

MCA-7 Installation Instructions

Introduction

It is necessary that prior to handling any electronics you must ground yourself to prevent a static electric surge from destroying the components. Static damage is NOT covered by the warranty. Ground yourself by grasping a well-grounded metal object.

There is enough wire and cable to mount the control box within 10 feet of the operator. For ease in installation and service, mount the box as close to eye level as possible. Mounting tabs are provided with the box.

Control Box Installation

Carefully remove the control box from the packaging. CHECK FOR DAMAGE.

Attach the plastic mounting tabs to the back of the box.

Locate a suitable surface and mount the box, being careful to avoid damaging the contents.

Carefully remove the electronics (GROUND YOURSELF FIRST) and place in a safe dry place.

Using a hole saw, locate and drill a hole for the control cables and loop home runs.

Attach and seal the conduit. It is critical that you seal the entry to prevent any moisture from entering the box, as moisture damage is not covered by the warranty.

Wire the board according to the wiring diagram. Be sure to use #12 wire for the motor leads to the secondary gate if it is a primary/secondary system.

Wiring Instructions

J-9 - Power Connector

This is the power - motor - limit switch connector.

Note: The pins, numbered from left to right are:

- 1-Battery Input Pos
- 2-Motor Output Neg
- 3-Motor Output Pos
- 4-Battery Input Neg
- 5-Motor Phase C (optional)
- 6-Open Limit N/O
- 7-Limit Switch Com
- 8-Limit Switch N/O

1. Connect the white wire from the battery's positive terminal to pin 1, far left on J-9.
2. Connect the black/white wire from the motor to pin 2 of J-9.
3. Connect the red/white wire from the motor to pin 3 of J-9
4. Connect the blue wire from the battery's negative terminal to pin 4 of J-9.
5. Pin 5 used for special applications - normally left open.
6. Connect the black wire from the limit switch 3-conductor from the actuator to pin 6 of J-9.
7. Connect the green wire from the limit switch 3-conductor from the actuator to pin 7 of J-9.
8. Connect the white wire from the limit switch 3-conductor wire from the actuator to pin 8 of J-9

J-4 - Gate Control Connector

△ Caution: All inputs are dry contact. NO power inputs are to be used. Power inputs will damage the board if connected. Damage to the board caused by connecting powered inputs will void the warranty.

1. These are the Go Open, Go Close, Stop controls that are triggered from the System Controller, Keypads, Emergency Entry Switches or Guard Shack.

2. The Open input is the entry control and uses pins 1 and 2 of J-4.
3. If an EVA gate is installed, connect the two leads from the Fire Emergency Box switch to pins 1 and 2 of J-4. Polarity is not important as this is a dry contact to return power to the gate operator board.

J-6 - Receiver and IR Beam Connector

1. The Radio Receiver input is pre-wired at the factor in pins 1 - 3 of J-6.
2. Any dry contact receiver rated at 12 VDC can be interfaced.
3. The IR Detector input connects on pins 4 - 6 on J-6.
4. Connect the brown wire (+12 VDC) to pin 4, the white wire (N/O) to pin 5 and the blue & yellow wire (COM) to pin 6 of J-6.

TIP: Two beam sets may be connected in parallel.

Separate Emitter/receiver systems are wired as follows:

Brown wire in +12 VDC

Blue wire in COM

White wire in N/O

J-8 - Entrapment Detector Connection

1. The entrapment detector connections are not normally used for most gate applications. They have been provided for special situations and future use.
2. Pins 1 -4 are used for proximity detection devices or other detectors and provide connections for Normally Open or Normally Closed device types.
3. Pins 5 and 6 are used to connect a Normally Closed primary entrapment device, i.e. beams, kickout switch, edge detector.
4. The J-8 plug comes pre-wired for a default setting with two jumper wires from pin 3 to pin 4 for the Secondary Entrapment/Proximity Detector input and from pin 5 to pin 6 for the Primary Entrapment Detector input.

△ Caution: The gate will short cycle and go into alarm fail mode if this connector is left off. You must then push the Reset button to get the gate to function with these jumper connections or other device connections.

J-3 Mag Lock

The exit loop trigger wires to open input J-4

The safety trigger wires to J6 (IR Det)

△ Caution: The loops **MUST** be wired in series, where one end of each of the loops is connected together. The other end of each loop is connected to J-3. If more than two loops are involved, the additional loops are connected in line. This effectively makes one loop containing all of the smaller loops.

1. Safety loops are connected to pins 1 and 2 of J-3.
2. If there is a free exit loop, it is connected in pins 3 and 4 of J-3.
 1. Pins 5 and 6 of J-3 are for controlling a solenoid latch or mag lock. They can also operate an external relay to control warning lights, etc. Max output is 6amps @ 12 VDC.

Installing the External Loop Detector

1. Exit wired to Open Input J-4
2. Safety wired to J6 with IR

J-11 Connector

This connector contains 2 spare positions which are not used unless indicated in special instructions. It also contains, in positions 5 and 6, an output for an external annunciator per UL325 requirements. This would normally be a 100DB piezo electric annunciator mounted, either through the control box or the operator front channel.

J-10 Connector

This connector contains both the tachometer connections and the external reset for restarting the gate when it goes into fault per UL325 requirements.

Connect the tachometer cable from the actuator as follows

- 1 - 12V to Red Wire
- 2 - Tach signal to Black Wire
- 3 - COM to shield
- 4 - Not Used

Connect the external reset - a dry contact N/O pushbutton to 5 and 6

J-5 Connector

This connector is used only for brushless DC motor applications and is otherwise left blank.

J-7 Connector

This connector is for the ribbon connector that attaches the secondary board for primary/secondary applications.

J-12, J13, J14 Connectors. These connectors are not for field use.

VertiGateTM

Prepare to Apply Power for the First Time

Check the wiring again, making sure that the battery polarity is correct at motor connector. Now connect power to the board by plugging in the motor connector at J9.

The board should power up and the LCD should display the sign-on message

Set Parameters on SPEED MENU

Below are the standard settings - preset at VertiGate.

Set HI VEL to 85

Set LO VEL to 45

Set ACCEL to 2.0

Set DECEL to 3.0

Set Parameters on TIMER MENU

Set AUTOCLOSE SEC to 10

Set REVERSE SEC to 2

Set ILIM DLY SEC to 2.0

Set Parameters on SETUP MENU

Set CONTRAST % to 30.0

Set LOBATT LIM: to 11.8

Set AUTOCLOSE to ENA

Set PRIMARY GATE to ENA

Set PRIMARY FRICTION to 5.0

Set PRIMARY MASS to 3.0

Set SECONDARY GATE to ENA (if secondary gate is present)

Set SECONDARY FRICTION to 5.0 (if secondary gate is present)

Set S SECONDARY MASS to 3.0 (if secondary gate is present)

Set RCVR MODE: to S/S/R

Set EXIT LOOP to OFF

Set SAFETY LOOP to OFF

Set RCVR ON: to ALWAYS

Set LOCK = to OFF if no lock present

Set LOCK = to SOLENOID if solenoid type lock present
Set LOCK = to MAG_LOCK if magnetic lock present.

Warning: if the MAG_LOCK setting is used with a solenoid, the solenoid will be destroyed and the controller board may be damaged. Be sure that the difference between and solenoid and a magnetic lock is clearly understood. The magnetic lock is designed for continuous duty service and holds the gate closed magnetically. The solenoid lock is designed for intermittent duty and is active only when the gate is moving near the closed position or when moving and learning its travel range.

Adjust the Limit Switches on Primary Gate

Adjust Closed Limit

Using the TEST pushbutton, move the gate away from the closed position so that the gate is stopped with a gap between the gate and the saddle. Adjust the closed limit switch until the primary CLOSE LIMIT LED on the controller board is illuminated.

Move the gate away from the closed limit and then allow the gate to close by finding the closed limit and stopping.

Repeatedly, adjust the closed limit position and then test the stopping point of the gate until the gate gently stops in the saddle. Do NOT set the limit so that the gate overdrives into the saddle; nuisance tripping of the obstruction detection circuit may result.

Adjust Open Limit

The open limit adjustment was done at VertiGate but the operation should be verified. Allow the gate to open fully then make sure that the OPEN LIMIT LED is on.

If the gate has trouble moving away from the fully open position, adjust the open limit switch so that the gate stops further away from the fully open position.

Adjust the Limit Switches on Secondary Gate (if Present)

Disable Primary Gate

Enable Secondary Gate

Adjust Closed Limit

Using the TEST pushbutton, move the gate away from the closed position so that the gate is stopped with a gap between the gate and the saddle. Adjust the closed limit switch until the primary CLOSE LIMIT LED on the controller board is illuminated.

Move the gate away from the closed limit and then allow the gate to close by finding the closed limit and stopping.

Repeatedly, adjust the closed limit position and then test the stopping point of the gate until the gate gently stops in the saddle. Do NOT set the limit so that the gate overdrives into the saddle; nuisance tripping of the obstruction detection TM circuit may result.

Adjust Open Limit

The open limit adjustment was done at the VertiGate but the operation should be verified. Allow the gate to open fully then make sure that the OPEN LIMIT LED is on.

If the gate has trouble moving away from the fully open position, adjust the open limit switch so that the gate stops further away from the fully open position.

Final System Configuration

If Secondary Gate is Present, Re-Enable Primary Gate

Enable AUTOCLOSE if Desired

Set AUTOCLOSE SEC to Desired Delay

Enable SAFETY LOOP if Present

Enable EXIT LOOP if Present

Set RCVR MODE to Desired Condition

Set RCVR ON to Desired Condition