsafe practices and for equipment damage only accidents.

Precautions

The following outlines some of the more common safety hazards. Be aware that these may not be the only hazards that might arise when maintaining or servicing this equipment:

1. Before beginning a maintenance procedure, plan each step so that it can be safely carried out. Review all instructions and follow them to the extent possible.
2. Before beginning, make sure that you have all the required tools.
3. Make sure that your practices follow the recommendations given in the O.S.H.A. regulations, CFR, Title 29. Also, review the National Electrical codes and observes local codes and practices.
4. Only allow qualified electrical or mechanical maintenance personnel perform maintenance and adjustment procedures.
5. Wear appropriate safety attire including hard hat helmet and safety glasses. Gloves should be worn when handling sharp metal objects.
6. Keep hands and limbs clear off all pinch points.
7. Check immediate work area and make sure that it provides safe footing and is dry and clear of all obstructions.

8. When it is necessary to make checks with the power on, only work with one hand. Keep the other in your hip pocket to avoid the possibility of current flowing across your chest that can be damaging. Be aware that most human heartbeats will stop from as low as 10 milli-amps flowing through the heart.
9. Never leave the system unattended with input power turned on and maintenance in process. If you must leave the system, turn power off and lock out the main power disconnect.
10. When possible, always work within sight and hearing of another person.
11. Before using cleaning solvents, check its properties to determine if it's flammable or toxic. Keep all flammable solvents away from excessive heat, flames, sparks, etc. and make sure area is well ventilated. Wear safety glasses and gloves.

Power³ Controller Installation manual

This documentation is designed to assist in the installation and servicing of the Power³ control system.

The following parts list and glossary of industry standard and Power³ terminology are being provided to assist in the use of this manual.

Please note that unless otherwise stated all references to "left" or "right" are from the perspective of standing in front of the system facing the end panels.

Section 1

Glossary of Power³ Standard Terminology and Components

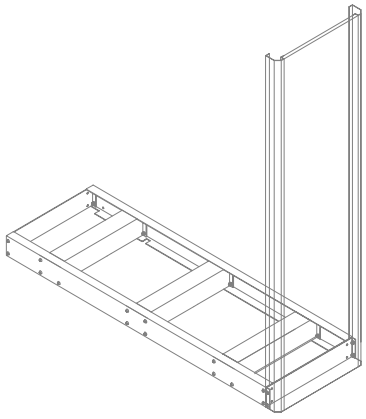
The following parts list and glossary of industry standard terminology will be provided in this section of the manual to assist you. Please note that unless otherwise stated all references to "left" or "right" is from the perspective of standing in front of the system facing the users end panels.

Carriage

A carriage is the carriage frame on which the storage units are placed. The carriage may or may not have wheels depending upon the carriage type.

Static Carriage

A carriage that has no wheels and is designed to be permanently attached to the floor.



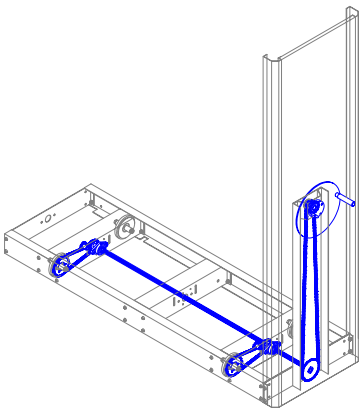
Static Carriage

Stationary Carriage

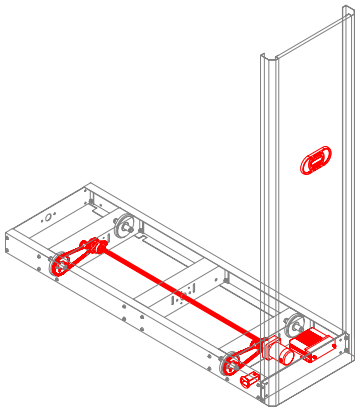
A stationary carriage is a carriage that has wheels, but has been programmed to prohibit any left or right movement.

Moveable (Mobile) Carriage

A moveable carriage is one that has wheels and can move to the left or right. A moveable (mobile) carriage may be either mechanically driven (hand cranked) also referred to as mechanical assist or electrically driven also referred to as electrical assist.



Mechanically driven



Electrically driven

Touch-pad (Keypad)

The Power³ touch-pad (keypad) is the device the user touches to make the carriages move in the proper direction to create the desired access aisle. It is located on the end panel of each carriage.

Touch-pad (Keypad)

Slave Touch-pad (Keypad)

The slave touch-pad (keypad) is used for dual access.

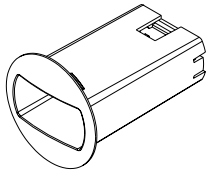
Transponder Programming Key

The handheld device used to change program settings. There are separate transponder keys for: moveable to stationary (lock); stopping distance (calibration); passive block safety system activation or deactivation (Passive Block Safety); manual override (Manual). Additional transponder keys are provided when the optional Aisle Access Security System is selected.

Transponder Programming Keys

Distance Sensor

The system component mounted in the mobile carriage used to calculate the distance to an adjacent carriage, wall or fixed object that the mobile carriage moves up to and stops adjacent to.



Distance Sensor

DC Motor and Gearbox

The motor and gearbox are connected together to electrically drive the carriages.

Motor and Gearbox

Controller

The controller is a computerized control system responsible for running the Power³ firmware. The firmware can be found on a PIC module that is located on a printed circuit board inside the controller. All operation systems are connected to and controlled by the controller and its software.

Power³ Controller

Motor Current Monitoring System (MCMS)

The MCMS is the logic within the controller to monitor any change in current that is being drawn by the motor. Detection of the change will trigger an immediate Stop command to cease carriage movement.

Aisle Access Security

The aisle access security is an aisle that has been programmed to allow access to those system users with authorized transponder keys to enter that specific aisle. The Power³ system permits multiple permission within a group of mobile carriages. Access to a secured aisle is gained through the use of a Security Transponder Key issued to the appropriate system users by the system security manager or by use of trained installation personnel.

Active Safety System

This is a safety system that requires an action by a system user for activation. Push-buttons would be examples of an active safety system. Active safety can be interfaced to the Power³ unit.

Passive Safety System

A Passive Safety System requires no specific action by the system user for activation. A passive safety system is a standard part of the Power³ unit.

Overhead Pantograph Cable Conduit

The overhead pantograph cable conduit is attached at the top of the end panel and connects carriage to carriage. The overhead pantograph cable conduit is used to house the power cables, communication cables, and any other cables that may need to be connected from carriage to carriage.

Overhead Pantograph Cable Conduit

Photo-eye safety sweep

The photo-eye safety sweep is an infra-red light beam that runs along the outside of the main beam of the carriage. When the light beam is broken the safety is activated and the moving carriage stops.

Section 2

Installation of the *Power³* Controller

The installation of the Power³ control system as a standard part of a new mobile system is an easy step by step plug and play process. The system you have received has been designed with all of the appropriate cutouts and brackets for the installation of the control system. Once you have installed the rail system, decking, floor covering, transition ramp, carriages and end panels in accordance with the installation directions you are ready to proceed with the installation of your Power³ control system. May leave end panels off.

☑ *Confirm your power supply*

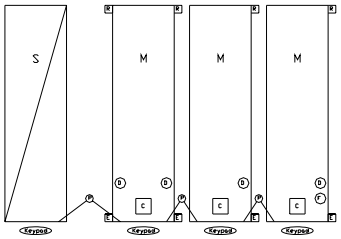
Locate and confirm the specifications of your power source for the system to be installed. The standard power configuration for operation of the control system (in the United States) is a single 120 volt 20 Amp dedicated circuit for every 15 moveable carriages. The power source should be located at a static carriage, *see figure 2-1*. If no static carriages are used, a special retractable power cord kit may be purchased.

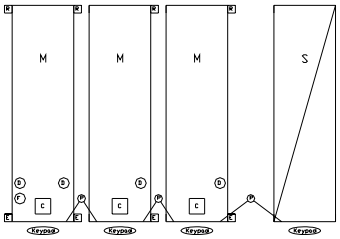
Figure 2-1

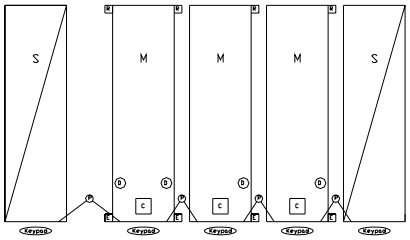
☑ *Confirm your Power³ Layout*

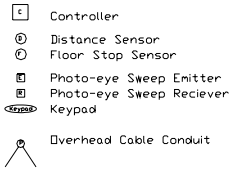
Double check the layout of the mobile carriages. Make sure that the correct special very first (left) mobile carriage has double holes on the carriage's main beam (left and right) for distance sensors left and right and photo-eye sweeps left and right. ***If the very first left mobile carriage does not have double holes, it will be necessary to re-arrange the carriages to accomplish this.*** All remaining mobile carriages will have one right distance sensor hole and a smaller set of holes for the photo-eye sweeps, *see configurations below*.

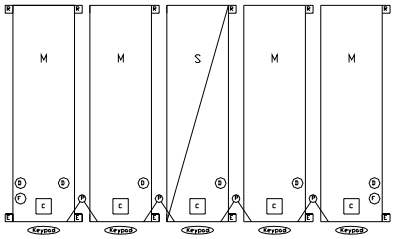
⇨ *Standard Mobile System Configurations*

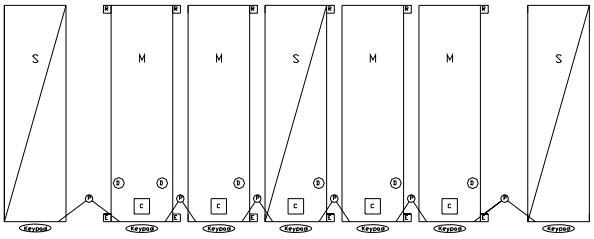




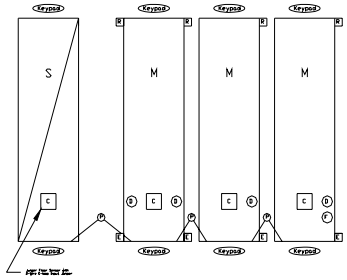


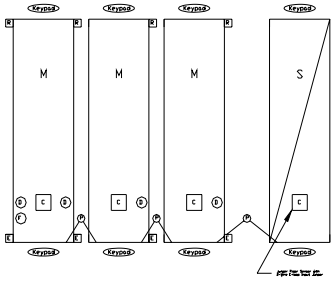


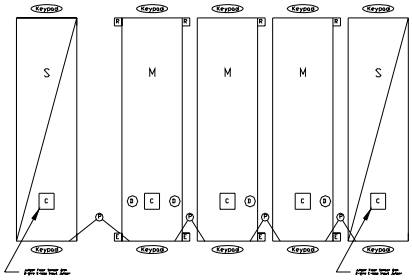


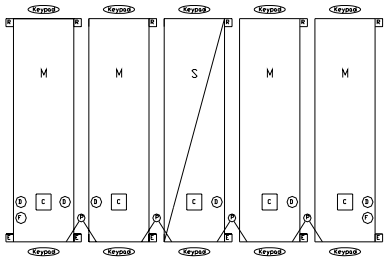


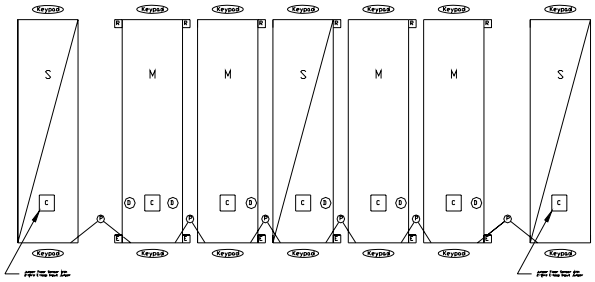
⇨ *Dual Access Mobile System Configurations*





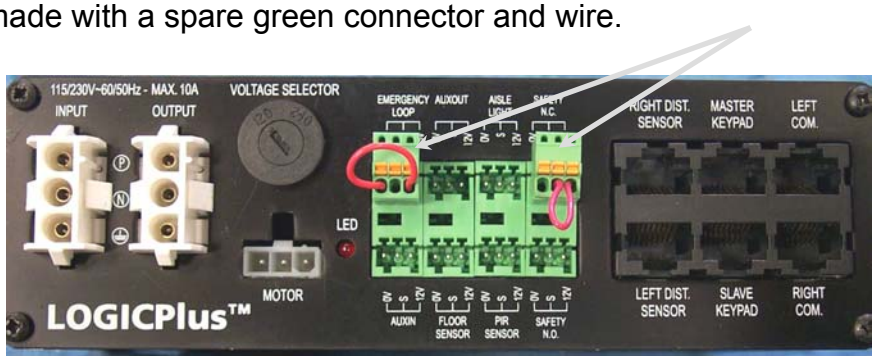






☑ *Check Power³ Factory Jumper Configurations*

Make sure that all Power³ controllers being installed have two green connector jumpers located at "EMERGENCY LOOP" and "SAFETY NC" shipped from the factory, *see image below.* The system will not work with a jumper missing in one of the controllers. If a jumper is missing call the factory for a replacement or one can be made with a spare green connector and wire.



⇨ *No Controller in Static Carriage(s)*

If there is no controller in the static carriage(s) just a touch-pad the install will require a Power Cord Assembly (3133.00001) and a Power Cable Adapter (3133.00042), *see figure 2-2*. One end of the power cable adapter plugs directly into the power cable that is in the pantograph overhead cable conduit and the other plugs into the power cord assembly.

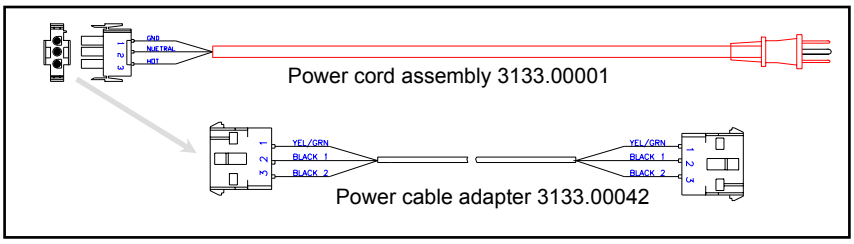


Figure 2-2

⇨ *Controller in Static Carriage*

If there is a controller in the static carriage (dual access, additional safety requirements, and/or static carriage is located in the middle of the system) the Power Cord Assembly (3133.00001) directly plugs into the controller, *see figure 2-3*.

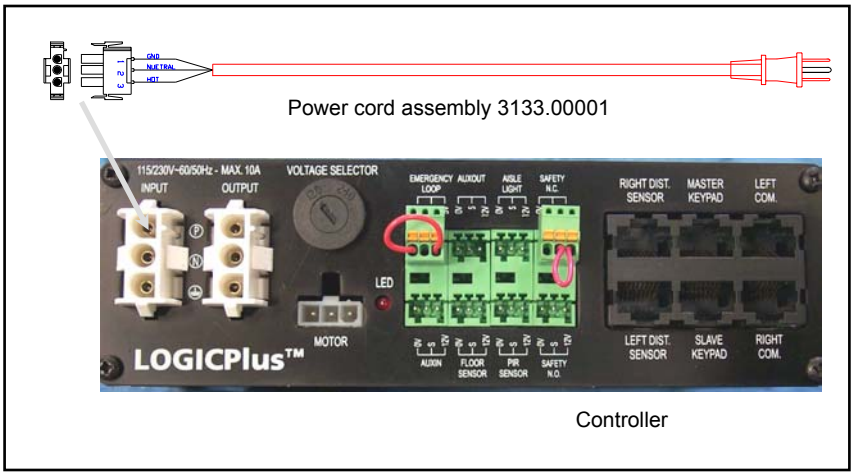
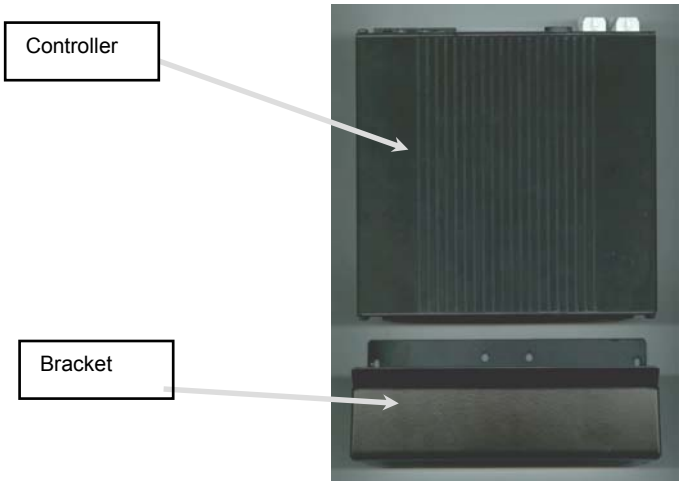


Figure 2-3

☑ *Installing the Power³ controller and bracket*

Position the controller's mounting bracket anywhere within the first weld section, inside the mobile carriage's front crossbeam. If the system requires a controller in the static carriage follow the same procedure. Rest the bracket along the carriage's bottom return leg. Using (2) self drilling screws that are supplied secure the bracket to the carriage. Place the controller in the bracket making sure that the controller connectors are facing out, *see figure 2-4*.

Figure 2-4



☑ *L-Bracket and Pantograph Overhead Cable Conduit Installation on R-W Shelving*

The Pantograph overhead cable conduit will house the cables for communications and power from carriage to carriage. There should be one communication cable and one power cable running inside. The Pantograph is usually attached at the top of the shelving's upright and goes from upright to upright. The Pantograph overhead cable conduit is secured to the shelving uprights by a special L-Bracket that has to be installed, *see figure 2-5 for installation drawing:*

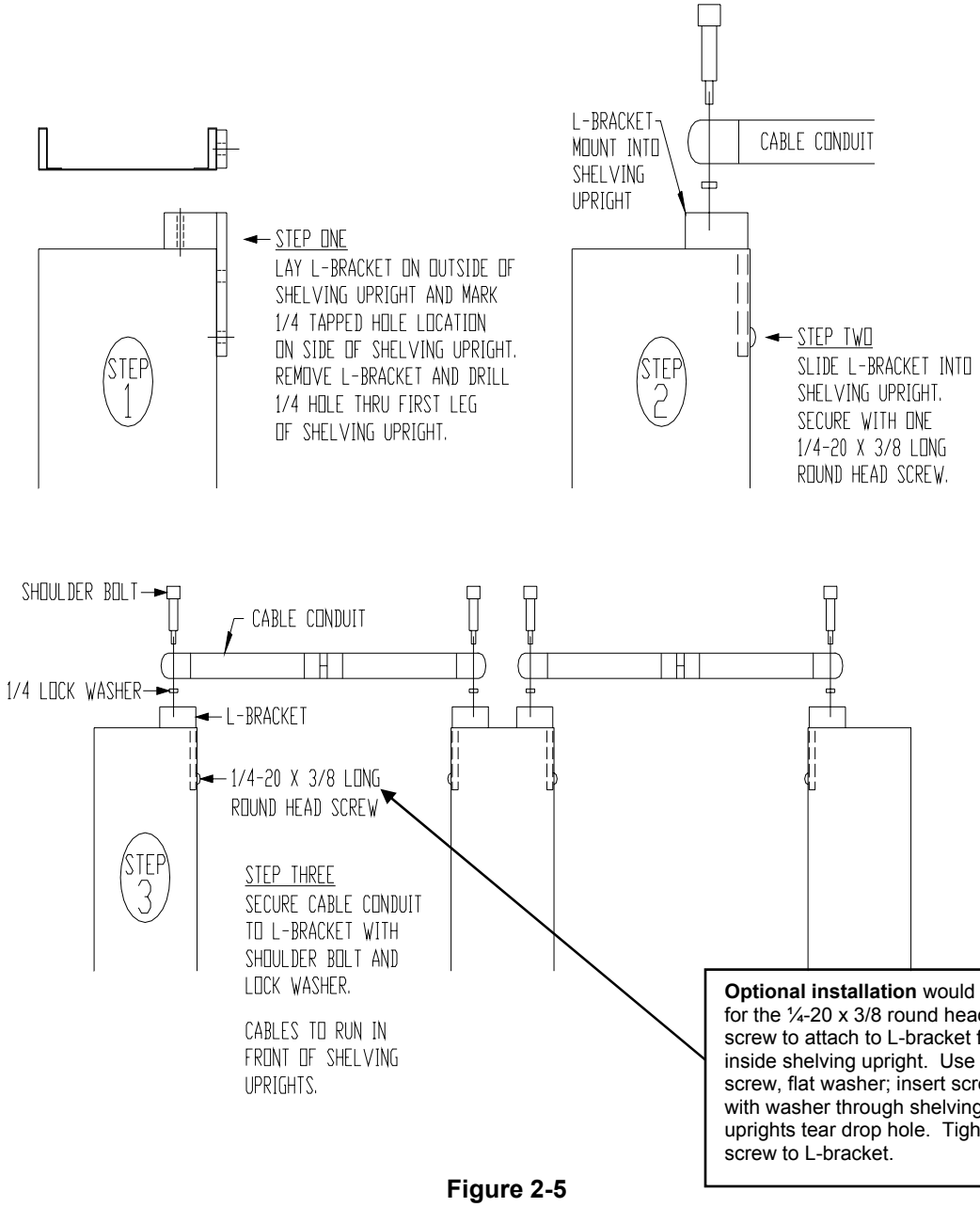


Figure 2-5

☑ *Connecting the communications cables*

You may now Plug the communication cables into the Power³ controller, *see figure 2-6.*

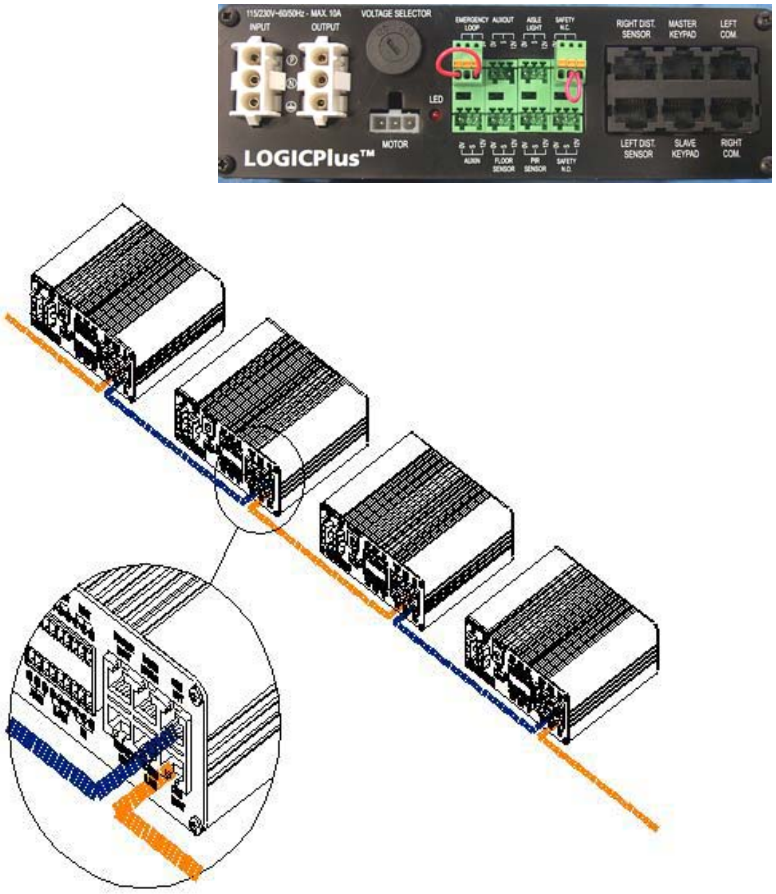


Figure 2-6

DO NOT plug in the power cable until instructed. Please note (as depicted in *figure 2-6*) that when plugging the communications cable into the connector designated as "LEFT COM." the cable will then go to the carriage that is on the left and be plugged into the "RIGHT COM." connector.

When plugging the communications cable into the connector designated as "RIGHT COM." the cable will then go to the carriage that is on the right, and be plugged into the "LEFT COM." connector.

Once again please note that all references to "left" or "right" are from the perspective of standing in front of the system facing the end panels (unless otherwise stated).

☑ *Attaching the touch-pads (keypads)*

Attach the touch-pads to the end-panels using the two screws supplied. Each touch-pad should be located on the end-panels. Place the touch-pad against the end-panel; fit the touch-pad so the touch-pad's rear connector fits through the large hole on the end-panel that has been predrilled from the factory. Place a small torpedo level on the top of the touch-pad, make sure touch-pad is level and drill small pilot hole through the end panel, attach screws through touch-pad and end panels, *see figure 2-7.*

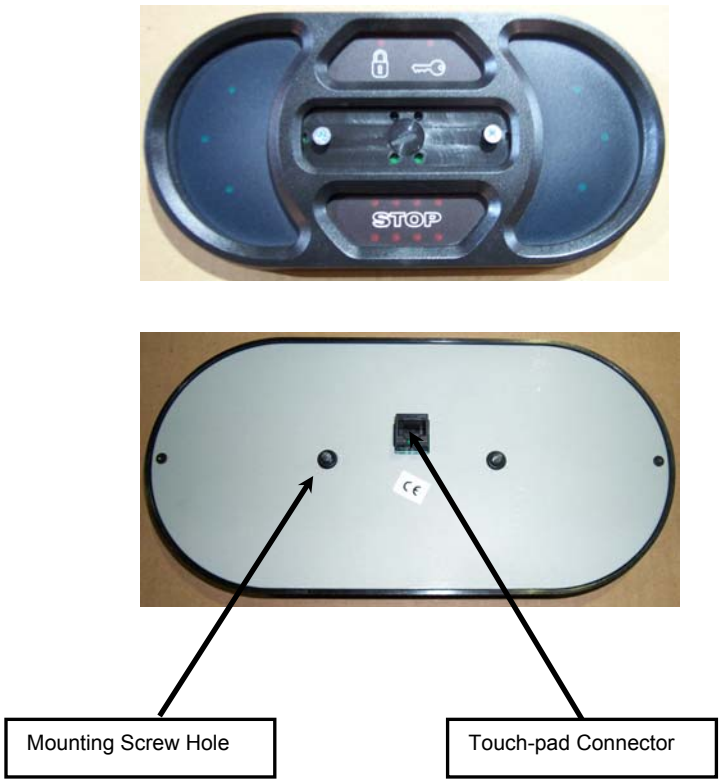


Figure 2-7

☑ *Standard single entry moveable carriages*

Plug the red cable into the touch-pad plug connector. Run the red cable inside of the end panel towards the controller. Plug the red cable into the controller plug connector designated as "MASTER KEYPAD," *see figure 2-8.*

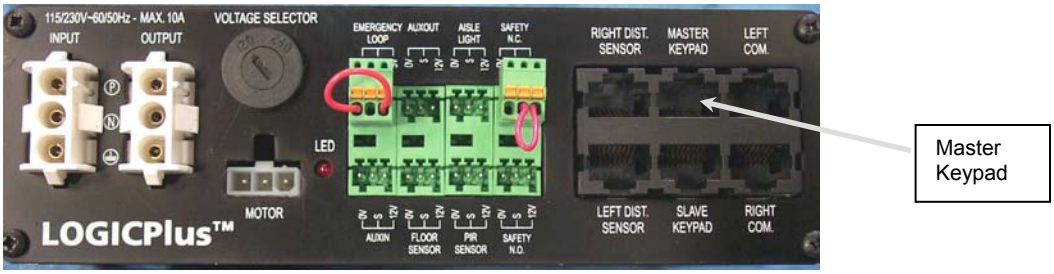


Figure 2-8

☑ *Dual entry moveable carriages*

If the system is dual entry, a touch-pad will need to be installed on the end panel that is at the other side of the carriage. Starting with the touch-pad located on the front of the carriage (referred to as the "master touch-pad"), plug the red cable into the touch-pad female connector. Run the red cable inside of the end panel towards the controller. Plug the red cable into the controller designated as "MASTER KEYPAD", *see figure 2-8*.

The touch-pad on the backside of the carriage (referred to as the "slave touch-pad") will have a much longer cable, plug this cable into the female connector of the slave touch-pad and run this cable through the carriage towards the controller. Plug the cable from the slave touch-pad into the controller designated as "SLAVE KEYPAD", *see figure 2-9*.

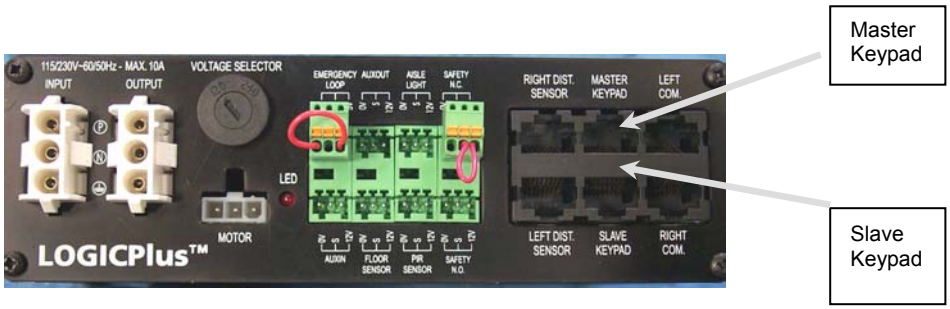


Figure 2-9

☑ *Standard single entry static carriages*

If the system you are installing has a static carriage at one or both ends of the system, depending on your particular layout, ***you might need to install a touch-pad on the end panels of the static carriage(s).*** The touch-pad for the static carriage will use the data cable that is in the pantograph overhead cable conduit. Plug the data cable into the touch-pad located on the static carriage's end panel. Plug the other end into the connector on the controller designated as "SLAVE KEYPAD" on the controller, *see figure 2-9*.

☑ *For standard dual entry static carriages*

If the system you are installing has a static carriage at one or both ends of the system and is a dual access system then ***you will need to install a controller in the fixed carriages*** and touch-pads on the end panels on both ends of the carriage.

Plug the red cable into the touch-pad plug connector of the touch-pad located on the front side of the static carriage. Run the red cable inside of the end panel towards the controller. Plug the other end of the cable into the connector on the controller designated as "MASTER KEYPAD", *see figure 2-9.*

The touch-pad on the back side of the static carriage referred to as the "slave touch-pad" will have a much longer cable, run this cable through the carriage towards the controller. Plug the cable from the slave touch-pad into the connector on the controller designated as "SLAVE KEYPAD", *see figure 2-9.*

☑ *Installing the distance sensors*

Each moveable carriage will have one distance sensor installed on the right side. ***The most left moveable carriage in a system will have a distance sensor installed on both the right and the left sides.*** In all cases, the moveable mobile carriage with two distance sensors holes will be located at the first left moveable mobile carriage in the system layout. Insert the distance sensor into the 53 mm round hole in the carriage, slide the sensor in until the sensor clicks into place, *see figure 2-10*.

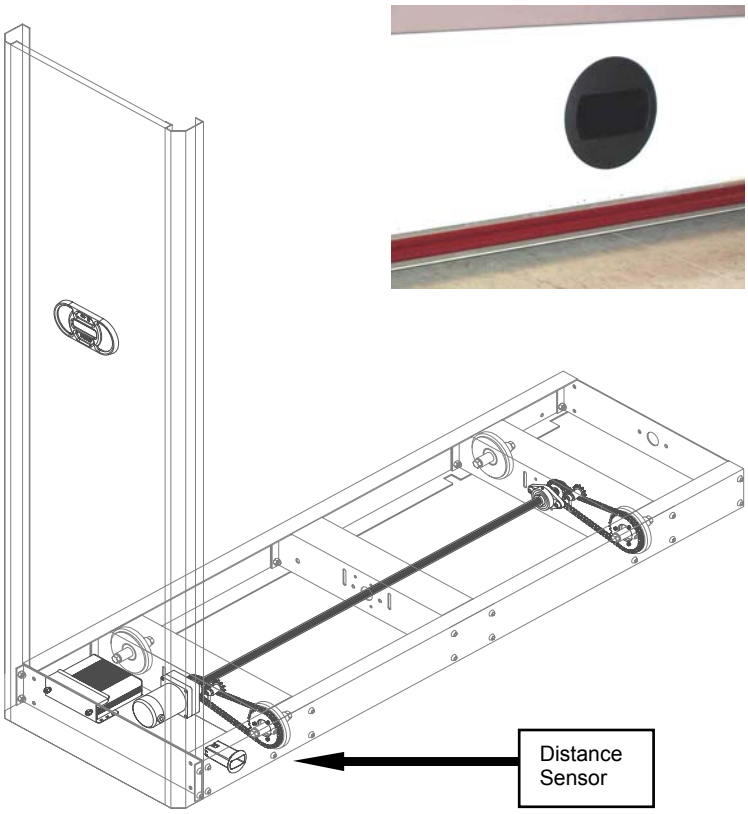


Figure 2-10

NOTE

Note: If the first or last moveable carriage is to stop in an open space (no wall or stationary carriage to run up to), a floor stop package 3133.00048 is needed. The floor stop package will be covered later on in this manual

☑ *Connecting the distance sensors*

Run the cable that is attached to the distance sensor towards the controller and plug the cable into the connector in the controller designated for the “RIGHT DIST. SENSOR”. For the first left most moveable mobile carriage in the system you will have both a left and right distance sensor unless the system requires a floor stop. Plug the distance sensor located on the left side of the carriage into the connector in the controller designated for the “LEFT DIST SENSOR”, *see figure 2-11*.

Figure 2-11

☑ *Installing a floor stop sensor*

If the system requires the last moveable carriage to stop towards an open space (no wall or stationary carriage to run up to) you will need to install a Floor Stop Sensor Package (3133.00048). Depending on the size of the carriage, the floor sensor is located along the carriages main-beam bottom return leg. The sensing head faces toward the floor so that it can detect the metal target that will be fastened on the floor. This metal target is what indicates the stopping location, *see figure 2-12*. Secure metal target to floor.

The floor sensor requires two jam nuts to hold it into position. The sensor has a range from 0 to ⅜ to the target. Once in position, take the cable that is attached to the floor sensor and run the cable towards the controller.

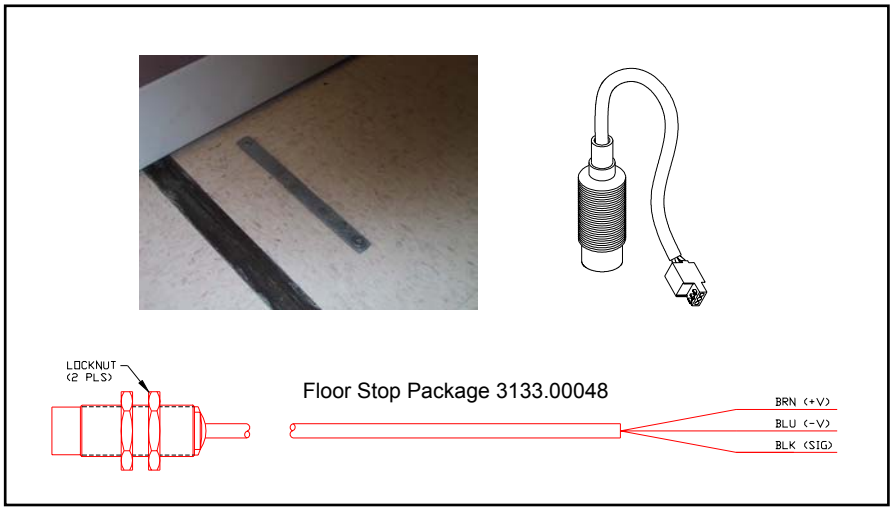


Figure 2-12

⇨ *Connecting the green plug to the floor sensor cable*

To connect the cable from the floor sensor to the green plug you will first need to look at the floor sensor circuit diagram, *see figure 2-13 to determine the proper wire connections.*

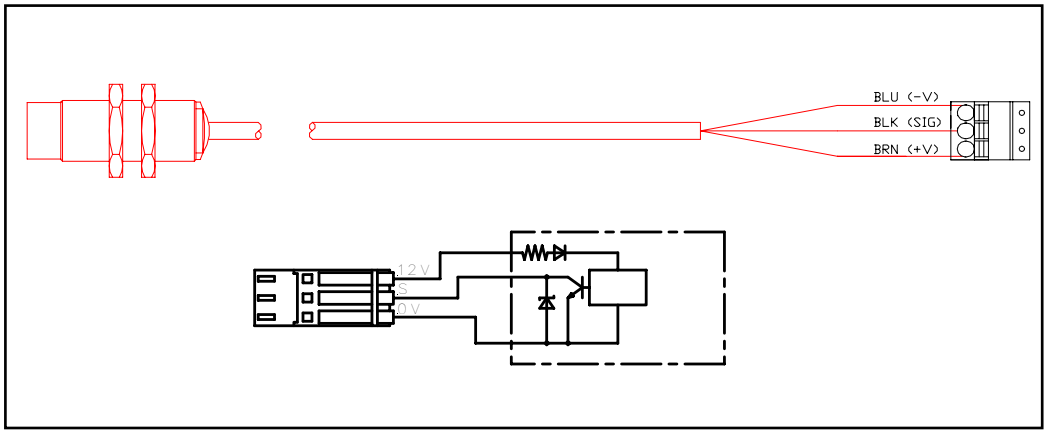


Figure 2-13

Strip the wire insulation ¼. While holding one of the wires to be connected to the plug press and hold down the orange pressure release button (on the plug) that corresponds with the wire connector opening for the wire that you are connecting, *see figure 2-14*. While holding down the pressure release button insert the wire into the wire connector opening and then release the pressure release button. The wire should now be held tight inside the connector opening, repeat this procedure with the other two wires.

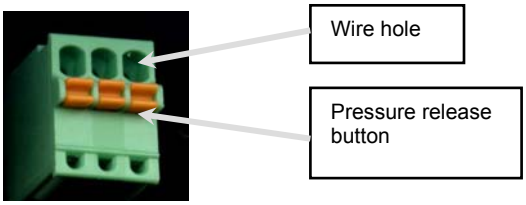


Figure 2-14

⇨ *Plugging a floor sensor into the controller*

Take the green plug and plug it into the controller plug connector labeled FLOOR SENSOR, *see figure 2-15.* The plug will only fit one way so do not force it.

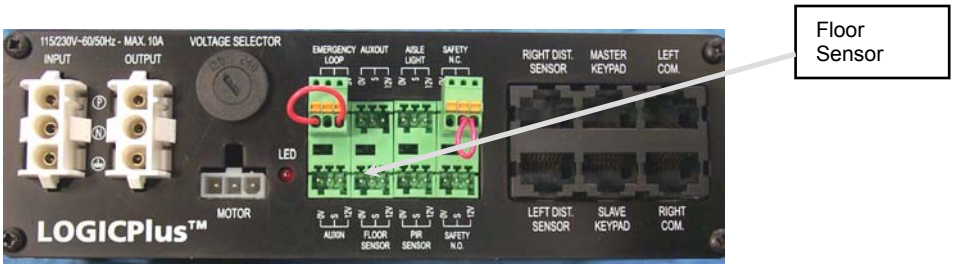


Figure 2-15

To activate the floor sensor a computer with Power³ set-up software and communication hardware is required. This subject will be covered later in this manual.

☑ *Connecting the motor cable*

Extending out of the motor you will see two wires with quick connect terminals on them, and a green ground wire attached to the frame with the same connector. These wires connect to a motor cable assembly (3133.00006). Simply match up wire colors and insert the connectors together, *see figure 2-16*.

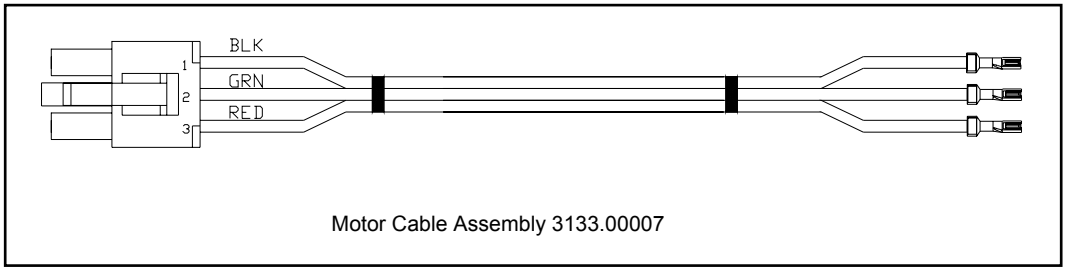


Figure 2-16

Once you have connected the motor cable to the motor, route the cable assembly towards the controller. Plug it into the controller connector labeled “MOTOR”, *see figure 2-17*.

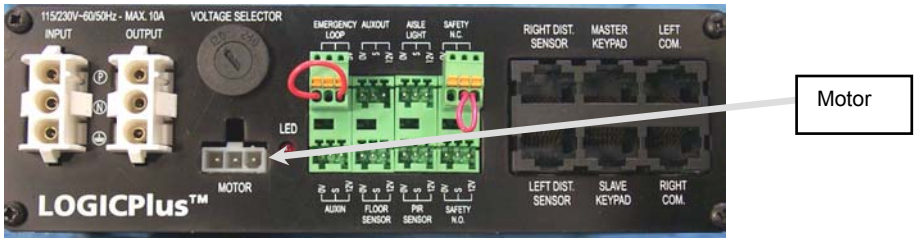


Figure 2-17

Connecting external safety devices

The Power³ controller has the capability of using one or more external safety devices. They are as follows:

- Photo-eye Sweeps (SAFETY NC)
- Auxiliary Input (AUXIN)
- Auxiliary Output (AUXOUT)
- Aisle Lighting (AISLE LIGHT)
- Emergency Stop (EMERGENCY LOOP)
- Safety Input (SAFETY NO)
- Floor Stop Sensor (FLOOR SENSOR)

.

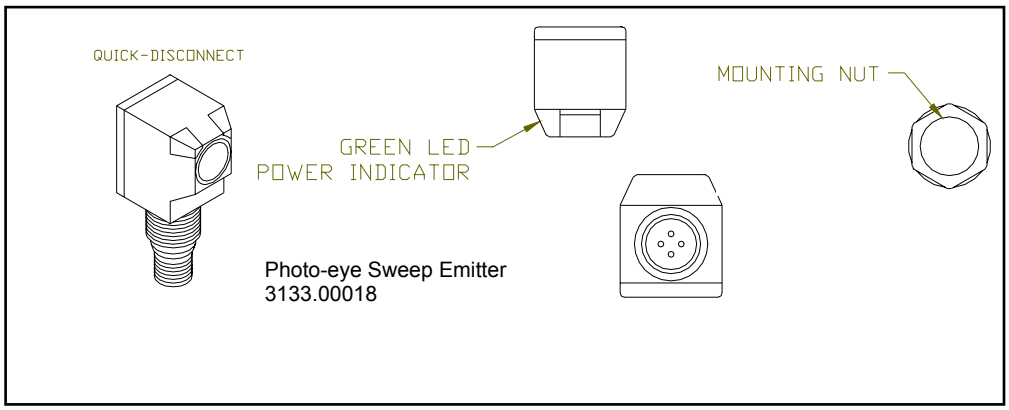
Photo-eye Sweep (Emitter & Receiver)

The Photo-eye Sweep consists of an emitter and receiver photo-eyes that are mounted on either the left/right/both sides of the main beam on a carriage. The photo-eyes produce an infrared beam that shoots from front to back of a carriage to monitor for product that might have fallen in an aisle. If the infrared beam is broken while the carriage is moving the carriage will come to an immediate stop, thus indicating a flashing "STOP" field on the touch-pads of the faulted aisle.

☑ *Installing the Emitter Photo-eye Sweep*

The emitter photo-eye is easily identified by having only one green (power) LED on it. The photo-eye comes with a quick connect connector that a cable is connected too. The emitter is to be mounted in the **front** mounting hole on the main beam. Insert thread of photo-eye through hole and secure with jam nut. The front of a carriage is typically where the motor and distance sensors are located, *see figure 2-21.*

Figure 2-21



☑ *Installing the Receiver Photo-eye Sweep*

The receiver photo-eye is easily identified by having two LED's; green (power) and yellow (output) on it. The photo-eye comes with a quick connect connector that a cable is connected too. The receiver is to be mounted in the back mounting hole on the main beam. Insert thread of photo-eye through hole and secure with jam nut. The back of a carriage is typically the opposite end of where the motor and distance sensors are located, *see figure 2-22*.

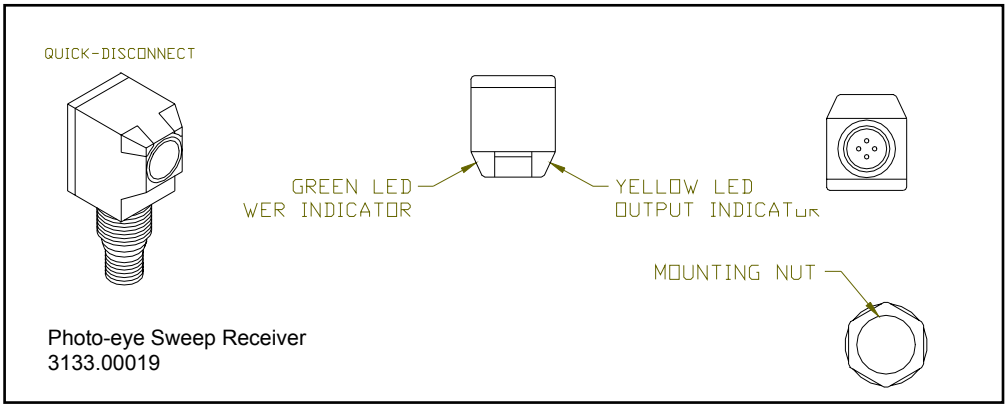


Figure 2-22

☑ *Connecting Photo-eye Sweep Sensors to the P3 Dual P.E. (N.C.) Harness*

The dual photo-eye harness is required for the first left moveable carriage or dual photo-eye applications. In every Power³ system layout, the very left (first) moveable mobile will have two sets of photo-eyes or if the system when purchased required dual photo-eyes. The harness can resemble an octopus with being described as having a yellow center plastic block with 2 short cables, 2 very long cables, and a very short cable with green connector at the end. Take the two short cables (4 ft.) with barrel type connector, plug the barrel end into the emitter photo-eyes and screw the connector onto the sensor. Take the two long cables with barrel type connector, plug the barrel end into the receiver photo-eyes and screw onto the sensor. It only matters that one of the short cables goes to either emitter photo-eye and that one of the long cables goes to either receiver photo-eyes, *see figure 2-23*.

☑ *P3 Dual P.E. (N.C.) Harness*

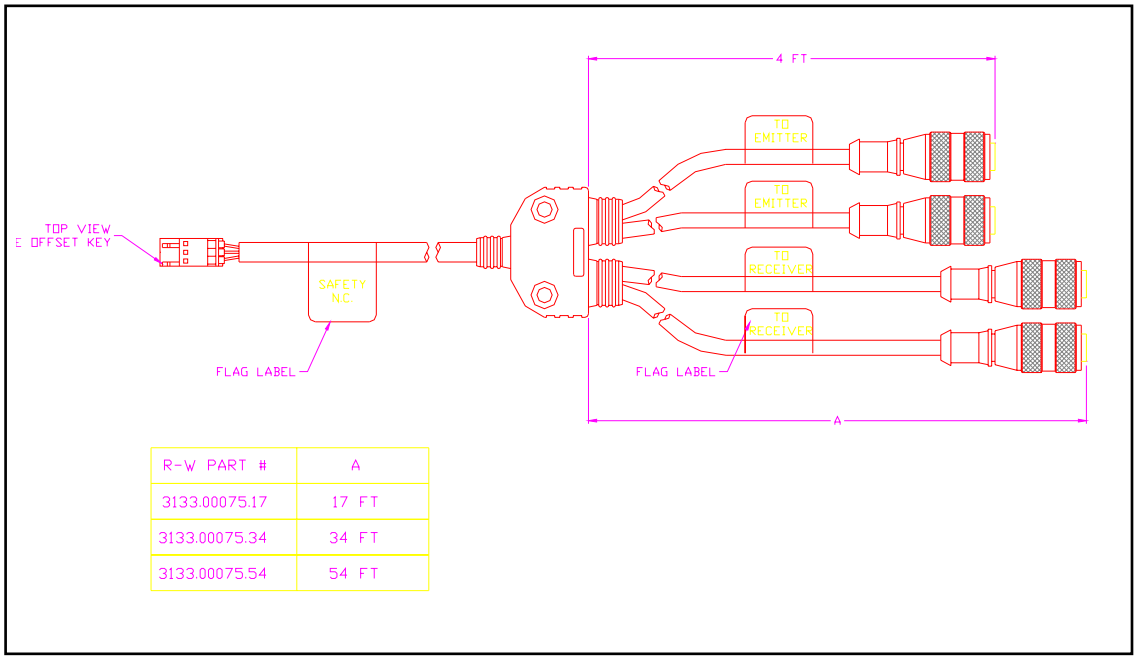
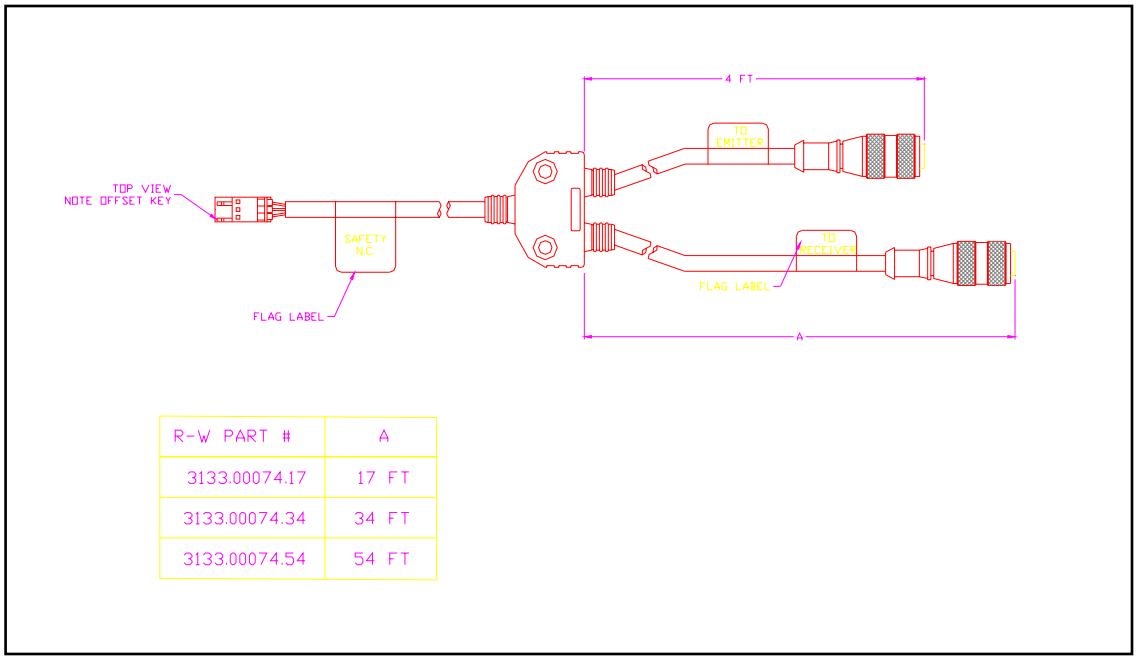


Figure 2-23

☑ *Connecting Photo-eye Sweep Sensors to the Single P.E. (N.C) Harness*

The single photo-eye harness is required for all moveable carriages to the right of the special most left (first) mobile carriage. In every Power³ system layout the very left (first) moveable mobile will have two sets of photo-eyes all carriage after that require a single photo-eye harness. The harness can be described as having a yellow center plastic block with 1 short cable, 1 very long cable, and a very short cable with green connector at the end. Take the short cable (4 ft.) with barrel type connector, plug the barrel end into the emitter photo-eye and screw the connector onto the sensor. Take the long cable with barrel type connector, plug the barrel end into the receiver photo-eye and screw onto the sensor. It only matters that the short cable goes to the emitter photo-eye and the long cable goes to the receiver photo-eye, *see figure 2-24*.

☑ *P3 Single P.E. (N.C.) Harness*



R-W PART #	A
3133.00074.17	17 FT
3133.00074.34	34 FT
3133.00074.54	54 FT

Figure 2-24

⇨ *Plugging Photo-eye Sweeps into the controller*

Remove green jumper connector located in “Safety N.C.”, plug the green connector from the harness into the controller labeled “SAFETY N.C.”, *see figure 2-25*. The plug will only fit one way so do not force it.

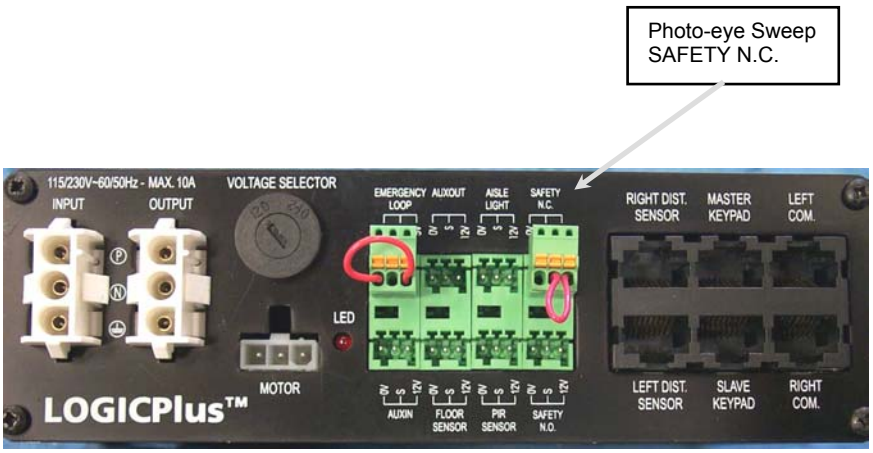


Figure 2-25

In most cases, the very first moveable carriage will always have a left and right photo-eye safety sweep

Auxiliary Input (N.O. contact)

The Power³ controller comes equipped with an auxiliary input that is reserved for the Fire/Night Park function. This function needs the Power³ Set-up software. The carriages are manually moved to the desired fire/night park position. With a click of the mouse the software learns the carriages position. If this auxiliary input is shorted the carriages will automatically move to that learned position. The controllers signal voltage needs to go through external normally open contact. This contact will be supplied from elsewhere (fire alarm system), s*ee figure 2-26 for Auxiliary Input circuit diagram.*

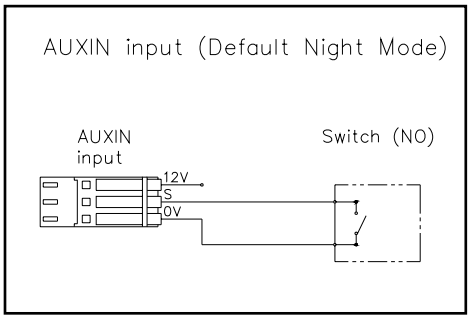


Figure 2-26

Auxiliary Output (+12 v signal)

The Power³ controller comes designed with an auxiliary output that is reserved for a future function. This function will need the Power³ controller Set-up Software for set-up. The controller has the capability of supplying a +12 volt signal to an external relay coil. This relay coil will be supplied from elsewhere, *see figure 2-27 for Auxiliary Output circuit diagram.*

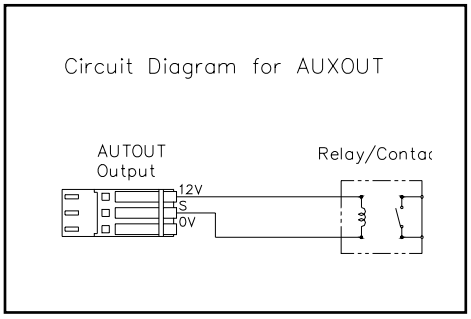


Figure 2-27

Emergency Loop (N.C contact)

The Power³ controller comes equipped with an emergency loop jumper that is a normally closed input that is reserved for the e-loop function. If the customer requires an interface to an external emergency stop circuit the wire jumper at Emergency Loop will have to be broken and the external device wired instead, *see figure 2-28 for jumper location.*

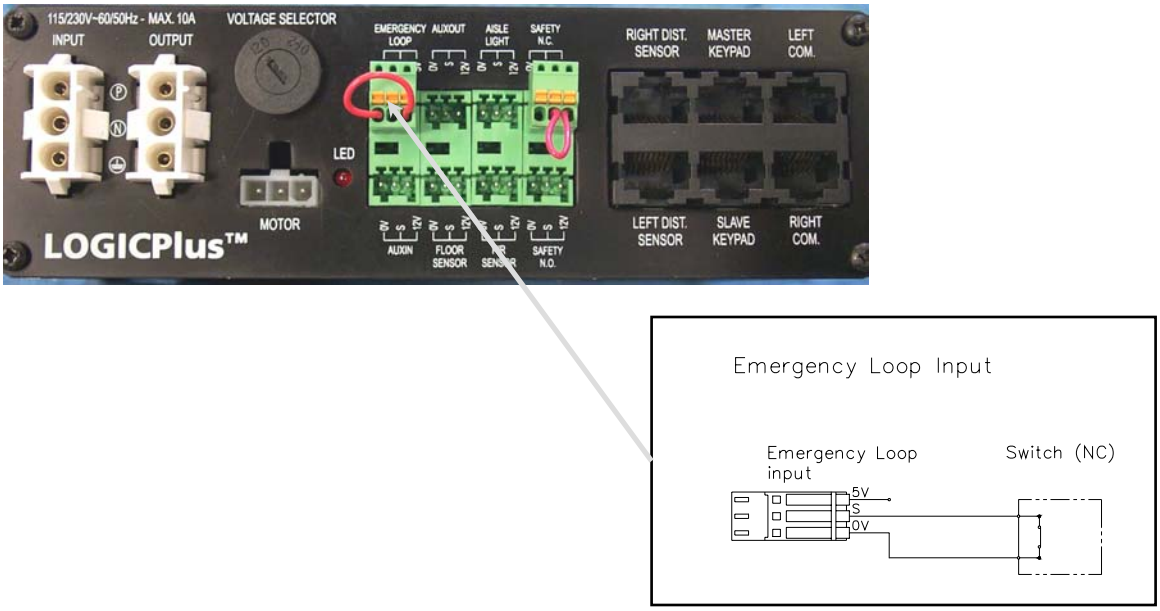


Figure 2-28

Aisle Lighting (+12 v signal)

The Power³ controller comes equipped with an aisle lighting circuit. When an aisle(s) is opened, an output signal will energize an external relay coil that turns the aisle lighting on and off. Many parts are required for aisle lighting:

Aisle Lighting Power Relay	(3133.00011)
Aisle Lighting Signal Cable	(3133.00012)
Aisle Lighting Power Cable	(3133.00013)
Aisle Lighting Fixture Cable, 13FT	(3133.00023.13)
Aisle Lighting Fixture Cable, 25FT	(3133.00023.25)
Aisle Lighting Fixture Cable, 35FT	(3133.00023.35)
Aisle Lighting Install Drawing	(3133.00015)

Richards-Wilcox, Inc. does not have at this time a light fixture or light fixture hardware, *see figure 2-29 for details*.

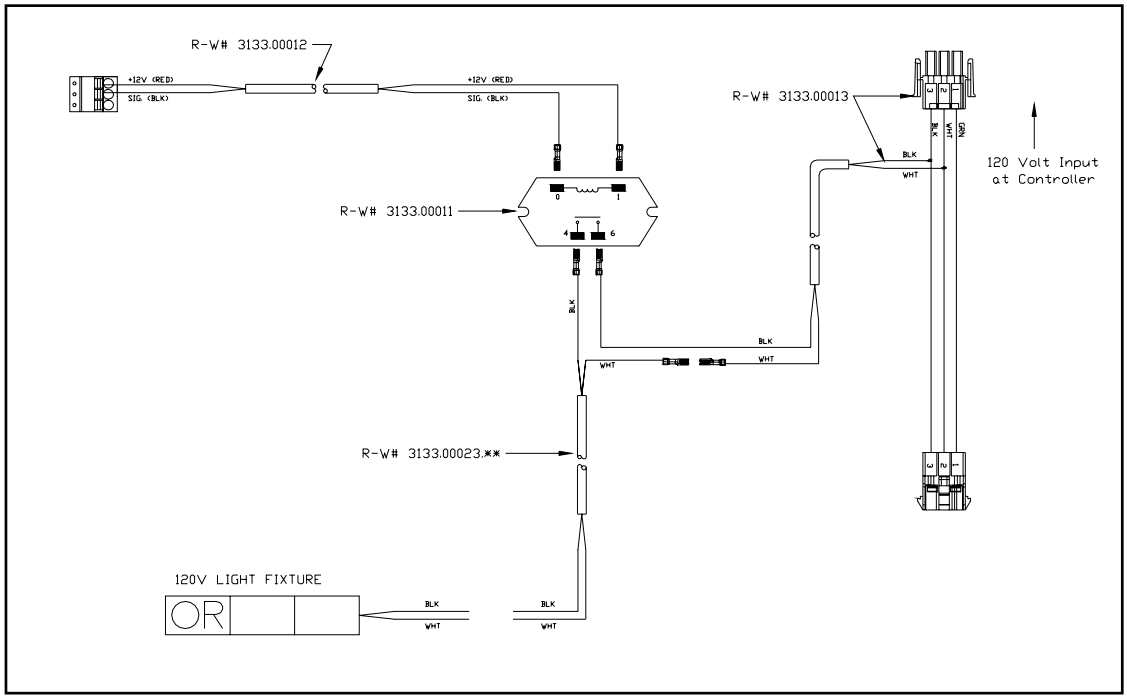


Figure 2-29

Connecting Power In and Power Out Cables

Before you plug the power cable into the controller look at the “voltage selector” and make sure that it is set appropriately. If the mobile system is to be run using USA standard 120 voltage the selector should be set with the pointer at 120, *see figure 2-30*.

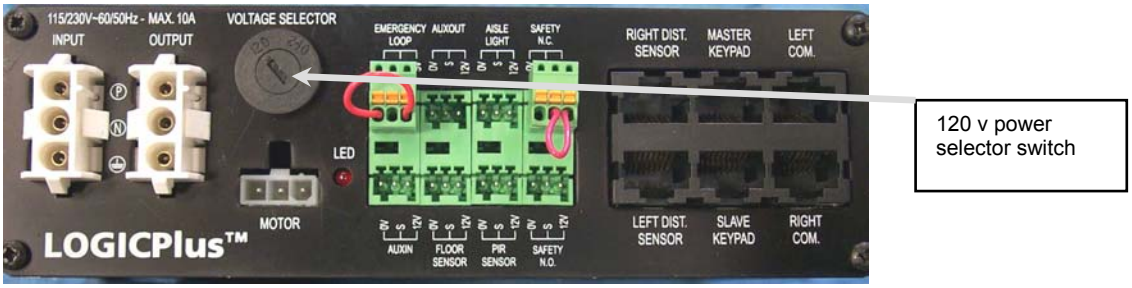


Figure 2-30

Once you have confirmed that the voltage indicator is set properly you may plug the power cable into the controller. Starting from the end of the system where the power is introduced, plug the incoming (hot) power cable into the receptacle marked “INPUT”, *see figure 2-31*. Then take the power plug that is hanging down from the overhead pantograph cable conduit and insert it into the connector labeled “OUTPUT”, *see figure 2-31.*

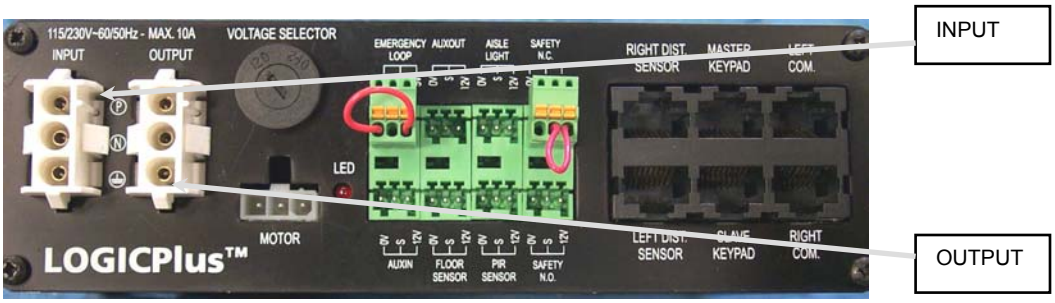


Figure 2-31

From the plug that was just inserted into the “OUTPUT” connector trace the attached cable up and through the overhead pantograph cable conduit down into the adjacent carriage till you reach the connector located on the opposite end of the cable. Take the connector and insert it into the controller labeled “INPUT”, *see figure 2-32*. Do these procedures until you reach the last carriage.

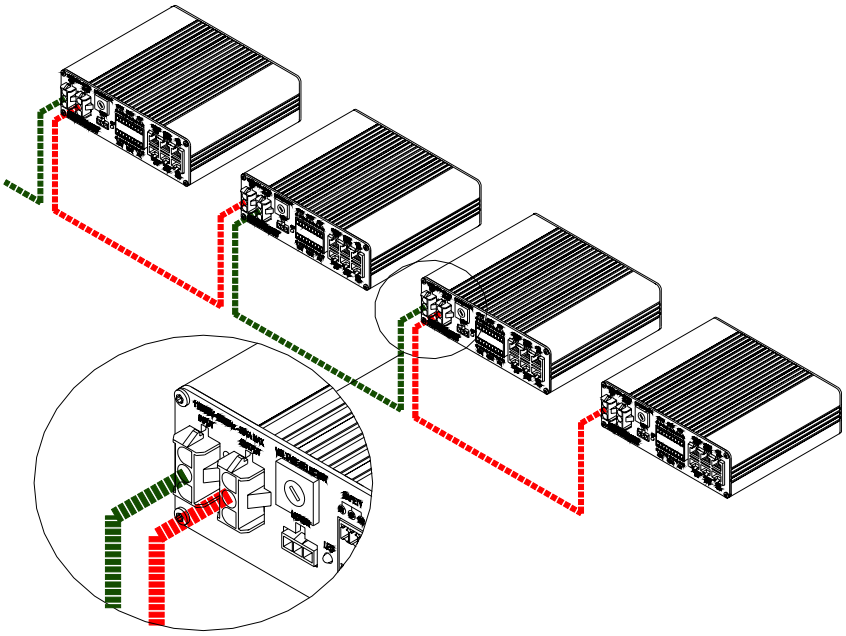


Figure 2-32

End Plug

Every Power³ system needs an End Plug that is to be connected in the "RIGHT COM" connector on the most right last carriage in the system. The End Plug is a CAT 5 connector with a wire jumper. This End Plug most be installed for the system to work, *see figure 2-33*.

Figure 2-33

Plastic Tie Wrap Sticky Back Pad

All wiring harnesses/cables come in generic lengths so the excess wiring length has to be secured down to the upper main beam. To secure the wire harnesses down a white plastic sticky back pad and tie wraps were supplied. Use tie wrap to secure all wiring down.

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Section 3

Start-up of the Power³ Controller

Once the Aurora Mobile Power³ system has been completely installed mechanically, manually move all units to a closed block system. Plug the power cord into the power source outlet (120 volt). All touch-pads will go through a brief self test procedure. Once the self test is complete all touch-pads will be off except for an open aisle condition. If there is an open aisle the correlating touch-pads to that aisle will have a green arrow pointing to that open aisle. It is possible that an error is detected during the self test and that would be represented by a single red LED in the STOP field of the touch-pad, *see section 7 regarding system troubleshooting*.

☑ *Verify Correct Operation*

Go to the desired location to open a new aisle and touch the arrow section of the touch-pad that is pointing to the desired aisle. The mobile system will automatically open that aisle chosen. Try this procedure a few times to verify proper operations.

☑ *Verify that Photo-Eye Sweep Sensors are Working*

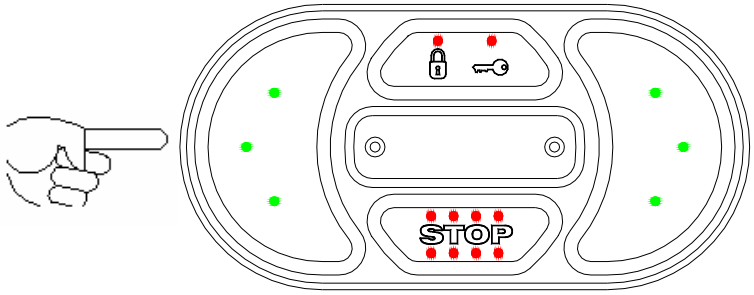
Simply check the following:

Step 1	Check for green power on LED on emitter photo-eye.
Step 2	Check for green power on and yellow status LEDs on receiver photo-eye.
Step 3	If the yellow status LED is out, turn the position (up and down) of the sensor body until the LED comes on.
Step 4	Verify that the photo-eye pairs are working by blocking the infrared beam and watching that the yellow LED indicator goes off.

Section 4

System Operation

The Aurora Mobile Power³ system offers users both simplicity and convenience. The “no guessing” design of the touch-pads provide oversized touch areas (no push-buttons). This touch-pad makes activating the system easy, even with hands full.

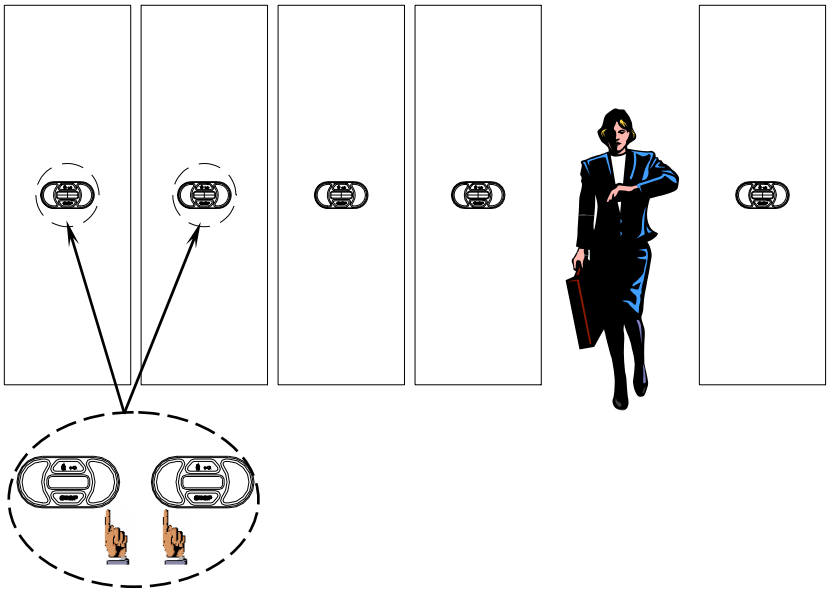


Creating an open aisle in the desired location is as simple as touching the touch-pad section that is pointing to the desired aisle.

The system has two standard features, Passive Safety Aisle disabled (default) or enabled. The Passive Safety aisle requires the end user to clear the STOP fields on the touch-pads of the open aisle. *Enabling the Passive Safety Aisle feature will be covered later in section 5.*

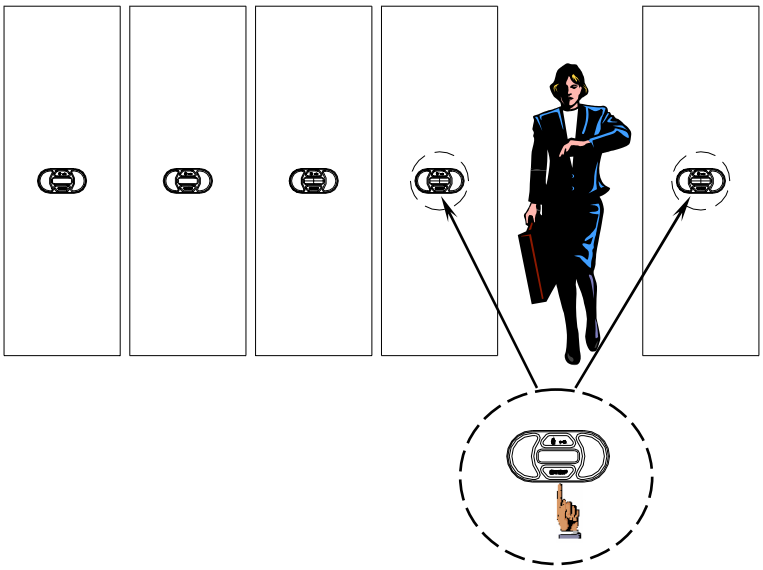
☑ *Passive Safety Aisle Disabled (Default)*

Simply go to the desired location where you wish to open a new aisle and touch the arrow section of the touch-pad that is pointing to the desired aisle location. You may touch the touch-pad on either side of the desired aisle location.

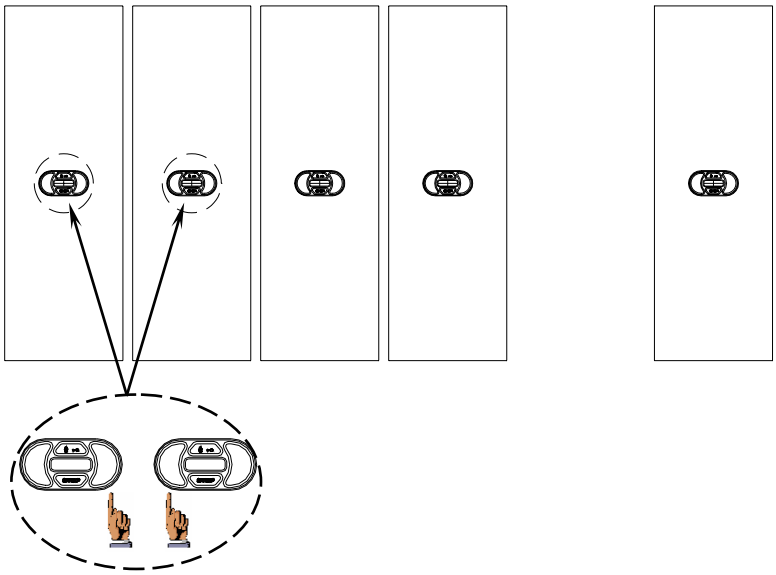


☑ *Passive Safety Aisle Enabled*

Go to the current open aisle and touch the lighted STOP panel on each side of the open aisle. This action will turn off the red LEDs that are illuminating the STOP touch-pad. The user has 3 seconds to touch both touch-pads. If time expires the touch-pad reset to the original condition.



Next, go to the desired location where you wish to open a new aisle and touch the arrow section of the touch-pad that is pointing to the desired aisle location. You may touch the touch-pad on either side of the desired aisle location.

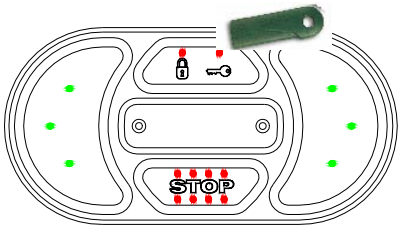


If a system user attempts to create a new aisle before touching the STOP field of the touch-pad on either side of the opened aisle, the STOP field's red LEDs will flash five times. This is a reminder that the STOP fields of the touch-pads must be touched first.

☑ *Aisle Access Security Enabled*

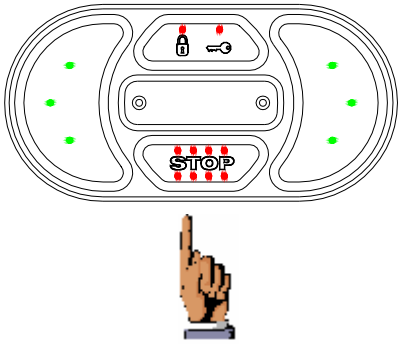
To enable this feature a PC, PC communication hardware, Aisle Access colored transponder keys, and Power³ Controller Set-up Software is needed. This topic will be covered later on in this manual. The Aisle Access Keys are available in ten different colors.

Let's assume that aisle access had been already enabled. The aisle access security feature limits specific aisles to only authorized users. A specially assigned colored transponder key is required to open that secured aisle. The authorized user would follow the same steps as previously stated in Passive Safety Aisle Disabled/Enabled except for when the user touches the touch-pad to create a new aisle a red indicating LED will light up under the key symbol on the touch-pad. The authorized user then passes a specifically assigned colored transponder key in front of the key symbol. The red LED indicator will go off and the system will open the aisle requested.



☑ *Clearing an emergency stop condition*

If a photo-eye sweep, PIR sensor, MCMS, or emergency stop, initiate an unexpected emergency stop condition the red LEDs in the STOP field will continuously blink. To clear this condition, simply touches the STOP field on the touch-pad that is blinking. The system will automatically reset.



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Section 5

Changing System Setting Using Transponder Keys

The Power³ System uses transponder key technology for changing system operational settings and is used for access control security. Utilizing the same technology that was designed and developed for the luxury automobile industry, the end user can change system settings with one touch of the transponder. There is no need for complicated calibrating equipment that would be used by specially trained individuals.

Transponder Keys

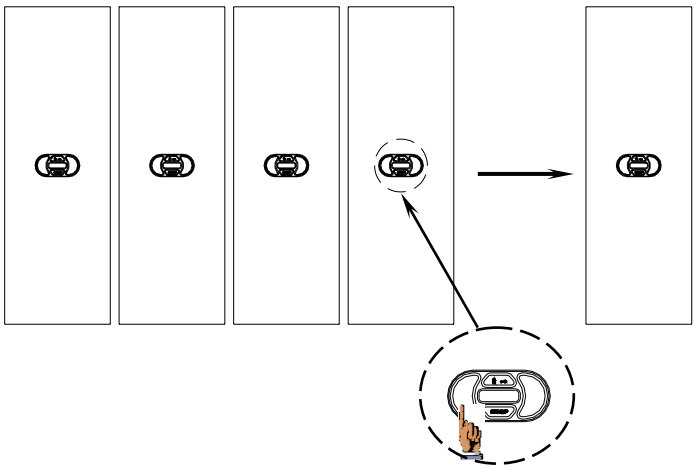
Power³ Calibration Transponder Key (Blue/Gray)

The calibration transponder key gives the end user the flexibility of adjusting the stopping distances between carriages on an individual carriage basis. This feature is well suited for systems that house letter and legal folders or oversized items.

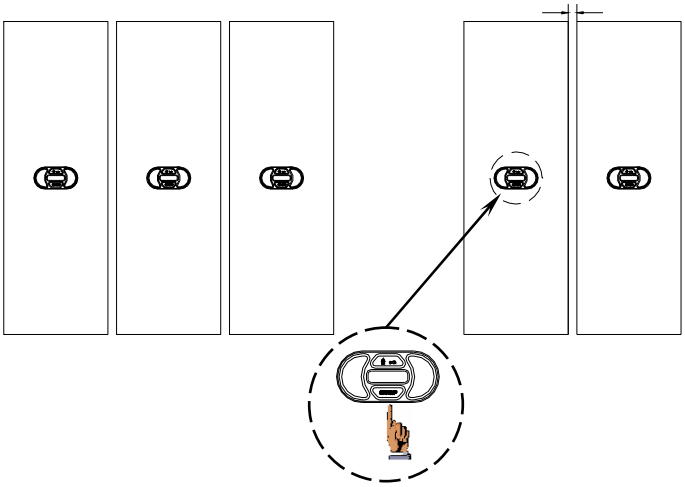
Programming the new stopping distance is always done to the touch-pad that is located to the left of the gap that needs adjusting. Follow the procedure below for setting a new stopping distance.

Step 1 Create an open aisle to the right of the carriage you wish to adjust.

Step 2 Touch the left side of the carriage you wish to adjust, it should begin to move to the right.



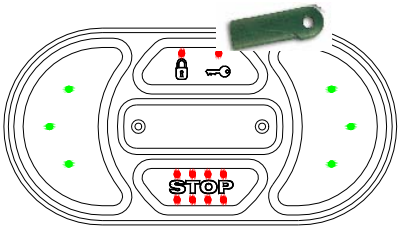
Step 3 When the moving carriage reaches the desired stopping distance from the adjoining carriage **(distance should be no greater than 6")** touch the STOP field of the moving carriage's touch-pad. The carriage will stop and the STOP LEDs will begin to flash. The other STOP LEDs in remaining touch-pads in the system will come on.



Step 4 Touch the STOP field on the carriage being adjusted. The STOP LEDs will stop flashing on the carriage that needs adjusting and the LEDs on the STOP fields on the other carriages in the system will go out (normal operation).

Step 5 Touch the STOP field again on the carriage to be adjusted. The STOP field will begin to flash. The STOP fields on the other carriages will come on solid.

Step 6 Pass the (blue/gray) calibration transponder key in front of the KEY symbol that is on the touch-pad. The red LED in the KEY symbol will come on for a brief second indicating that the new stopping distance has been set. The STOP field will continue to flash.



Step 7 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

This process can be repeated for each carriage that the user wishes to change. The default stopping distance is 1-¼".

If there is a power failure the controller will remember the new setting once power is restored.

If stopping distance adjustments are to be made to a system that has the passive aisle safety enabled. It is important that this feature be disabled before making this adjustment. See the following topic regarding enabling and disabling the passive aisle feature.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

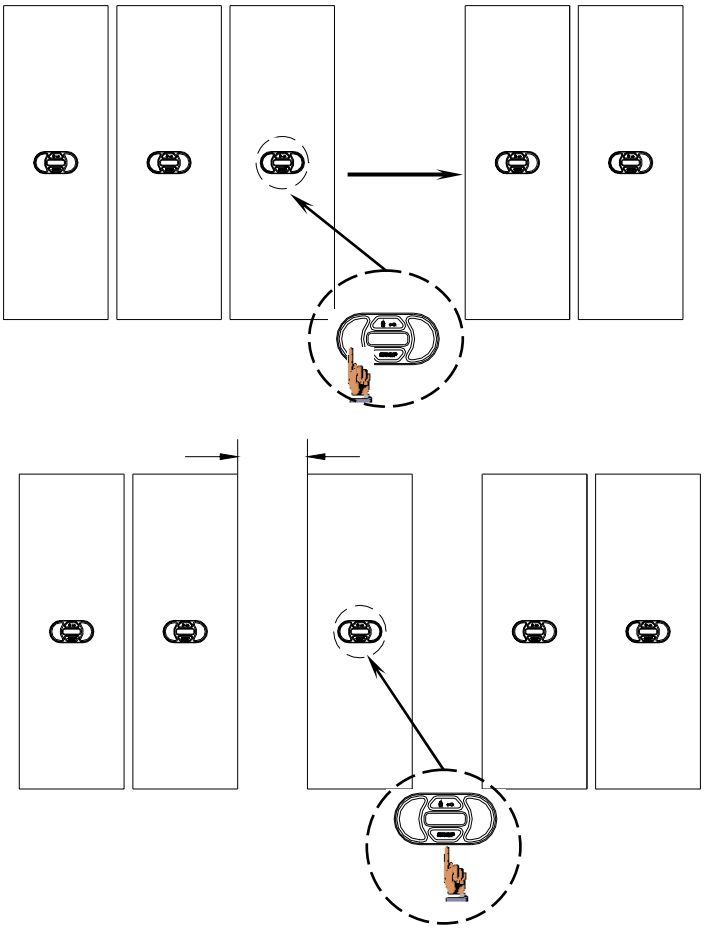
Power³ Lock Transponder Key (Yellow/Gray)

The lock transponder key can be used in two different ways: converting a moveable carriage to a stationary one, locking down the system, locking down a static carriage that is in the center of the system layout.

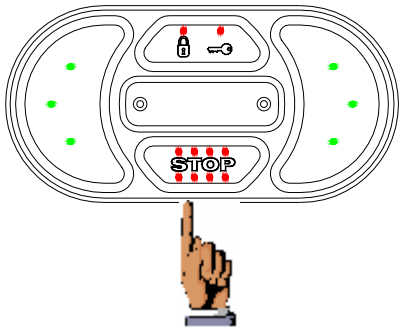
☑ *Converting a moveable (mobile) carriage to a stationary carriage*

Using the lock transponder key the end user can program any mobile carriage to become a stationary carriage; this will allow the user to create multiple open aisles within a system. The benefits of programming the stationary carriage(s) are to create system flexibility. The systems configuration can be changed easily according to the end users storage patterns. Follow the procedure below for converting a mobile carriage to a stationary carriage.

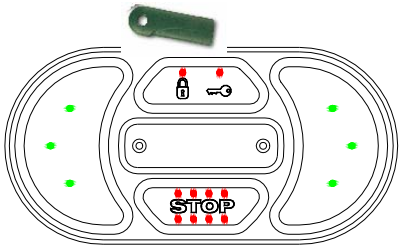
Step 1 Move the carriage that you wish to make a stationary carriage to its desired location. When the moving carriage reaches that destination touch the STOP field on the touch-pad. The moving carriage will stop, the red STOP LEDs will begin to flash. The STOP fields on the other carriages will come on solid.



Step 2 Touch the STOP field of the touch-pad on the carriage that is to be converted. The red STOP LEDs will stop flashing. The remaining STOP LEDs on the rest of the system will go off. Touch the STOP field again, on the carriage that is to be converted. The red STOP LEDs on that touch-pad will start flashing. The STOP fields on the other carriages will come on solid.



Step 3 Pass the (yellow/gray) lock transponder key in front of the KEY symbol that is on the touch-pad. A red LED will come on above the lock symbol indicating that the carriage is locked.



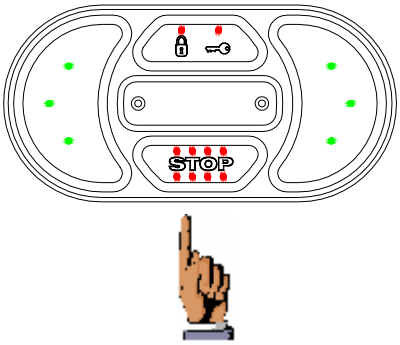
Step 4 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

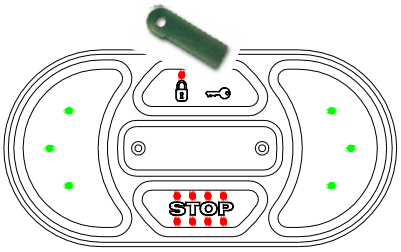
☑ *Converting a stationary carriage back to a moveable (mobile) carriage*

The stationary carriage can be easily changed back into a moveable (mobile) carriage by using the lock transponder key to unlock the carriage.

Step 1 Touch the STOP field of the touch-pad on the carriage that is to be converted. The red STOP LEDs will start flashing. The remaining STOP LEDs on the rest of the system will come on solid.



Step 2 Pass the (yellow/gray) lock transponder key in front of the KEY symbol that is on the touch-pad. A red LED will go off above the lock symbol indicating that the carriage is unlocked.



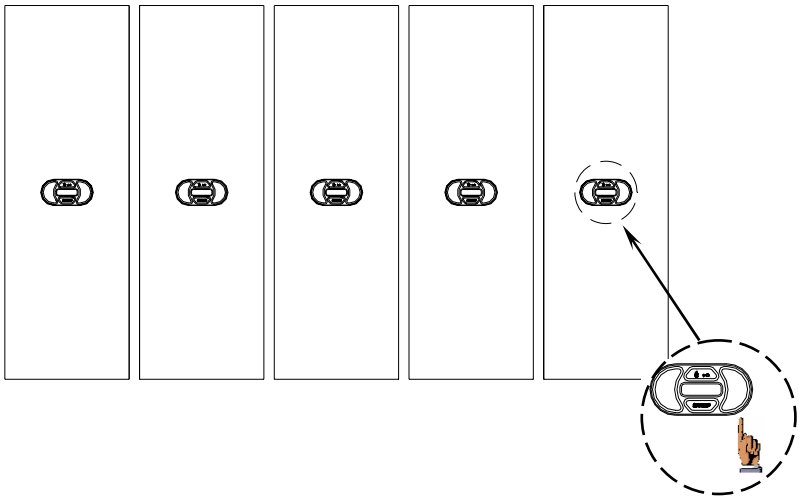
Step 3 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

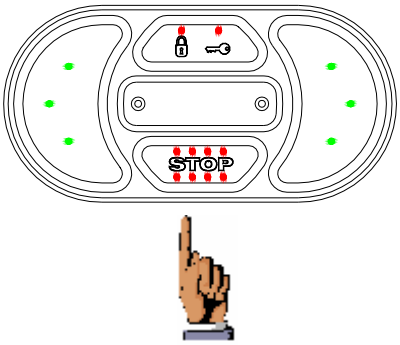
☑ *Locking down the system*

An entire system can be locked down or individual carriages may be locked at any time by the use of the lock transponder key. Follow the procedure below for lock procedure.

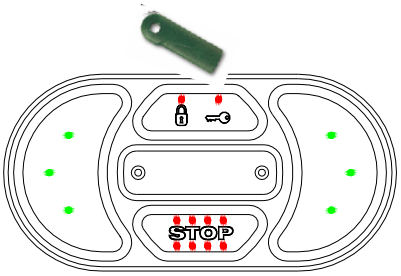
Step 1 Move the carriages to form a closed system.



Step 2 Touch the STOP field of the touch-pad on the carriage that is to be locked. The red STOP LEDs will start flashing. The remaining STOP LEDs on the rest of the system will come on solid.



Step 3 Pass the (yellow/gray) lock transponder key in front of the KEY symbol that is on the touch-pad. A red LED will come on above the lock symbol indicating that the carriage is locked.



Step 4 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

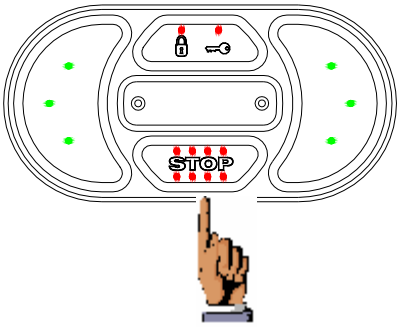
Make sure not to accidentally lock down all the carriages in the system. If this was to happen the only way to unlock the entire system is with the Power³ Set-up Software.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

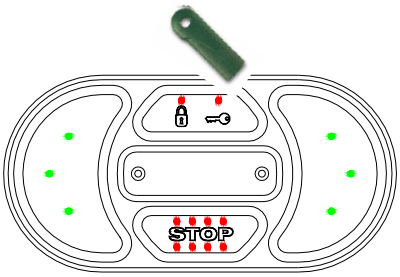
☑ *Unlocking the system*

The locked carriage can be easily unlocked by using the lock transponder key to unlock the carriage.

Step 1 Touch the STOP field of the touch-pad on the carriage that is to be unlocked. The red STOP LEDs will start flashing. The remaining STOP LEDs on the rest of the system will come on solid.



Step 2 Pass the (yellow/gray) lock transponder key in front of the KEY symbol that is on the touch-pad. The red LED will go off above the lock symbol indicating that the carriage is unlocked.



Step 3 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

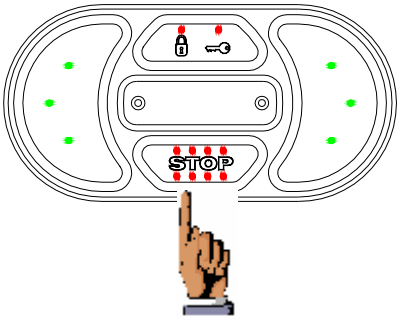
Power³ Passive Block Transponder Key (Red/Gray)

The system has two standard features, Passive Safety Aisle disabled (default) or enabled. The Passive Block Safety aisle requires the end user to clear the STOP fields on the touch-pads of the open aisle. The Power³ Passive Block Safety comes from the factory disabled.

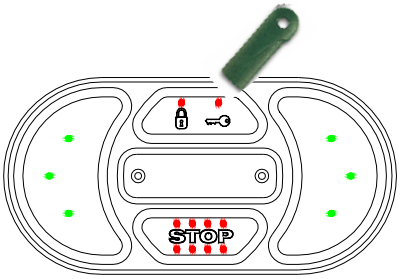
☑ *Enabling the passive block safety*

The passive block safety can be turned on by using the passive block transponder on any carriage in a system. Follow the procedure below to enable passive block:

Step 1 Touch the STOP field of the touch-pad on any carriage in the system. The red STOP LEDs on that touch-pad will start flashing. The remaining STOP LEDs on the rest of the system will come on solid.



Step 2 Pass the (red/gray) passive block transponder key in front of the KEY symbol that is on the touch-pad. A red LED will blink above the key symbol indicating that the new command has been accepted. The passive block feature has now been activated.

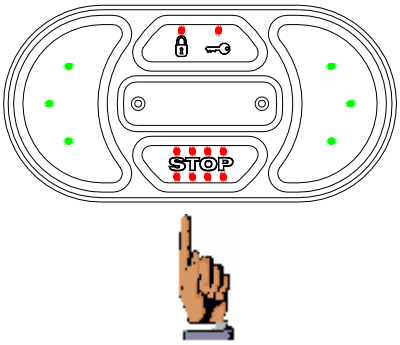


The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

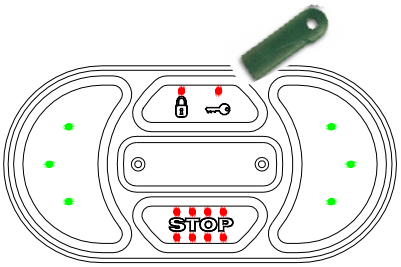
☑ *Disabling the passive block safety*

The passive block safety can be turned off by using the passive block transponder on any carriage that is not an opened aisle carriage that is in the system. Follow the procedure below to disable passive block:

Step 1 Touch the STOP field of the touch-pad on any carriage that is not an opened aisle carriage that is in the system. The red STOP LEDs on that touch-pad will start flashing.



Step 2 Pass the (red/gray) passive block transponder key in front of the KEY symbol that is on the touch-pad. A red LED will blink above the key symbol indicating that the new command has been accepted. The passive block feature has now been disabled.



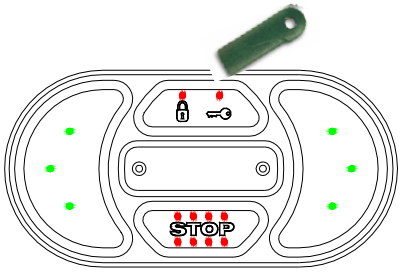
The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

Power³ Manual Drive Transponder Key (Green/Gray)

The manual drive key allows a carriage to temporarily move very slowly. This key would be used for fine positioning of a carriage.

Step 1 Touch the STOP field of the touch-pad on the carriage that is to be moved manually. The red STOP LEDs on that touch-pad will start flashing. The remaining touch-pads will come on solid.

Step 2 Pass the (green/gray) manual drive transponder key in front of the KEY symbol. The flashing Stop field will go off. The remaining touch-pad STOP fields will come on solid.



Step 3 Using the left/right ARROW field move the carriage to its desired location. The carriage will no be traveling at a third of its normal speed. Once the carriage reaches its destination, touch the STOP field to stop movement.

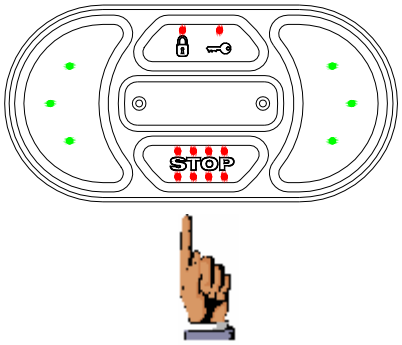
Step 4 To disable this function, pass the transponder key in front of the KEY symbol again. The STOP fields will start flashing, indicating that manual drive has been disabled. The remaining STOP fields on the rest of the system will be on solid.

Step 5 Touch the flashing STOP field. The flashing red LEDs will go off. The system is now ready for normal operation.

The system will time-out after 15 seconds when no transponder key is recognized. The system will reset and the programming procedure will have to be repeated.

☑ *Clearing an emergency stop condition*

If a photo-eye sweep, PIR sensor, MCMS, or emergency stop, initiate an unexpected emergency stop condition the red LEDs in the STOP field will continuously blink. To clear this condition, simply touches the STOP field on the touch-pad that is blinking. The system will automatically reset.



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Section 6

Power³ Controller Set-up Software

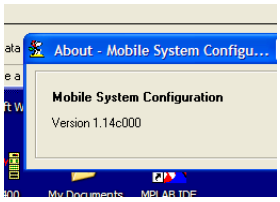
The Power³ Controller Set-up Software is a software package that is necessary when a system requires the following changes:

- Default values need to be changed (i.e. aisle distances, passive block reset value, aisle lighting timing, etc.).
- Any carriage that uses a floor stop.
- Aisle Access Security.
- Remote operation.
- Fire/Night Park.

☑ *System Requirements*

A PC with Windows 95, 98, 2000, or NT, CD ROM drive, an available COM PORT, RS 232/485 converter, and a communication cable.

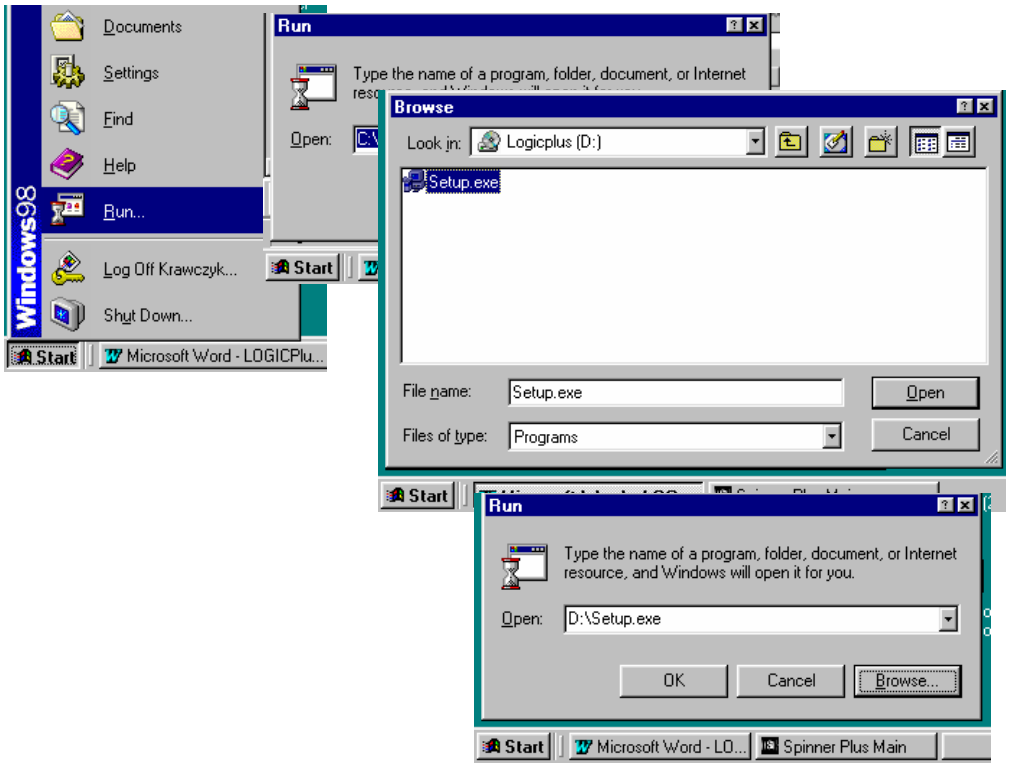
The Latest version is



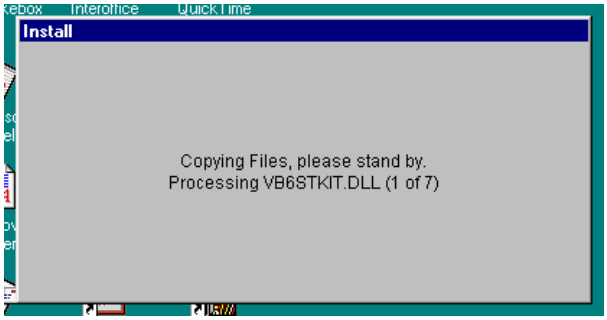
☑ *Loading the Power³ Controller Set-up Software on Computer*

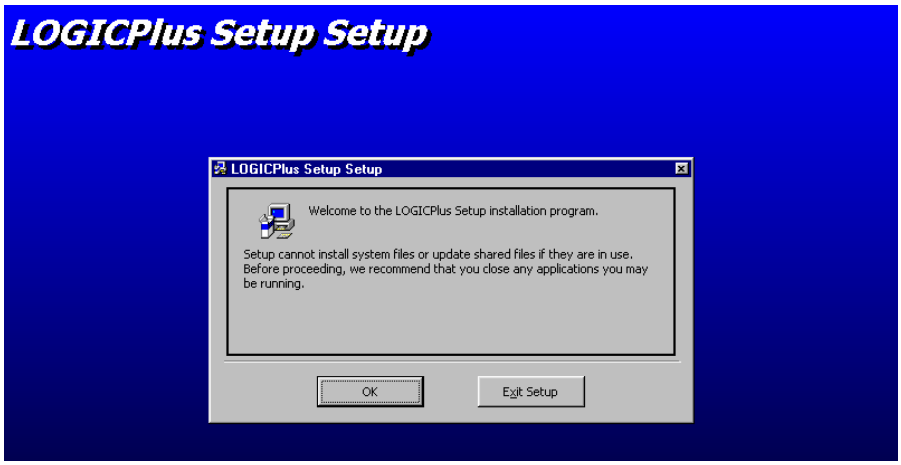
Insert the CD ROM in the appropriate drive and follow the on screen prompts. If the computer has auto start the CD should load automatically.

If the computer does not support auto start it will necessary to install the program from the Start Menu; Click **Start**, Click **Run**, Pull down proper CD ROM Drive (D:),Click **Browse**, Click on **Setup.exe** to highlight, Click **Open**, Click **Open** *or* Click **Start**, Click **Run**, Type **D:\Setup**, Click **OK.**

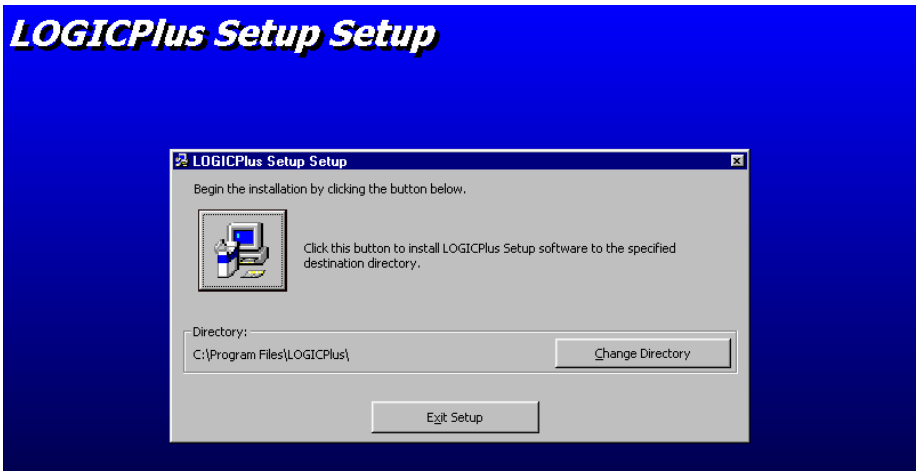


The Power³ Set-up Software will begin to load. It is very possible that conflicting .dll errors might occur during the install process, if this happens press ignore to finish the loading process.

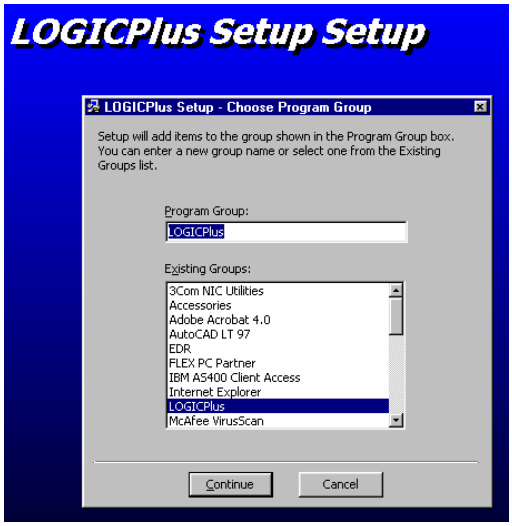




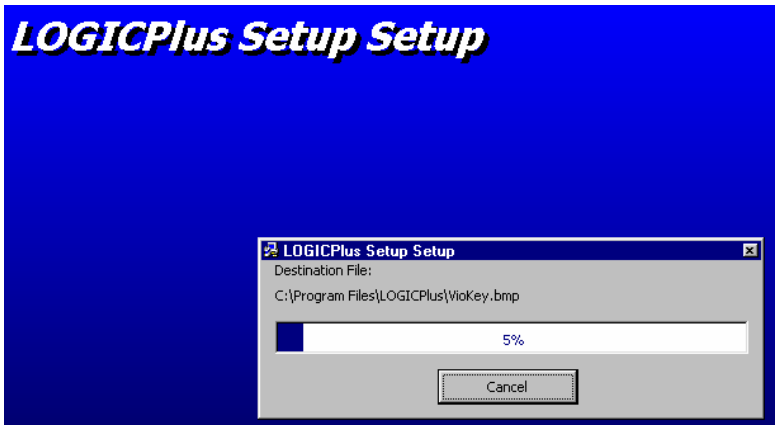
Click **OK**.

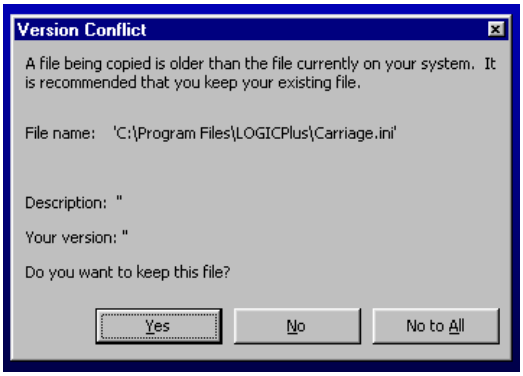


Click **Large Computer ICON** to begin the installation of the software.

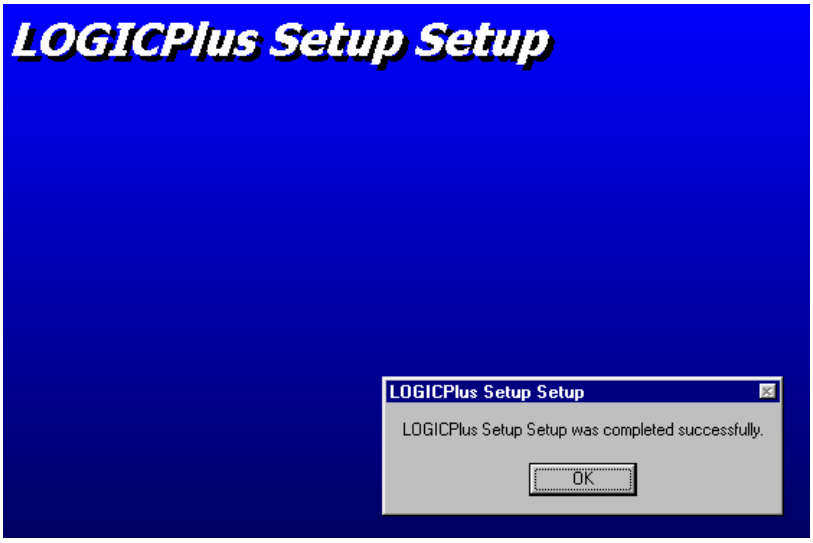


Click **Continue**.





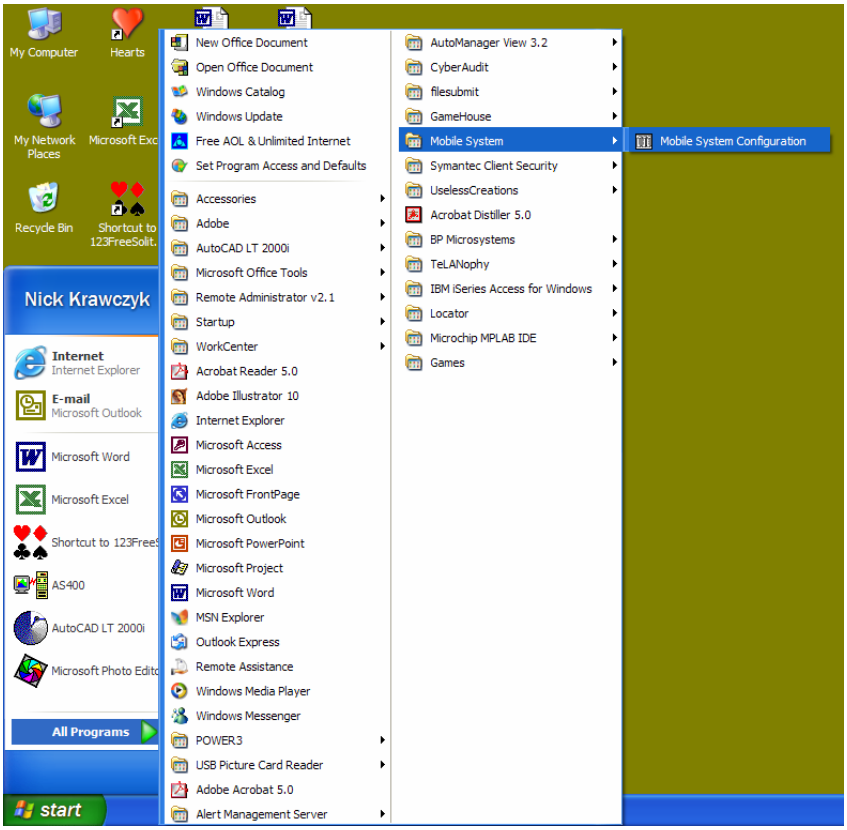
It is possible that the software has an older operating file that is on the computer. If the Version Conflict Screen appears, click **Yes**.



Click **OK** to finish the installation of the software.

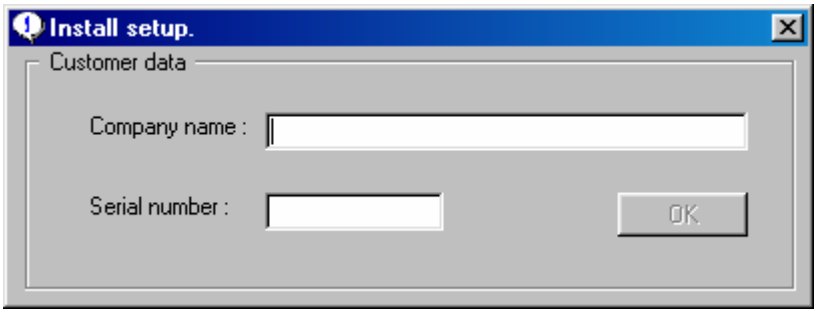
☑ *Starting the Power³ Set-up Software*

Once the software is installed; Click Start from Menu Toolbar, with mouse highlight All Programs, highlight Mobile System, Click on Mobile System Configuration ICON.



☑ *Install Setup for Power³ Mobile System Configuration*

The following screen will appear only upon first time setup.



Company name :
Type in the company name.

Serial number :
How to make an access code for a specific mode.

Code	*Config*	*Remote*	*Keyconfig*	*No Communication*
1				
2				
3				
4				
5				
6				
7				
8				

Serial number : xxxxxxxxxxxx 12 char.

The first 4 characters and the last 7 characters are just fill-in. The 5th character code is the deciding code for a specific mode.

Example
xxxx1xxxxxx Key config (aisle access key configuration) mode only.
xxxx2xxxxxx Remote mode only.
xxxx3xxxxxx Key config and Remote modes only.
xxxx4xxxxxx Config mode only.
xxxx5xxxxxx Config and Key config mode only.
xxxx6xxxxxx Config and Remote modes only.
xxxx7xxxxxx Config, Remote, and Key config modes only.
xxxx8xxxxxx All modes *Demo Mode*. (No communication would be used for software demos)

In most cases **CODE 7** is the appropriate code.

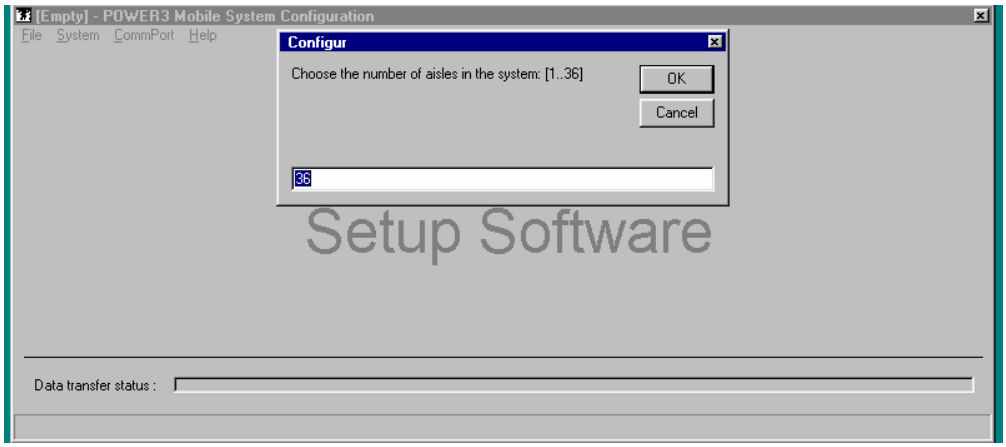
Click **OK**

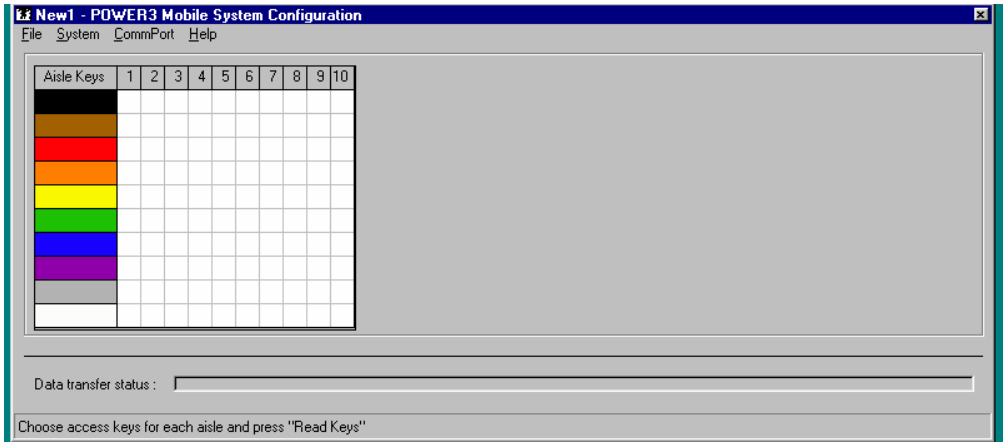
The following screen will appear.

☑ *Assigning Aisle Access Control with the Power³ Mobile System Configuration Screen*

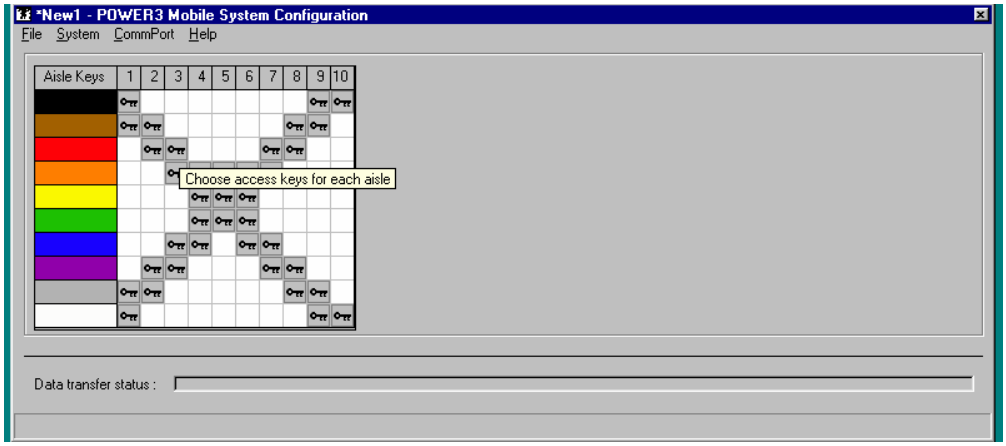
Step 1 Click **File**, and **New Configuration**

Step 2 Enter the number of aisles in the system (1~36). Click **OK** when finished.



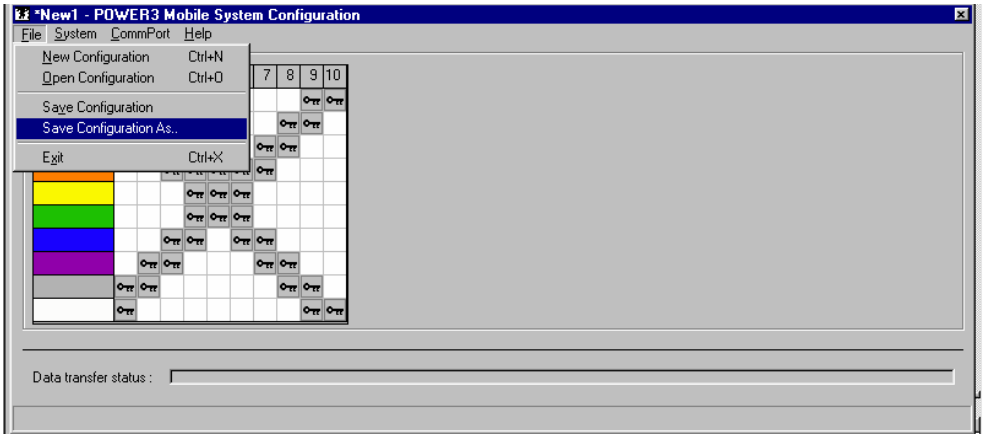


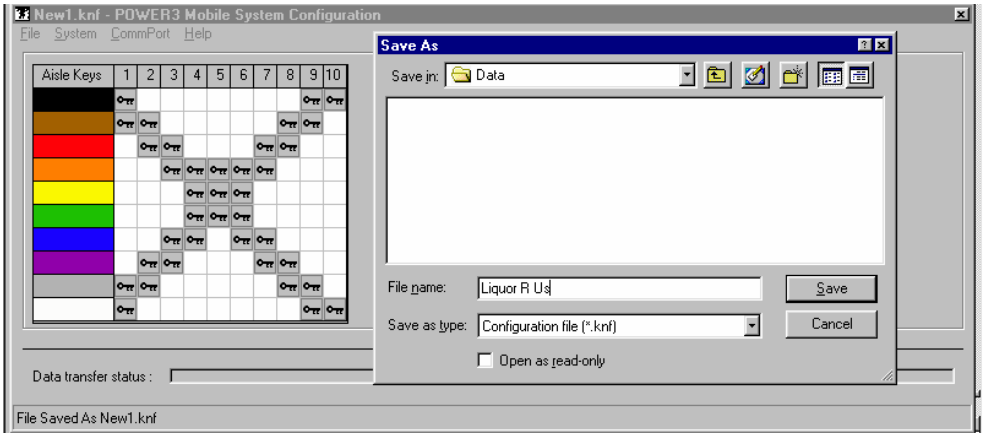
Step 3 Choose what color aisle key that you would like to assign to a particular aisle number that requires aisle access control. Click on the matrix that correlates to the aisle chosen. A little key symbol will appear.



Step 4 At this point in time, the aisle configuration can be saved, saved as, or the data can be downloaded to the controllers. Connecting the PC to the controllers will come later in this section.

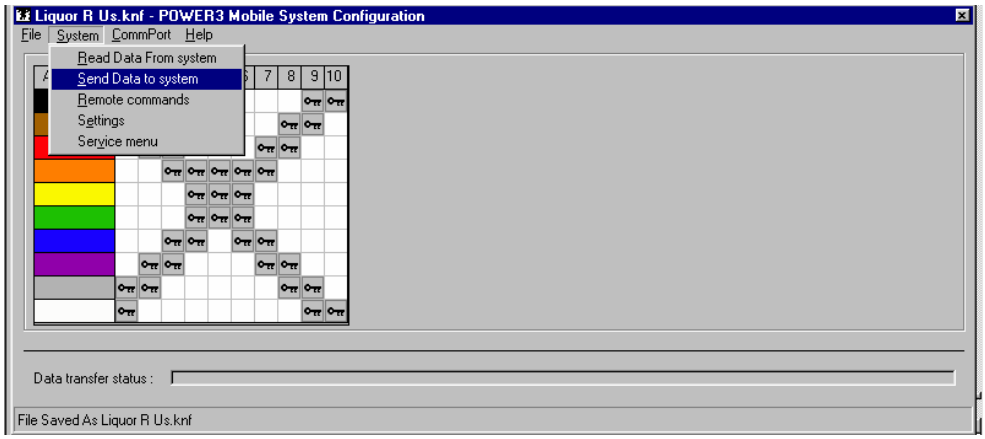
Step 5 Name and save Configuration. Click **File**, Click **Save Configuration As**.



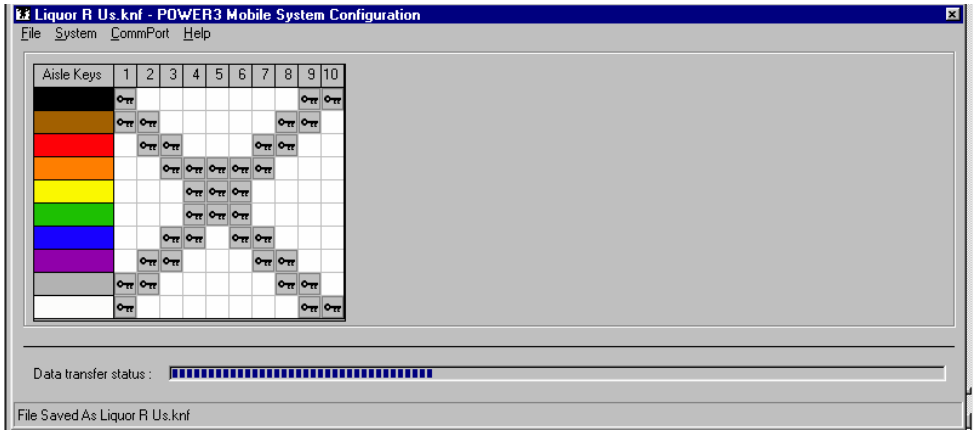


Step 6 Name the configuration and click **Save**.

Step 7 Download configuration to the controllers. Click **System**, Click **Send Data to System**.



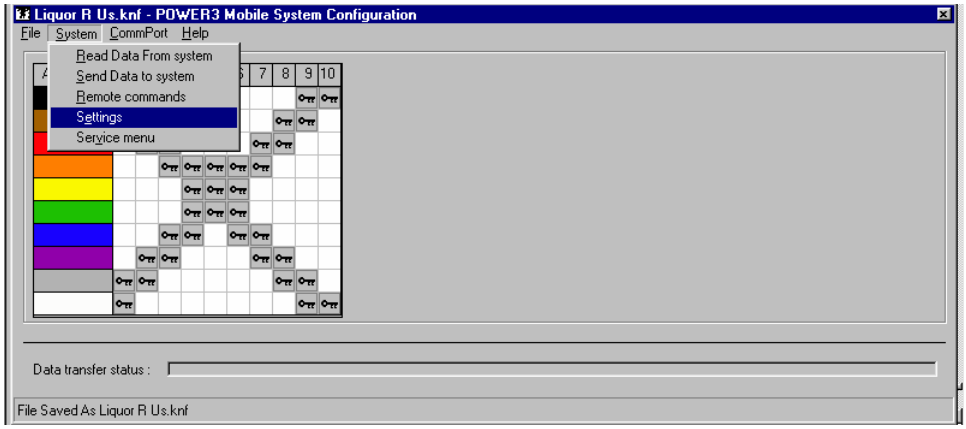
Step 8 The Data transfer status bar will indicated percentage to completion.



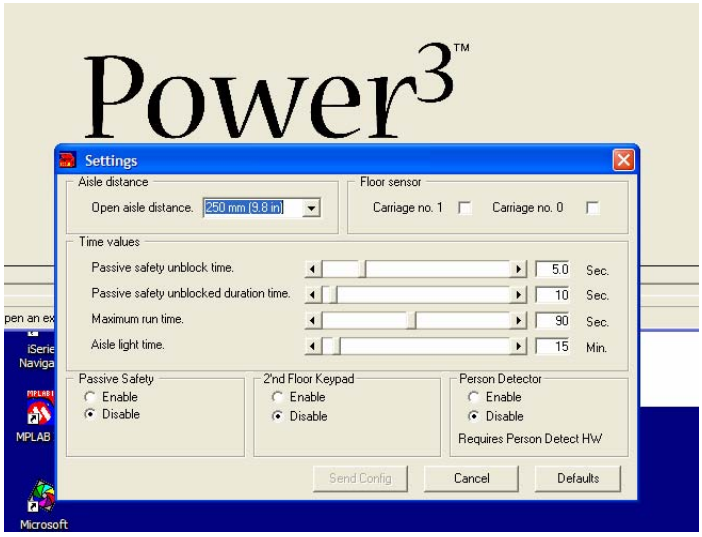
☑ *Changing System Settings with the Power³ Mobile System Configuration Screen*

The systems default values: open aisle distance, assigning a floor stop sensor, changing time values, and enabling/disabling passive block safety all can be done from this screen.

Step 1 Click **System**, Click **Settings**



Step 2 Make any changes necessary, Click **Send Config** when done.



Open aisle distance
Using the pull down arrow a predetermined value for an open aisle is defined. This value determines when all safeties are active.

Floor sensor
Clicking on the Carriage no. 1 and/or Carriage no. 0 box determines if there is an installed inductive floor stop sensor on the first and/or last carriage in a system.

Passive safety unblock time
The time allowed for unblocking each aisle in passive safety aisle mode can be adjusted.

Passive safety unblocked duration time
The time allowed to unblock an aisle to activating a drive command in passive safety aisle mode can be adjusted.

Maximum run time
The value for setting the maximum allowed time for motor run.

Aisle light time
The aisle light time is a timeout value that is used for setting when the aisle lights will automatically go off once the aisle is opened.

Passive safety
The passive aisle safety mode can be either enabled or disabled.

2nd Floor Keypad
The 2nd Floor Keypad tells the system that it is a double-decker application.

Person Detector
The person detector has to be enabled when an optional detection device is installed.

Send Config
This function sends the new settings to the controllers.

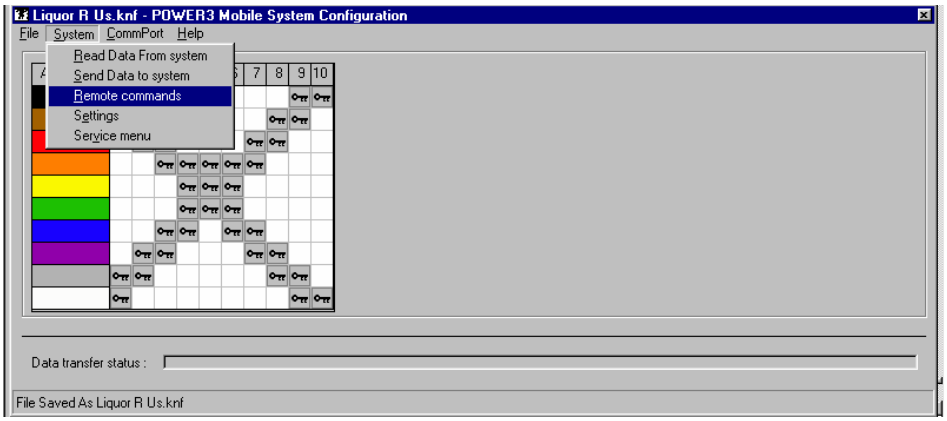
Default
This function resets all settings to the factory default values.

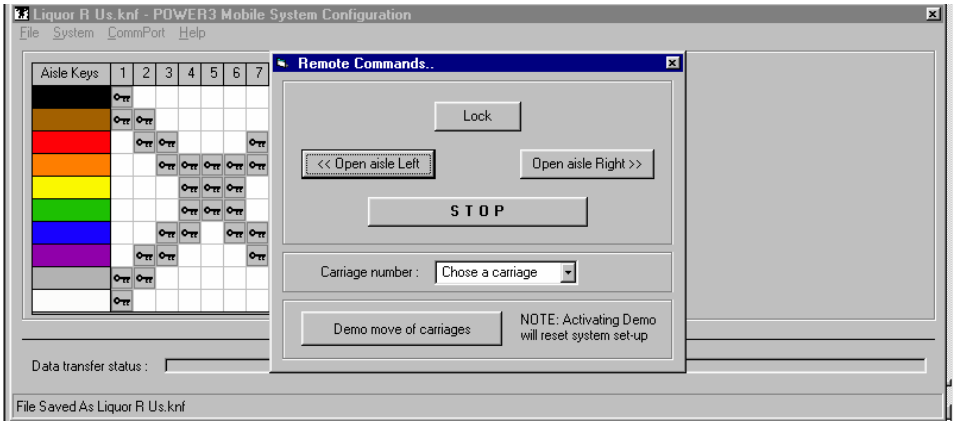
Service
This function will open up the Service routine menu.

☑ *Remote Access using the Power³ Mobile System Configuration Screen*

The carriages aisles can be opened and closed remotely using this screen. Carriages also can be locked and unlocked

Step 1 Click **System**, Click **Remote commands**





Step 2 Choose a carriage number by pulling down a **Carriage number**. Once the chosen carriage number has been selected, click **Open Aisle Left**, **Open Aisle Right**, **Lock** or **STOP**.

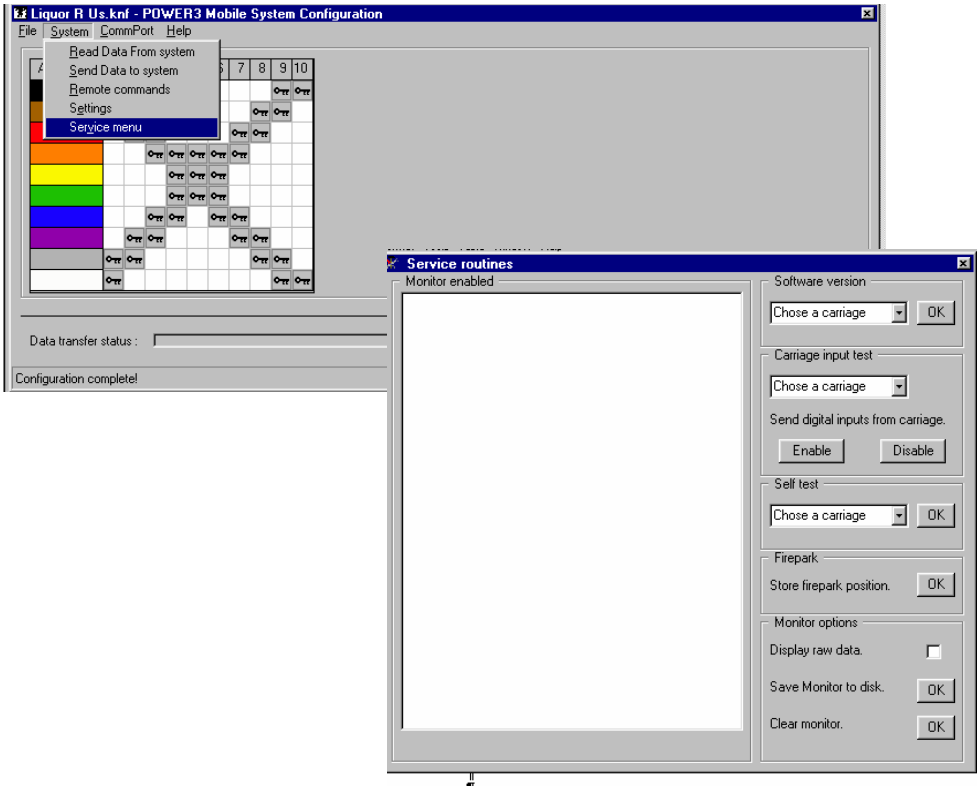
☑ *Service Menu using the Power³ Mobile System Configuration Screen*

The Service menu provides information on software version, testing the inputs for floor sensor, photo-eye sweeps, PIR sensors, etc. A carriage self-test also can be performed to check proper communication.

If the controller receives a signal from an external device (alarm n.o. contact switch) through the AUXIN input the moveable carriages will move to whatever position that was last downloaded to the software. The carriages could park with all slightly opened aisles all to all closed aisles.

The Monitor mode displays raw data concerning communications. This information once monitored can be saved to a file for further diagnostics.

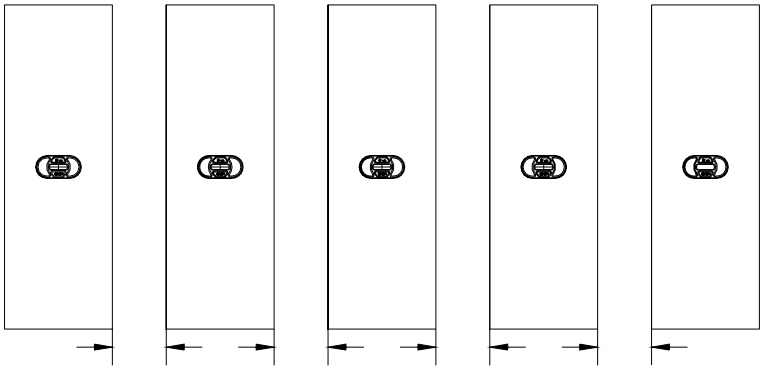
Step 1 Click **System**, Click **service menu.**



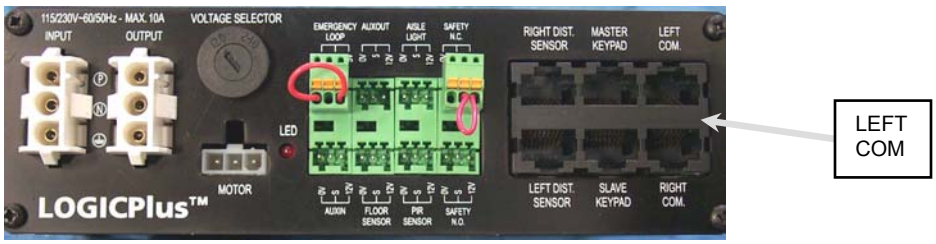
⇨ *Fire/Night Park Feature*

The Power³ controller has the capability of positioning all the moveable carriages to positions that are deemed fit for the fire/night park application. If the controller receives a signal from an external device (alarm n.o. contact switch) through the AUXIN input the moveable carriages will move to whatever position that was last downloaded to the software. The carriages could park with all slightly opened aisles or all closed aisles.

Step 1 Open/close moveable (mobile) carriages to desired fire/night park stopping distances (maximum 17 11/16" space between carriages).

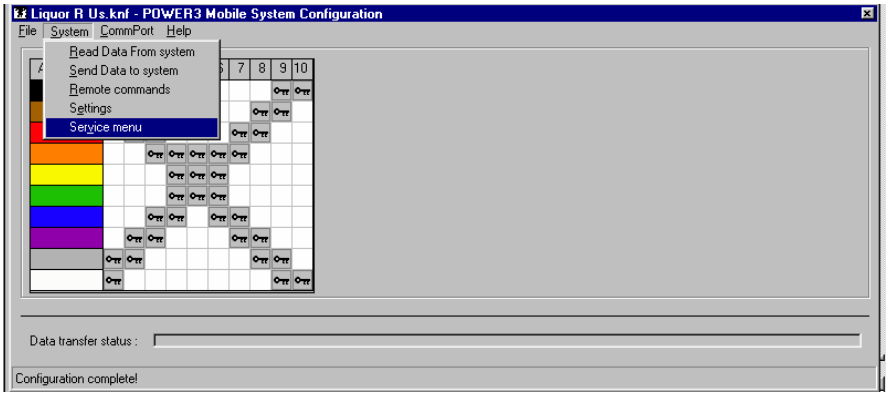


Step 2 If PC is not connected to the most left controller, plug pc communication cable into LEFT COM port of this controller.

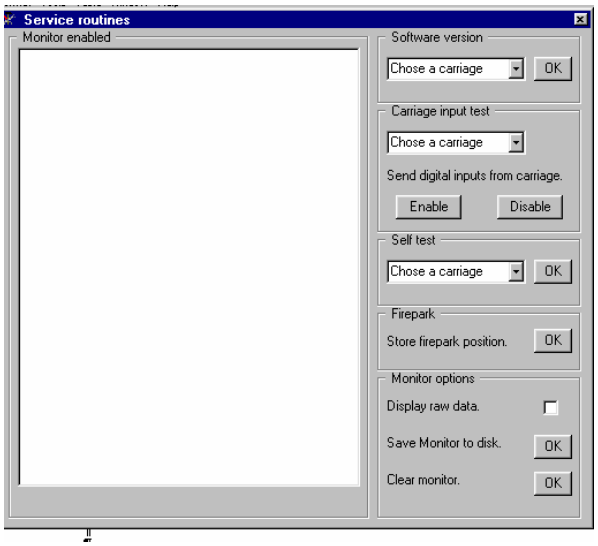


Step 3 Start Power³ Set-up Software.

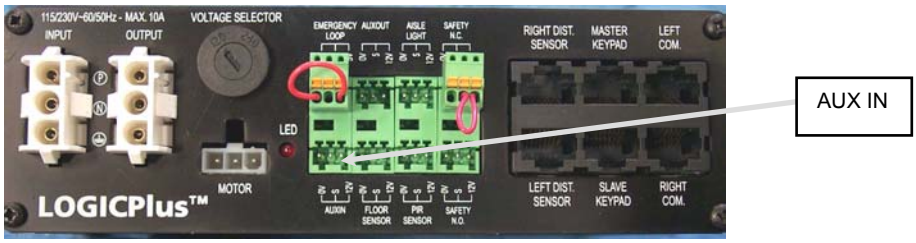
Step 4 Click **System**, Click **service menu**

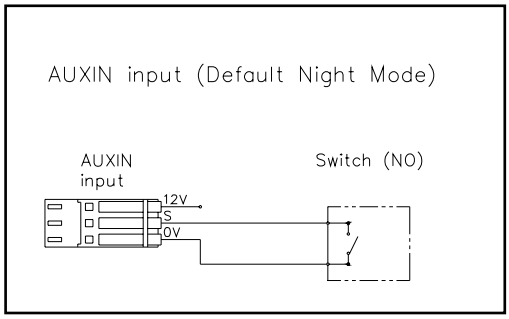


Step 5 Click **OK** under store fire-park position.



Step 6 Wire the external Normally Open switch to green connector and plug into AUX IN connector on the most left controller.





☑ *Connecting the PC to the Aurora Mobile Power³ System*

In-order for the PC to communicate to the Mobile System some communication hardware is necessary. The items that are necessary are listed below:

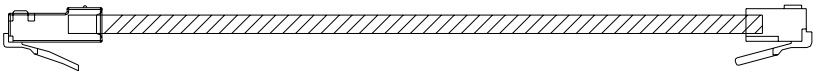
- PC with Windows 95,98,2000 or NT
- Available RS-232 Com Port (DB9)
- P3 RS-232/485 Converter (3133.00063)
- P3 Converter Cable (3133.00064)
- P3 Controller Set-up Software (3133.00017)

⇨ *RS-232/RS-485 Converter*

The RS-232/RS-485 Converter is necessary for the computer to communicate to the Power³ System. The converter plugs directly into the back of a PC at the DB9 Com Port. Every computer has a 9 pin male connector on it; this is referred to as DB9.

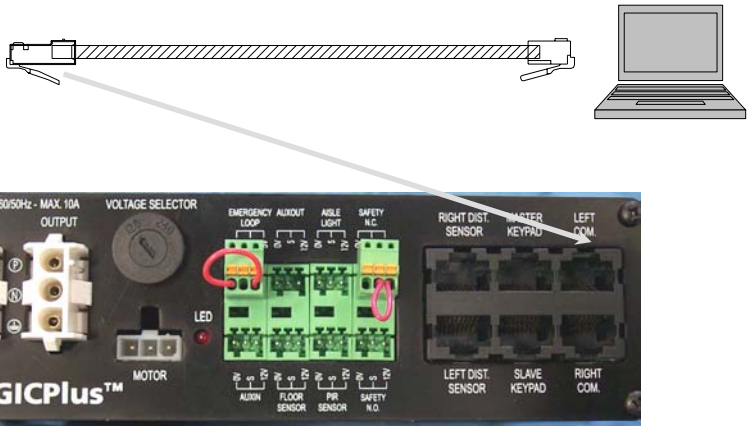
⇨ *Converter to Power³ Communication Cable*

A converter cable is also needed for communication to the Power³ system. This cable plugs into the back of the RS-232/RS-485 converter it has a 6 position telephone style connector, the other end plugs into the LEFT COM at the first most left controller in a Power³ system, this end has a CAT.5 8 position connector.



⇨ *Connecting the PC Interface Cable into the controller*

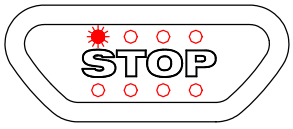
Connect the Category 5 modular plug from the PC Interface Cable into the **MOST** left controller in the system. Connect the plug into the connector marked LEFT COM on the controller



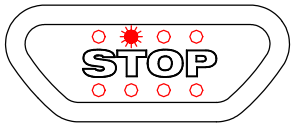
Section 7

Trouble-shooting and Error Codes

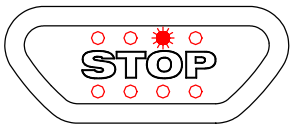
In the unlikely event that you should experience technical problems with the operation of your Power³ carriages system please remove power. Wait approximately 10 seconds then restore power. By turning the system off and then back on in this manner it allows the system to check and reset its programming. If this does not rectify your problem please take note of the system touch-pads to see if any of the STOP panels are illuminated by a single red light as shown on the ERROR code chart below.



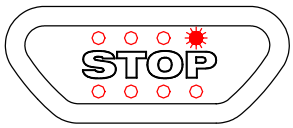
Right distance sensor error



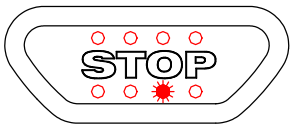
Left distance sensor error or no communication to the left



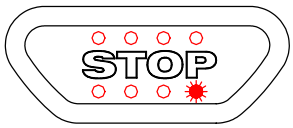
Emergency loop circuit error



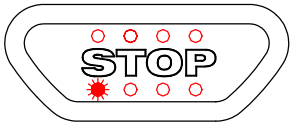
Motor error (voltage supplied, but no current detected)



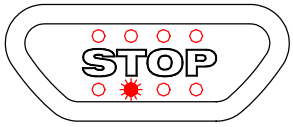
Communication error left



Communication error right



Communication error master touch-pad



Communication error slave touch-pad

Intentionally Left Blank

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