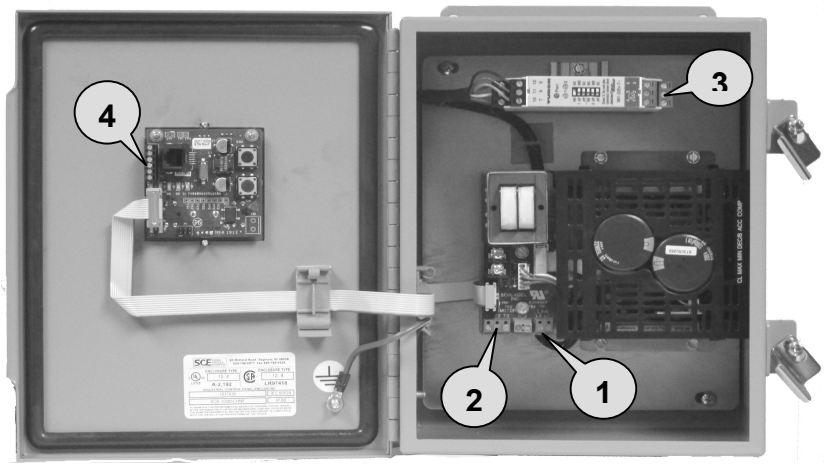
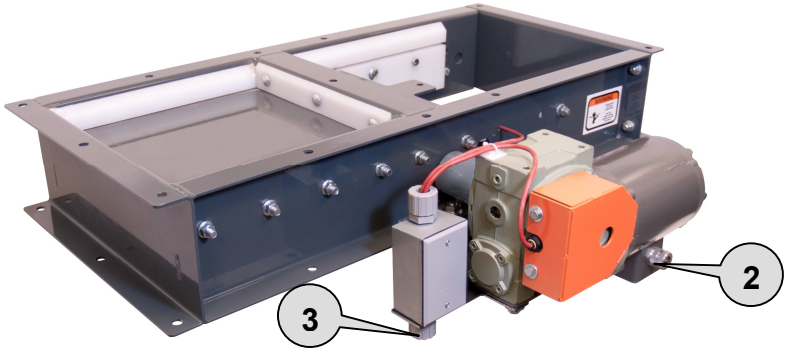
# VGC-3 GATE CONTROL
# CONDENSED WIRING INSTRUCTIONS




| Callout | Wiring Instructions - See Warning on Page 4. | | | |
|---|---|---|---|---|
| **1** | Power supply to control terminals **L1, L2**: 120 VAC, 1 phase, 10 Amp | | | |
| **2** | Power from control terminals **T1, T2, T3** to gate motor. 230 VAC, 3 phase, 2 Amp Motor must be configured for 230 VAC. Motor rotation is automatically corrected during gate configuration. Maximum run length is 200 ft. | | | |
| **3** | **Sensors to Barrier Relay connections** | | | |
| | **Sensor 1 (Gate Closed)** | | **Sensor 2 (Target Wheel)** | |
| | Brown to Terminal **1** or **2** | Blue to Terminal **4** | Brown to Terminal **1** or **2** | Blue to Terminal **5** |
| | Use 4 wire 26 ga. or heaver wire. Shielded wire is not required. Cat 5 wire is most commonly used. Do not run with power wiring. Observe Intrinsically Safe routing procedures. Maximum run length is 1000 ft. | | | |
| **4** | UIO connections for automation. See UIO manual if automation is used. | | | |

## CHECK WIRING, GATE OPERATION AND CONFIGURE THE GATE

**NOTE** Please contact our technical support staff if you are not allowed to operate the gate because material is in the bin or other special curcumstances prevent normal operation. Mannual operation can be temporarly configured until the gate can be fully accessed.

A further explanation of the following steps can be found on Page 3.

### Preliminary Wiring Check

This will check most of the sensor wiring and Barrier Relay connections.

1. Make sure the gate is fully closed.
2. Apply power to the control.
3. Confirm that the switches on the barrier relay are all set to the right except the top switch is set left.
4. There should be no red light on the barrier relay.
5. LED 1 on the barrier relay should be lit yellow.
6. The LED on the VGC control should be green.

You cannot complete a successful installation unless all of the above conditions are met.

### Check Motor/Gate Operation.

This checks the motor, power wiring and mechanical movement of the gate.
Do not continue this installation unless you can safely operate the gate.

At the control the display should read:[1]

→ = MANUAL
← = LEARN

7. Press → to put the gate in manual mode.
8. Now, confirm that when pressing the ← or → keys, the motor moves the gate back and forth.

### Gate Configuration

Begin the final routine to check the rest of the sensor wiring and adjustments as well as gather motor rotation and gate travel information.

9. Press and release the RESET key, then press ← to select LEARN MODE and finally press the OPEN key to begin the automatic configuration of the control to the gate.

During this sequence, the control will determine the rotation of the motor and the length of travel of the gate. It also checks the sensors for proper operation. Error messages will attempt to define the cause of any error and then abort the LEARN mode.

[1] If the VGC was previously programmed these selections may not be shown. To force the VGC control to show them press and hold RESET and MENU keys. Release Reset then release MENU. Return to Step 7.

Upon successful completion the gate is ready to use as is or be otherwise customized. Page 4 describes some of the custom features. See the VGC-3 Operator's Manual for details.

| Step | Explanation |
|---|---|
| 1 | Having the gate closed verifies the Gate Closed sensor is activated and is wired properly. This is doubled-checked in Step 5. If you are unable to close the gate at this time, you can go directly to Step 7 and 8. From there you can close the gate and return to this Step 1. |
| 2 | Make sure any site disconnect switches etc. are closed so the motor will be ready to operate. |
| 3 | These are factory preset and it is imperative that they are in the described position. |
| 4 | Any red LED on the barrier relay indicates there is an open, short or reversed polarity of the connected sensor. |
| 5 | See the discussion in Step 1 above. The yellow LED 1 indicates the Close Sensor is indicating the gate is closed.<br>At this point the status of LED 2 is unimportant as long as it is not red. |
| 6 | The LED at the top of the VGC control is multi-colored. When it is green it confirms that the gate is fully closed. If it is off or red there is a problem with the close sensor wiring or adjustment. |
| 7 | Manual mode temporarily enables the ← or → keys on the VGC control to be used as momentary Fwd and Rev buttons to run the motor driving the gate open or closed |
| 8 | The control does not yet know the motor rotation so someone must observe the gate as it moves according to the key pressed. |
| 9 | Any errors encountered during this routine will be displayed on-screen and the routine will abort requiring a reset. Errors are defined in two different categories: wiring and mechanical.<br>Wiring errors are most commonly related to:<br>• Wrong connections of the four sensor wires<br>• The motor is wired for 460 volts instead of 230 volts<br>• The sensor wires are run with the motor wiring<br>Mechanical errors include:<br>• Close sensor adjustment<br>• Shaft sensor adjustment<br>• Drive clutch adjustment<br>• Physical interference with full allowable gate movement. |

| **FIELD CUSTOMIZING FEATURES** - See VGC-3 Operator's Manual for details. | |
|---|---|
| Gate Name | A custom gate name up to 9 characters long can be entered to display on the top line replacing the default 'VGC GATE' name. |
| Operation | **Variable.** The default operation. The gate may be opened between 0% and 100% as set by the ← or → keys. |
| | **Open-Close**. The gate does not allow for positioning anywhere between 0 and 100%, effectively eliminating the use of the ← or → keys on the control. Commonly used on 2-way valves or intermediate discharges on conveyors. |
| | **Relay Mode.** Allows hard-wiring a light duty SPST contact (e.g. relay or switch) from a remote source to open and close the gate. The open position is variable and is set by the ← or → keys. |
| Network | By setting the address and connecting to a UIO, the VGC can be fully controlled or just monitored by a PLC. When the PLC has control, the operational keys on the VGC (OPEN, ← and →) are locked out. The display is not affected. |
| Manual Mode | Manual Mode enables the ← or → keys on the VGC control to temporally be used as momentary Fwd and Rev buttons to run the motor, driving the gate open or closed.<br>Some errors, like a gate jam, default to manual mode so the operator can assist in clearing the jam. |
| Service | Allows setting basic machine data normally obtained during the LEARN routine to be entered manually. This is helpful when the user wants to limit the maximum opening of the gate or when the LEARN routine can't be used because the gate can't be allowed to move at this time. |
| AutoRun | Turning on AutoRun starts the gate randomly moving to new positions for as long as the gate is powered or the user presses any key. Used for testing long term error free operation. |

**⚠ WARNING**

**Failure to comply with the wiring instructions in this document could lead to improper operation, equipment damage or serious injury or death.**

**The VGC control should only be installed and wired by a licensed electrician. Make sure the wiring meets all applicable regulations and codes including local and national standards and codes.**

**High voltage can kill or seriously injure personnel. All installation and maintenance personnel must be trained and follow the proper Lockout/Tagout procedures established by the facility management.**

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