

SG-400 Installation Digest

1. Introduction

This installation digest covers the most basic installation needs, geared towards simple lane layouts and limited requirements. If you need to install more complex lane layouts (with multiple I/O and/or loop environments) please refer to the SG-400 User's Manual.

This manual does not cover the installation of the loop. Please refer to the documentation provided with the loop and the SG-400 User's manual.

In this manual, chapters 2 to 7 cover the installation, from start to finish, and chapter 8 is dedicated to basic troubleshooting.

2. Open the Box

- Put the gate box vertical, with the correct side up, according to the graphics on the side of the box.
- Cut open the vertical lid, revealing a carton sheet that protects the side of the gate.



- Remove this side-protection sheet, and the other protection sheet on the top of the gate.



Accessory box

- Remove the accessory-box on the left side, slide the gate out of the box, and remove the plastic protection cover.

3. Verify all parts

The accessory-box should contain:

- A small plastic bag with 4 mounting bolts and door-key:



- The gate arm holder (only for barrier gates with flat gate-arm) with 4 bolts, washers and nuts:



- Two crossbars to fix the gate to the concrete:



4. Bolt Down the Gate

4.1. Install the Anchor Bolts

- Mount the anchor bolts that come with the gate in the concrete base where the SG-400 will be installed. The protruding bolts should form a square with 7" sides:



4.2. Open the Gate

- Open the main door of the gate, using the key that is supplied together with the mounting bolts:



- Remove the door, and set it aside for later.
- Remove the white internal panel by pressing on the red button to release the latch:



- Pull out the white panel from the top, and lay it down on the floor, keeping the bottom of the panel still inside the gate:



- Unplug the two connectors of the cable that goes up to the gate motor.
- Remove the white panel completely, and set it aside for later, while you secure the gate cabinet to the concrete.

4.3. Install the Crossbars

- Move the gate into position, over the wiring and the protruding bolts:



- Install the two crossbars over the bolts:



- If the holes do not line up, drill extra holes in the crossbars to match the protruding bolts.

- Add the washers and nuts, and tighten all four bolts:



5. Wire the gate

5.1. Install the White Internal Panel

- Insert the bottom of the white internal panel back into the gate, and lay it open on the floor:



5.2. Connect Power (120VAC)

- Connect the power lines to the breaker and grounding point:



5.3. Connect Loop(s)

- Remove the loop detector from the socket.

- In case of a 1-loop (gate-close loop) detector and wiring:
 → Verify that you have a PD131 loop detector:



→ Connect the twisted pair loop wires to pins 7&8 of the socket

- In case of a 2-loop (arming loop, gate-close loop) detector and wiring:
 → Verify that you have a PD231 loop detector:



→ Connect the twisted pair loop wires from the arming loop to pins 3&4 of the socket
 → Connect the twisted pair loop wires from the gate-close loop to pins 5&6 of the socket

- Typically, the dipswitches on the front of the detector could be set as follows

1	2	3	4	5	6	7	8
ON	ON	OFF	OFF	OFF	OFF	OFF	OFF

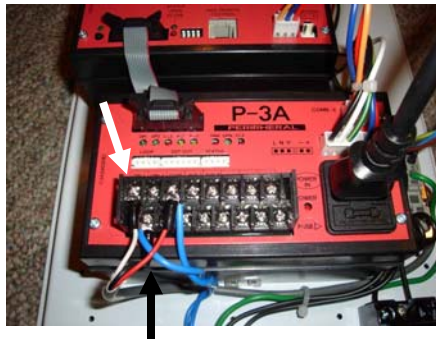
Sensitivity and frequency settings might have to be adjusted depending on site-specific conditions.

- Put the loop detector back into the socket.

5.4. Connect I/O Wiring

Assuming you have an external device (e.g. reader) that has an output to open the gate, connect the wires coming from the relay of that device to the terminal block on P-3A.

- Connect one lead to the screw labeled OPN2, and the other lead to the screw labeled COM:



5.5. Close the Gate

- Reconnect both connectors of the cable from the gate motor to the gate controller (C-3A):



- Close the inside white panel, and press the silver cylinder upwards until it latches:



- Insert the bottom hinge of the outside door into the cabinet, and close the main door of the gate, using the key that is supplied together with the mounting bolts:



6. Install the Gate Arm

6.1. Install the Arm Holder (only for flat gate arm)

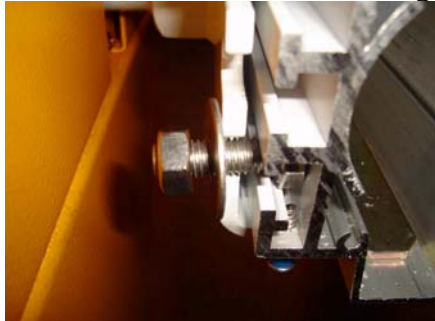
- Take the arm holder from the accessory-box:



- The arm holder will first be attached to the gate, and after that, the gate arm will slide into this arm holder.
- Pre-assemble the four arm holder bolts with washers and nuts:



- While holding the arm holder in place against the gate, slide the bolts one by one into the sleeves of the arm holder, and tighten each nut:



6.2. Install the Gate Arm to the Arm Holder (for Flat Arm)

- Remove the arm from its packaging by removing the staples on one side of the packing tube and removing the cap. Slide the arm out of the tube.

- Make sure that the screws on the bottom of the arm holder are loose:



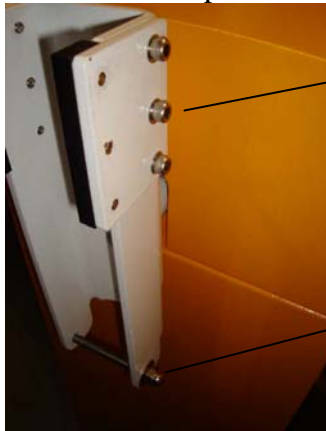
- Insert the gate arm gently into the arm holder, all the way, until the arm touches the back of the arm holder. Then, tighten the screws on the bottom of the arm holder to keep the arm fixed inside the arm holder:



- Gate Arm weight
The internal mechanism is designed to operate with the supplied gate arm (Length and weight):
DO NOT USE INSTALL A DIFFERENT GATE ARM
DO NOT ATTACH ANYTHING TO THE GATE ARM THAT AFFECTS ITS WEIGHT OR LENGTH

6.3. Install the Gate Arm to the Arm Holder (for Round Arm)

- Remove the arm from its packaging by removing the staples on one side of the packing tube and removing the cap. Gently slide the arm out of the tube.
- Remove the long screw and nut at the bottom of the arm holder and loosen the six small screws at the top of the arm holder:



Six small screws

Long screw & nut

- Remove the shrink-wrap material from the arm, and slide it into the holder, lining up the hole in the arm with the large screw holes
- Insert and tighten the long screw & nut at the bottom of the arm holder
- Tighten the 6 screws at the top of the arm holder

7. Testing

- Make sure all wiring is properly insulated and connected.
- Make sure the loop detector is in its socket.
- Make sure the arm can move freely up and down without hitting any obstruction.
- Make sure both connectors of the cable from the gate motor to the gate controller (C-3A) are connected:

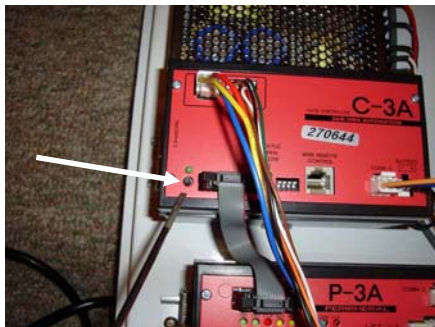


7.1. Power Test

- Activate the incoming power lines, and turn the breaker switch on.
→ The gate arm should slowly open (if it is not open already), remain open a second, and automatically slowly close.

7.2. Test Gate Arm Operation

- Press the black button on the C-3A controller once to make the gate open:



- The LED remains ON

- Press the black button on the C-3A controller again to make the gate close and resume normal operation (the LED on C-3A returns to blinking, indicating its return to normal operation).

7.3. Test Gate Close Loop and Other External Inputs

- Activate the relay of the external device (e.g. reader), and verify that the gate opens.
- Verify that the LED marked OPEN on the GC-45 controller lights up during this process:



- Move a large piece of metal or car over the loop to verify that the gate closes after the metal or car is removed from the loop.
- Verify that the LED marked CLOSE on the GC-45 controller lights up during this process:

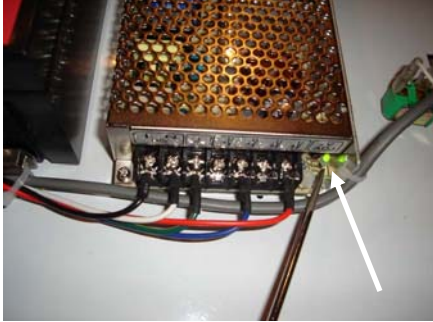


8. Troubleshooting

8.1. Incoming Power

If the above tests are not working as expected, and you think the power supply might be the culprit, please verify the following:

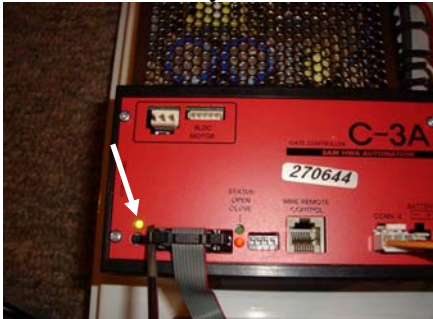
- The power led on the 24VDC power supply is permanently ON:



- The power led on P-3A is permanently ON:



- The led on C-3A should blink fast during start-up, turn off during the initial up-down cycle, and start a steady, continuous blink pattern, indicating the controller is operating normally:



8.2. I/O signals

If the gate arm is not operating as expected, please verify the following:

- The switch on the front of the white panel is in the center position:

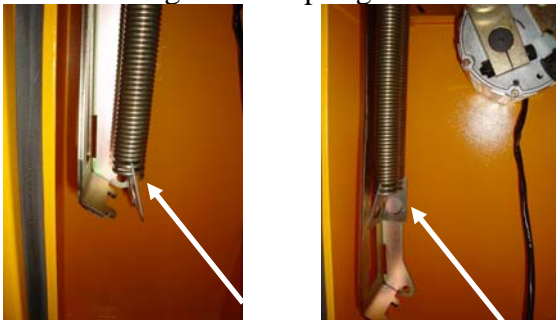


- The power LED on the loop detector is on, and OUTPUT (or CH1 and CH2 in case of two loops) LED's are OFF:



8.3. Testing without gate arm

If you would like to test the gate mechanism **WITHOUT** the gate arm attached, you need to make special adjustments to compensate for the lack of weight. This is done very easily by disconnecting the two springs from the bottom attachment, so they hang loose during testing:



Do **NOT** forget to re-attach the springs when operating the gate with the gate arm:

