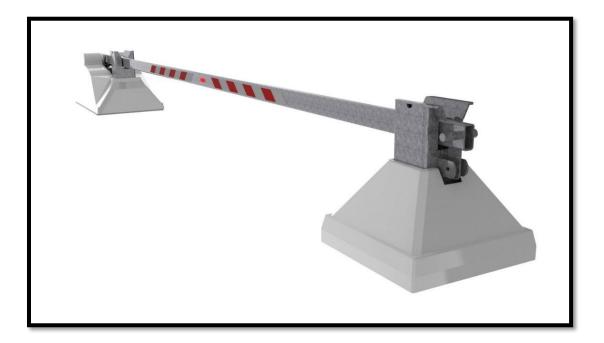


Installation Manual

RSS-3000 Series Electric Drop Beam Vehicle Barrier



RSSI Barriers, LLC 6530 East Highway 22 Panama City, Florida 32404 850-871-9300/Fax 850-871-4300 Web Site: <u>www.rssi.com</u>

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INTRODUCTION

This manual provides Installation Procedures for the RSS-3000 series electric drop beam vehicle barrier system for Integrators/Contractors. It is **NOT** intended to be all encompassing and is based on "typical" installations. After review of this manual, we recommend a conference call with the RSSI factory to discuss questions regarding procedures that may require further clarification. RSSI is a barrier manufacturer; on questions related to civil issues specific to a particular jobsite, Integrators/Contractors should refer to the Architectural Firm that designed the project or a licensed Civil Engineer familiar with the local site conditions and requirements.

GENERAL

The RSS-3000 Drop Beam Barrier is a modern "best-of-breed" electrically operated, retractable, Drop Beam vehicle barrier that, when properly configured, can operate with a continuous duty cycle in all climates with minimal maintenance and expense. An Allen-Bradley MPAI series IP-67 servo electromechanical actuator with manual override and rapid reverse smoothly and quietly rotates an arresting element to an above ground position of 42" without obstructing line-of-sight vision

BEFORE YOU BEGIN

- Read and understand all instructions and procedures before you begin to install components.
- Read and observe all Warning hazard alert messages in this publication. They provide information that can help prevent serious personal injury, damage to components, or both.
- Follow your company's safety guidelines, to include lockout procedures.
- Use the proper tools when required to help avoid serious personal injury and damage to components.
- After review of this manual, we recommend a conference call with the RSSI factory to discuss any questions regarding procedures we may not have addressed or that require further clarification.

HOW TO OBTAIN ADDITIONAL FACTORY SUPPORT

If you have any issues or questions, on-site integrator/contractor personnel are highly encouraged to contact RSSI's Service department. WE CAN HELP YOU! Normal office hours are 7:00 AM CST - 3:00 PM CST Monday -- Friday. After hours support is available with prior coordination

Telephone	Email
+1 (850) 871-9300	service@rssi.com

Optional Installation Items

RSSI can provide optional items that will help make the installation process easier for your Team. Items include Rebar Cages with welded mats, correct Anchor Bolts and hardware, Epoxy, Epoxy Applicator, and Bolt Template for Receiving Buttress. Please contact RSSI for more details.

HAZARD ALERT MESSAGE AND SYMBOLS



WARNING

A Warning alerts you to an instruction or procedure that you must follow exactly to avoid serious personal injury and damage to components.



CAUTION

A Caution alerts you to an essential installation or maintenance procedure or statement, which, if not strictly observed, could result in damage to the system, equipment or injury.



NOTE

A Note alerts you to an essential installation or maintenance procedure, condition, or statement.

GENERAL SAFETY

Personnel MUST comply with the following important safety instructions DURING installation activities for the RSS-3000 series electric drop beam vehicle barrier system.

- Read and comply with all safety rules in this manual.
- A fully trained installation person must perform all start-up work.
- Do not operate this equipment when you are distracted or under the influence of drugs, alcohol or medication causing diminished control.
- Prior to start-up of the RSS-3000 series electric drop beam vehicle barrier system, all electrical connections to the barrier will be isolated (disconnected) IAW local Lock Out Procedures.
- Never operate this equipment when a vehicle, person or any obstruction is in the way of full operation of the RSS-3000.

BARRIER DESCRIPTION

- RSS-3000 Series Electric Drop Beam consist of all steel construction and hot dip galvanized frame, post, and beams. Main buttress is 3.5 feet wide and 6 feet long, and receiving buttress is 3 feet wide and 3 feet long. Beam lengths can offer protection for clear openings from 12 to 20 feet wide.
- Beam Dimensions are 3/8" steel tubing, 3 inches wide by 6 inches tall and Beam Height is 42" inches to the top of beam from drive surface. Operating System is Servo EM Actuator technology and a Spring Assist Assembly. Standard Operation is less than 8 seconds. Operating Temperatures: Operational speeds are constant in temperatures ranging from -20 degrees to 200 degrees Fahrenheit with the use of heat on the operating systems.
- The Drop Beam Height when down is 42" and opens to a full 90°. The weight of the barrier depends upon the length of beam unit purchased.



BARRIER INSTALLATION – A Five Step Process



NOTE

Before you begin, you will need the following available on site prior to installation:

- Equipment for excavation, soil compaction, removal and disposal of spoils
- Concrete placing and finishing tools
- #5 steel re-bar
- 3000 PSI (minimum) Mix Concrete
- Equipment capable of lifting and setting the RSS-3000 series barrier in place

Step One – Excavate

• The first step is to excavate the existing roadway to a dimension of the appropriate buttress size. Refer to barrier description above or your site specific drawings.







NOTE: Rebar Length and Yardage of Concrete provided here are estimates done by RSSI. You should always finalize material count using prints pertaining to that certain job.

Buttress	Excavate Area	Rebar Type #5	Concrete
	(W x L x H)		(3000 PSI min.)
Pivot End	4' x 7' ⁻ 3" x 3'-6"	130 feet	3 yards
Receiving End	4' x 5' x 3'-6"	100 feet	2.2 yards

Excavation, Concrete, and Rebar details

NOTE: Ensure barrier placement according to the approved site plan to ensure road crown, underground utilities and tie into associated passive knee walls or bollards is taken into account.

Step Two – Placing Rebar and Form Boards

• Once the soil is compacted, place the # 5 rebar cage centered in the excavated area. Keep in mind when placing rebar cage that it needs to be clear of the Anchor Bolts that will be drilled in later. Form Boards to be placed on top of existing elevation to form the 6 inch above ground base for the RSS-3000 Drop-Beam. Refer to Installation Drawings.



WARNING

Ensure Proper rebar placement according to the drawings. If not properly placed you will have issues hitting rebar during bolt placement.

Step Three – Barrier Conduit Connections

RSS-3000 Drop Beam are fully operational and self-contained shipped from the factory ready to install. Drop Beams require 1" Flex Conduit be installed on the Power J-Box and 1" Flex Conduit be installed on the Control J-box onsite.



Step Four –Concrete

• Pour the concrete (3,000 psi minimum) around and inside the Rebar Cage and inside the Form Boards. Be careful not to damage the electrical conduit. A light broom finish is recommended. Allow sufficient time for concrete to harden before installing the RSS-3000 unit.



Step Five – Drilling and Mounting of Buttresses

- 1. Once concrete has cured, verify that the foundations are leveled and at the same elevation, with receiving buttress bolts cast in place.
- 2. Place the receiving buttress over the imbedded anchors and bolt it in place.
- 3. Place the main buttress and beam assembly on its foundation so that there is sufficient clearance between the impact pin and the receiving buttress flange for the beam to be able to rise. Center the beam in the receiving buttress cradle.





4. Once the main buttress is correctly positioned, install the epoxy anchors per installation instructions and epoxy manufacturer's requirements.



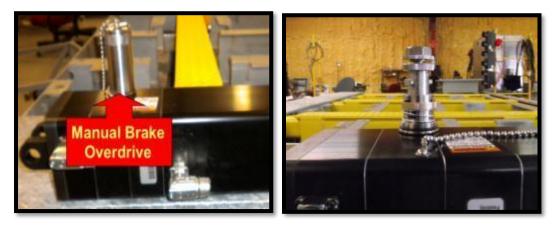


WARNING

You may have to adjust Actuator using the manual drive to remove retaining pin (Pic above)0, please ensure you disengage overdrive after manual function is used and before operating barrier. Failure to do so can damage the Actuator.

- 5. Carefully remove the retaining strap and safety pin from the hinged buttress.
- 6. The barrier can now be raised using the manual screw on the actuator if necessary. Be sure to disengage the manual screw prior to operating the actuator electrically.

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NOTE

Please refer to the manual screw operation instructions that are in the Maintenance Manual. You can also contact a RSSI technician by calling 850 -871-9300 or email at <u>service@rssi.com</u>.



WARNING

Failure to operate the manual screw properly will damage the actuator and void the warranty.

Step Six - Conduit, Wire, and Termination of Controls

Conduit and Wire

- Rigid Metallic Conduit should be used when penetrating the foundation for the BCP and where exposed to the elements.
- Electrical and Control Conduits will be run from the barrier into and out of Electrical and Control J-box (quazite box) to the BCP. Use stranded wire.
- After conduit has been installed, move on to controls. BCP's and BBP's arrive complete from the factory. Ensure all control wire and power wires from the barrier, to the BCP, to the operator controls are labeled to expedite termination to the BCP.
- Fiber. The Fiber may need to be run from the BCP to the Fiber Converter Panel. Ensure a qualified technician that can install, terminate, test, and certify Fiber is used.
- Electrical Power Cables should be sized by a Master Electrician or EE per N.E.C. Code based on distance from BCP's and BBP's to barriers.



WARNING

ENSURE A QUALIFIED ELECTRICIAN TERMINATES THE ELECTRICAL CONNECTIONS ACCORDING TO NATIONAL ELECTRIC CODE AND ANY APPLICABLE LOCAL CODES.

Terminations

• All Ethernet terminations should be tested with Ethernet cable tester (<u>TIA/EIA 568A</u> standard).

• All Multi-mode Fiber Optic cable should be terminated (Type ST Connectors) and tested by a qualified fiber optic technician.

Electrical Terminations

1. If BBU is provided by RSSI, local commercial power (Typically 120/240 V) 1P 3 wire 30A is wired to Battery Backup Panel (BBP) at MAIN CB-1 (L1–L2, - Ground). If no BBU commercial power will connect to Top of Main Disconnect Switch in Barrier Control Panel.

2. BBP transfers power to Barrier Control Panel (BCP) MAIN Disconnect Switch.

3. Servo Drive is located in BCP. The Motor and Encoder cables will be pulled from barrier through appropriate J-Box (Orange=Power/Green=Control) then into BCP. <u>Note</u>: If distance is over 90 feet from BCP to Actuator contact RSSI for assistance.

4. If Actuator Heat Pad is supplied, the Heat Pad is powered through the BCP terminals 1H1 and 1H2 and wired to the Barrier Power J-box (splices). Ground wire will need to be pulled to J-Box as well (check conduit legend for wire gauge needed). 3 Wires need.

5. The 24Vdc Traffic Lights are powered through the BCP PLC outputs and terminal blocks.

6. The 24Vdc Barrier Warning LED Lights are powered through the BCP PLC and wired through the Control J-Box then terminated in J-Box. 2 wires needed

7. The IR Beams (if applicable) are powered through the BCP +24Vdc (Red wire)/-24Vdc (Black wire) power terminal blocks to each IR Beam (splices in stands) Connect the Red wire to Brown and Gray wires of IR pigtail and Black wire to Blue wire of IR pigtail.

8. The Barrier Heat Thermostat (mounted outside Panel) is connected at BCP terminals +24Vdc and PLC input (splices at thermostat); if applicable.

Control Terminations

1. Servo Drive in BCP, an in-line breakout board will need to be terminated and plugged into Servo Drive in Panel.

2. BCP receives vehicle presence indications from the LOOPS in the roadway to the front of the LOOP DETECTORS in the BCP. (Bottom DIP switch must be set to right position at this point).

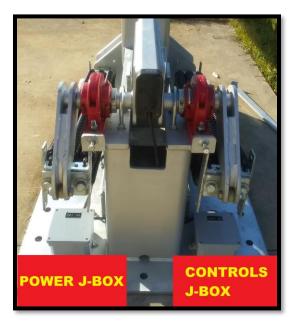
3. BCP receives INPUTS from IR Sensor (if applicable) (black wire on sensor pigtails) the black wire is connected to blue wire connected on PLC.

4. BCP controller receives a contact closure from the thermostat (mounted outside) to the BCP PLC inputs. This activates the barrier heat grid system.

5. If BBU is provided, BCP receives INPUT from Battery Backup Panel (BBP) when commercial power is lost and/or when a Low Voltage condition is present. BBP terminations are marked (+24VDC) 13 and 14. The BCP terminations are mark (+24VDC), (I:1/0) for Loss of Power and (I:1/1) for Low Voltage condition.

Installation of Servo Cables

• Install 1-1/4" Flex Conduit to the Power J-Box and 1" Flex Conduit to the Control J-Box.



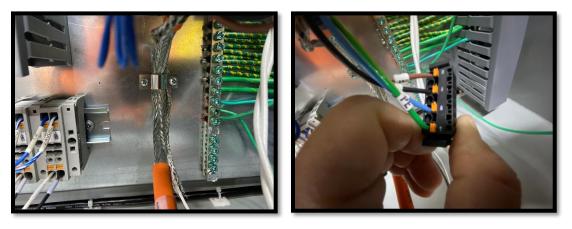
Power and Control J-Boxes.

• Locate and Unroll Orange Power Cable and Green Encoder Cables at barrier. Protect terminated end from damage then pull the unterminated end of cable through J-Boxes and to Control Panel. Orange=Power J-Box, Green=Control J-Box. Connect terminated ends to Actuator.



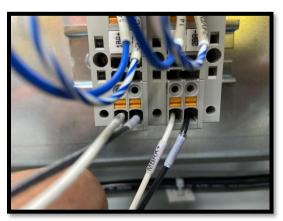
- Terminate 2 wires from BCP for Warning Lights in Control J-Box.
- If applicable, Terminate 3 wires from BCP for Heating Pad in Power J-Box.
- Once Servo Cables have been pulled through conduits to BCP, verify correct Drive location for cables and make a service loop then cut off excess.

• Terminate Orange Cable to drive by stripping plastic sheathing from section of cable at end. Placing exposed cable shielding under bonding plate then securing. Connect U/V/W wires to harness plug then plug into bottom of Servo Drive.





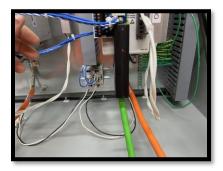
• Terminate MRBK+ and MRBK- wires back to Terminal Block.



• The Green Controls Cable will terminate into a breakout board that will plug into Servo Drive. Remove 6"-8" of rubber sheathing on cable. Place cable on breakout board mark where to cut cable shielding. Leave enough metal shielding to bond to plate at bottom of breakout board. Use small ziptie to secure to bonding plate. Using wiring diagram, terminate each wire. Don't leave much excess, it can be difficult to close breakout board. Plug into front of the Servo Drive then secure with two small screws. (pics on next page)

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Wire Color	Breakout Board Terminal	Wire Color	Breakout Board Terminal
Black	1	White/Gray & Orange	6
White/Black	2	Gray	7
Red	3	White/Green	10
White/Red	4	White/Orange	11
Green	5	Shield wire	0

Installation, Termination, and Testing of Fiber Cable

- Fiber converters are located in the BCP and in location near Operator Control Console.
- Fiber must be run in locations where the network communication distance exceeds 300 feet.
- A technician terminates the fiber and conducts a BASIC go/no go indication test. Based on the performance of the fiber optic link, if there are any issues, further testing with OTDR and certification may be required.
- Connecting the fiber terminations (ST) to the fiber convertors
 - 1. Line-up pegs with slots, push in and turn clockwise to lock
 - 2. There is a (TX) transmit and (RX) receive (marked on convertor)
 - 3. Take each pair of fiber cables (already terminated and tested) and connect to TX and RX
 - 4. Connect other end of fiber optic cable and termination to RX and TX (opposite)
 - 5. You should get LINK light indication on fiber convertor, if not, reverse connectors
- Cleaning the fiber terminations before, during and after the termination procedures is a key to success.



NOTE

It is highly recommended to use experienced technicians trained to install, terminate, test, and certify fiber. After installing, at a minimum test connection with an OTDR tester.



CAUTION

The Fiber cable is designed to be a straight run with no splices or severe bends or stretching.

6 Attachments

- 1. Safety Loop Set-Up
- 2. Servo Drive Set-up
- 3. Vehicle Detector Loop Installation
- 4. Traffic Light Installation
- 5. Commissioning Checklist

* * END OF SECTION * *



RSSI Barriers LLC 6530 E Highway 22 Panama City, FL 32404 (850) 871-9300 www.rssi.com

ATTACHMENT 1 – SAFETY LOOP SET-UP

Safety Loop Set-up

- 1. Ensure 24v power supply is on.
- 2. Install the frequency plug with the wires from the safety loops. Loop detector should flash red/green and then go to solid green indicator light.



NOTE

Ensure safety loops are clear before powering safety loop detectors.



Figure 1, Safety Loop Detector

- 3. Ensure the dipswitches are in the correct position; Factory settings are to the left, reset bottom two dipswitches to the right (train to infinity and normally open).
- 4. Top two dipswitches are sensitivity settings. Factory settings are to the left (low sensitivity), reset sensitivity to high (top two dipswitches to the right). Test safety loop sensitivity and make adjustments as needed.



Figure 2, Side of Safety Loop Detector



Sensitivity settings are Low, Medium Low, Medium High, High

ATTACHMENT 3 - SERVO DRIVE SET-UP

FROM THE MAINTENANCE TOUCH SCREEN IN THE BCP

Homing the Barrier

- 1. Turn on Servo Drive Fuse. On the maintenance touch screen in the BCP, go to the main screen and check for any alarms and reset or clear.
- 2. At the Main Screen, go to the LOGIN box and login: "RSSI" password: "32404".
- 3. Once you have logged in at the Main screen, select the HOME box and then at the HOME menu press the red HOME button. The Home button will flash while homing, once it has completed the process the green BARRIER HOMED button will appear. The barrier is now homed, select Main to return to main screen. If the barrier continues to HOME and shows no movement, press the ABORT HOME button then contact RSSI for support.



WARNING

If the barrier is not in the CLOSED position it will start moving Down when HOMING button is pressed.

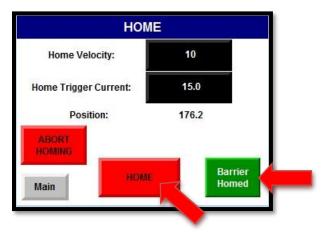


Figure 9, Home Menu

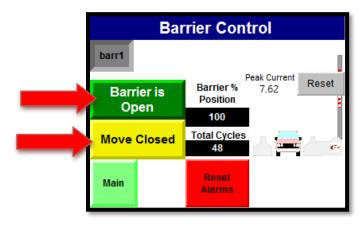
Barrier Control

1. From the MAIN MENU, press the BARRIER CONTROL button (See Fig 10).

	N	lain Mer	ıu	Ess
Barrier Control	Move Set Up	Advanced Set Up	Eve Move Oper Maint HMI	CALC: S
Jog / Teach	Home	01/13/2021 2:10:23 PM		
RSSI	Drive Status	Timers	Current User: DEFAULT	
Ala	arm	Reset Alarms	Login	Logout

Figure 10, Main Menu

2. Inside the BARRIER CONTROL menu use the MOVE CLOSED/OPEN buttons to operate the barrier a few cycles. In the OPEN(up) position to ensure the Locking Tab at end of the beam clears the roadway and ensure the CLOSE(down) position is all the way down and sitting firmly in the receiving buttress.



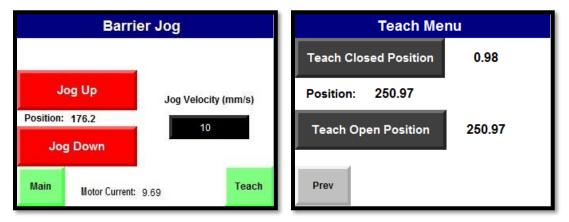
Barrier Control Menu



NOTE

If the Peak Current is higher than 20 Amp, it may indicate that the barrier position needs to be adjusted.

3. JOG/TEACH screens: use JOG to position barrier-then TEACH open/closed lane positions. Closed position should read around 3.5 and open position should read about 290 depending on roadway.



ATTACHMENT 4 - VEHICLE DETECTOR LOOP INSTALLATION GUIDE

INTRODUCTION

This loop installation guide is intended to illustrate the steps involved in installing a "saw cut type" vehicle detector loop. Loop sizes shown in the figures and illustrations vary according to the detection requirement being accommodated. The photographs are for typical loops used in conjunction with traffic signals.



Figure 1

Figure 2

Figure 3

INSTALLATION INSTRUCTIONS:

- 1. Mark the loop outline on the pavement surface using either a string or rigid frame and aerosol spray paint as shown in figures 1 & 2. Note that corners are diagonally cut to prevent damage to wire insulation during placement of the wire in the slot (see figure 3).
- 2. Place a mark on the concrete saw blade to insure the saw cut depth is 2" deep. The saw cut should be 1/4" wide at the lead cable slot and 1/8 inch wide for the loop slot.
- 3. Saw loop outline in pavement as shown in figure 4.









- 4. Clean debris from saw slot with compressed air, as shown in figure 5, and allow surface and slot to completely dry.
- 5. After the loop size has been determined, refer to illustration 1 to determine the number of

turns of loop wire to be placed in the loop slot. It is important that the proper number of turns are used.

6. Carefully install a continuous piece of the provided Loop Wire in the saw slot. Use Loop Installation Roller to insure that the wires are in the bottom of the saw slot (see figure 7). Do not use metal objects with pointed or sharp edges for this purpose!



NOTE

NO WIRE SPLICES ARE PERMITTED IN THE SAW SLOT!





Figure 6

Figure 7

- 7. Install backer rod in 4 inch segments in the saw slot as needed (see figure 6) to insure that the wires are held tightly in the bottom of the slot.
- 8. Twist the two wires at least five turns per foot where they exit the saw slot.

VEHICLE DETE	CTOR LOOP			
PAVEMENT SURFACE				
2"(TYP)	DEPTH) ROD DSI-116 WiRE			
NOTE: DEPTH OF SLOT VARIES WITH NO. OF TURNS				
LOOP CHART FOR N	UMBER OF TURNS			
Loop Perimeter(ft.)	No. of Turns			
10 - 13	6			
14 - 19,	5			
20 - 32	4			
34 - 66	3			
68 - UP	2			
	2689601			

Illustration 1



NOTE

If the backer rod is not pressed down firmly on top of the wires and the wires fully encapsulated, the detector loop may false call due to the wires being loose and vibrating under the backer rod. The loop wires should be continuous from the electronic control panel, around the loop and back.



Figure 8





9. When installing the loop sealant material, insert the tip of the applicator in the saw cut and confirm the material is being pumped completely around the wires or firmly on top of the backer rod. After pouring the loop sealant in the saw cut as shown in figure 8, level the material using a "v"-shaped piece of cardboard or a special tool to remove any high spots of material in the saw cut. Avoid overfilling the saw cut as it may cause premature failure of the loop sealant.

ATTACHMENT 5 – TRAFFIC LIGHT INSTALLATION

- 1. Run Conduit up where Traffic Light will be located.
- 2. Pour concrete pad 16" W X 16" L X 24" D Square base is 13 ³/₄ inches X 13 ³/₄ inches.
- 3. You can make a mounting template by tracing the bottom of the square base on cardboard. This provides location where the anchor bolt holes can be drilled.



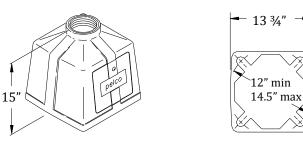


Figure 1, Traffic Light Pole Base

- 4. Use 1/2 inch X 5 ¹/₂ inch wedge anchor bolts (threaded on one end) to secure Square Base in place.
- 5. Place square base over the anchor bolts and shim base as necessary to make level. Remove the maintenance door cover on the base to allow access for securing base to anchor bolts. Secure base to bolts with 1/2 inch Nuts and 5/8 inch washers.
- 6. Pull wires for light through the top of the base
- 7. Run wires through the Traffic Light Pole and screw pole into the base.
- 8. Attach the Pedestal Adaptor to the Traffic Light Assembly.
- 9. Attach the Tunnel Visors to the traffic lights.
- 10. Run the wires into the traffic Light assembly through the Pedestal adaptor and mount the traffic light to the pole.
- 11. After securing the pedestal adaptor/traffic light assembly to the pole, terminate wires in the traffic light.



Figure 2, Traffic Light Configurations – 2 & 3 Lights

$ATTACHMENT\,6-COMMISSIONING\,CHECKLIST$

Typical Start-Up/Turn-Over Test Procedures - RSS-3000 Barrier System:

A. Visual Check

□ 1. Verify that all field wiring and cables are connected as per System Interconnect Drawings (From barrier junction boxes to BCP).

 \Box 2. Ensure that all terminal screws and cables are tight.

 \square 3. Ensure there are no loose or stripped wires.

 \Box 4. Ensure that all circuit breakers are turned OFF, and fuse holders are open.

 \Box 5. Ensure all loop detectors are securely plugged in the proper sockets.

B. Voltage and Phase Test: Normal Power (If no BBU skip to Step D)

 \Box 1. Verify the Customer Supplied Electrical Power to the RSSI automatic transfer switch CB1 (Located in the battery backup panel) should be 240VAC, between L1 and L2.

 \Box 2. Turn on main power circuit breaker, CB1. Contactor C1 should energize after approximately 8 seconds.

□ 3. Verify the 24 VDC at the DC input terminals on the inverter (should be approximately 24VDC).

□ 4. Turn on Inverter circuit breakers and the on-off switch (located on the top of inverter)

 \Box 5. Verify 240VAC on terminals at the top of CB2.

□ 6. Turn ON CB3

 \Box 7. Verify battery charger energizes (Red Power ON light is on) and the battery charging status meter indicates charging between 0 and 15 DC Amps.

 \square 8. Verify voltage at top of Main Disconnect (located in the barrier control panel) should be 240VAC between L1 to L2.

C. Battery Backup Power Check

 \square 1. Turn off CB1 in BBP.

a. Contactor C1 de-energizes and contactor C2 energizes (switches to Inverter power)

 \Box 2. Verify voltage at input of Main Disconnect (located in the control panel). Should be approximately 240VAC between L1 and L2. Ensure "Loss of Normal Power" alarm is present on Maint. Touch Screen.

 \Box 3. Re-check voltages at the bottom of 2L1 and 2L2 terminals in BBP, (245vac) Inverter power.

 \Box 4. Turn on CB1 in BBP, you will see that the Low Voltage Relay and TBR2 green lights come on, within 5 seconds you will see the red light start flashing on the voltage relay and within 4-6 seconds the amber light on the voltage relay will come on as the relay times in, green light on TBR1 will come on and C1 contactor will energize and pull in.

D. Barrier Operational Check: (Normal Power)

 \Box 1. Verify voltage at top of Main Disconnect (located in the barrier control panel) should be 240VAC between L1 to L2

 \Box 2. In the Control Panel, turn all circuit breakers off.

□ 3. Open Servo-Drive Fuse Holders.

□ 4. Turn on Main Disconnect.

□ 5. Close Servo-Drive Fuse Holder

□ 6. Turn-on ALL Circuit Breakers. Verify 24v Power Supply has green LED for Controls.

 \Box 7. Loop detectors green light should start blinking and blink a series of blinks three times. (Automatic tuning)

Ensure all metal objects are at least 3 feet away from the safety loops. Failure to do this may affect the operation of the safety loops if loop wires from roadway are plugged into the detectors during this step.

□ 8. Verify 24VDC power Supply voltage and status light is GREEN.

□ 9. Use Touch Screen inside Panel to Perform Barrier Setup (See setup guide Attachment 3).

 \square 10. Verify Operation of the Barriers.

E. Battery Backup Operational Check

□ 1. Turn off the Normal Power source, CB1 Main Power (Commercial)

□ 2. Contactor C1 de-energizes and contactor C2 energizes (switches to Inverter power)

- \Box 3. Verify operation of the barriers
- \Box 4. When complete, turn on Main Power (CB1).

F. Safety Loop Check

 \Box 1. Position a person at the RSSI Control Panel/Box and drive a vehicle slowly over the safety loops and the barriers. The RED LED (detects presence) will light as the vehicle travels over the safety loops and will turn off as the vehicle clears them.

 \Box 2. With the Barrier in the OPEN (up) position, pull a vehicle forward on the front edge of the front safety loop and stop. The LED indicator on the safety loop detector in the RSSI Control Panel/box should indicate RED (detects presence).

□ 3. Touch the "MOVE CLOSED" Icon on the Touch screen. Barrier should not operate.

 \Box 4. Back the vehicle off the safety loop. Touch the "MOVE CLOSED" Icon and as the barrier starts to lower pull the vehicle onto the front edge of the safety loop. The barrier should stop and raise to the OPEN position.

Ensure to use extreme caution when pulling the vehicle forward as the barrier is going down. Recommend placing wheel chocks to prevent vehicle from traveling under the barrier.

 \Box 5. With the Barrier in the OPEN (up) position, pull a vehicle forward to the rear edge of the back safety loop and stop. The LED indicator on the safety loop detector in the RSSI Control Panel/Box should indicate RED (detects presence).

□ 6. Press the "MOVE CLOSED" Icon, Barrier should not operate.

 \Box 7. Pull the vehicle off the safety loop. Touch the "MOVE CLOSED" Icon and as the barrier starts to lower Back up the vehicle onto the back edge of the safety loop. The barrier should stop and raise to the OPEN position.

G. Verify Approved Sequence of Operation

□ 1. Step by Step run through the approved sequence of operation for the appropriate gate

Verify that all of the above tasks have been completed and the barrier system is accepted.

Customer:

(Printed Name, Signature & Date)

RSSI Technician:

(Printed Name, Signature & Date)

NOTES: