

### **APPLICATION REQUIREMENTS:**

Model FDCL operator with charge circuit board incorporating firmware versions 06-FDCL-500.

### **FUNCTION:**

Replacement of the logic board in an FDCL.

### **WARNING**

To prevent possible **SERIOUS INJURY** or **DEATH** from electrocution or fire, **BEFORE** proceeding:

- Disconnect AC power at the fuse box.
- Disconnect DC power at the battery connection.

## INSTALLATION INSTRUCTIONS

### **REMOVE AC AND DC POWER**

1. Disconnect AC power to the operator.
2. Open operator cover.
3. Remove DC power by disconnecting the battery connection.

### **REMOVE EXISTING BOARD**

1. Match replacement logic board dip switch settings to the current logic board. Refer to page 7, if needed.
2. Reference page 2 for mechanical assembly details. Remove all the ends of the wires connected to the existing board and neatly lay them over the side of the electrical box. Leave jumper wires located on the board connected until new logic board wiring.
3. Remove the nylon nuts (7) holding the logic board to the electrical box and hold for reassembly of new board.
4. Remove the screw holding the heat sink to the electrical box and hold for reassembly of new board.
5. Remove logic board from the box, leaving the existing standoffs in place.

### **INSTALL NEW BOARD**

1. Install the new logic board in the electrical box using the old standoffs. Be sure to install in the same configuration as it was removed.
2. Secure logic board in place with the nylon nuts (7) removed in step 3.
3. Secure the heat sink to the electrical box with the screw removed in step 4.

**NOTE:** For any additional help, refer to assembly drawing on page 2.

### **LOGIC BOARD WIRING**

#### **1 PHASE OPERATORS**

Follow wiring directions on page 3, for additional help refer to the wiring diagram on page 4.

#### **3 PHASE OPERATORS**

Follow wiring directions on page 5, for additional help refer to the wiring diagram on page 6.

### **PROGRAM SETTINGS**

Follow instructions on page 7 for optional control settings.

### **CONTROL CONNECTIONS**

Follow instructions on page 8 for optional control settings.

### **HOW TO ORDER REPAIR PARTS**

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Installation and service information  
are available 6 days a week

Call our TOLL FREE number:

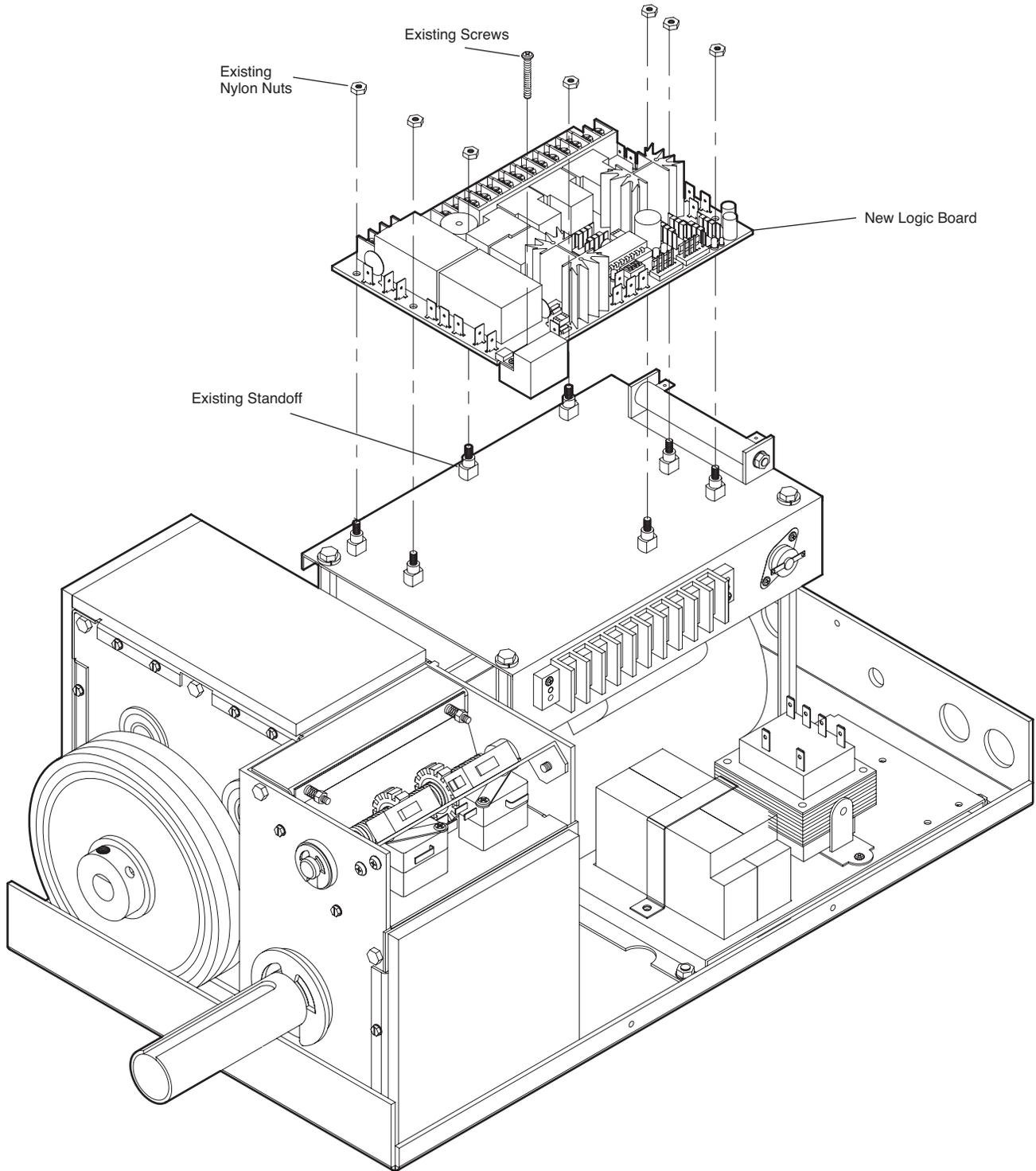
**1-800-528-2806**

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Saturday 7 a.m. to 7:30 p.m. (MST)

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# LOGIC BOARD REPLACEMENT ASSEMBLY



# SINGLE PHASE WIRING

**NOTE:** For additional help with wiring, refer to the wiring diagram on next page.

## EXISTING WIRES

### JUMPER WIRES

**NOTE:** Remove jumpers from original board and install them on new logic board as follows.

1. Reconnect the original blue wire from pin **J18** to pin **J12**.
2. Reconnect the original yellow wire from pin **J23** to pin **J22**.
3. Reconnect the original black wire from pin **J21** to pin **J20**.
4. Reconnect the original black wire from pin **J24** to pin **J25**.
5. Reconnect the original brown wire that runs from **#16** to **#23** on the **J2 TERMINAL BLOCK**.

### TRANSFORMER

1. Reconnect the original black wire that runs from the transformer to pin **J20**.
2. Reconnect the original white wire that runs from the primary on the transformer to pin **J27**.

### BRAKE

1. Reconnect the original white wire that runs from the brake to pin **J17**.
2. Reconnect the original white wire that runs from the brake to pin **J16**.

### LOAD RESISTOR

Reconnect the original black wire that runs from the resistor pin **J30**.

### TERMINAL BLOCK TB1

1. Reconnect the original brown wire that runs from **#3** of **TB1** to **J9**.
2. Reconnect the original brown wire that runs from **#4** of **TB1** to **J8**.
3. Reconnect the original red wire that runs from **#2** of **TB1** through the inline fuse to **J12**.
4. Reconnect the original black wire that runs from **#1** of **TB1** to the **J2 terminal block #15**.
5. Reconnect the original black wire that runs from **#6** of **TB1** to the **J2 terminal block #16**.
6. Reconnect the original black wire that runs from **#5** of **TB1** through the thermal sensor to the **J2 terminal block #3**.

### LIMIT SWITCHES

Reconnect the original limit harness to the 4 pin terminal on the board marked **J3 LIMIT SWITCH**.

### BATTERY

Reconnect the original black wire that runs from the battery negative terminal to **J14**.

### MOTOR

**NOTE:** Steps 1 and 2 affect motor run direction.

1. Reconnect the original grey wire from the motor to pin where it was removed from either **J6** or **J7**.
2. Reconnect the original purple wire from the motor to pin where it was removed from either **J6** or **J7**.
3. Reconnect the original yellow wire from the motor to pin **J5**.
4. Reconnect the original blue wire from the motor to pin **J28**.

### OVERLOAD

1. Reconnect one of the original black wires from the overload to pin **J27**.
2. Reconnect one of the original black wires from the overload to pin **J26**.

### CHARGER BOARD

1. Reconnect the original black wire from the **J6** charger terminal to **J15** on the logic board.
2. Reconnect the original white wire from the **J1** charger terminal to **#13** on the logic board **J2 TERMINAL BLOCK**.
3. Reconnect the original white wire from the **J2** charger terminal to **#14** on the logic board **J2 TERMINAL BLOCK**.
4. Reconnect the original blue wire from the **J7** charger terminal to **J19** on the logic board.
5. Reconnect the original red wire from the **J4** charger terminal to **J13** on the logic board.

**NOTE:** For pushbuttons, sensing devices, power wiring and other additional options, refer to the wiring diagram on next page.

### INFRARED SENSOR AND BATTERY INDICATORS

1. Reconnect the original white/black wire to **J2 terminal block #1**.
2. Reconnect the original white wire to **J2 terminal block #2**.
3. Reconnect the low battery indicator original white wire to **J2 terminal block #15** and the red wire to **J2 terminal block #24**.

### SYSTEM TEST

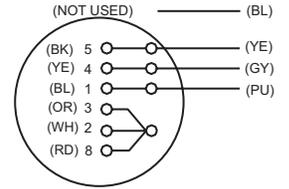
1. Restore AC and reconnect DC power.
2. Allow the system to stabilize. The alarm may sound for the first minute. The alarm should remain off after 3 minutes.
3. Verify the OPEN, CLOSE, STOP buttons operate correctly.
4. Verify the safety edge and eyes operate correctly, if appropriate.
5. Verify the alarm functionality by initiating a Key-Test.

# SINGLE PHASE WIRING DIAGRAM

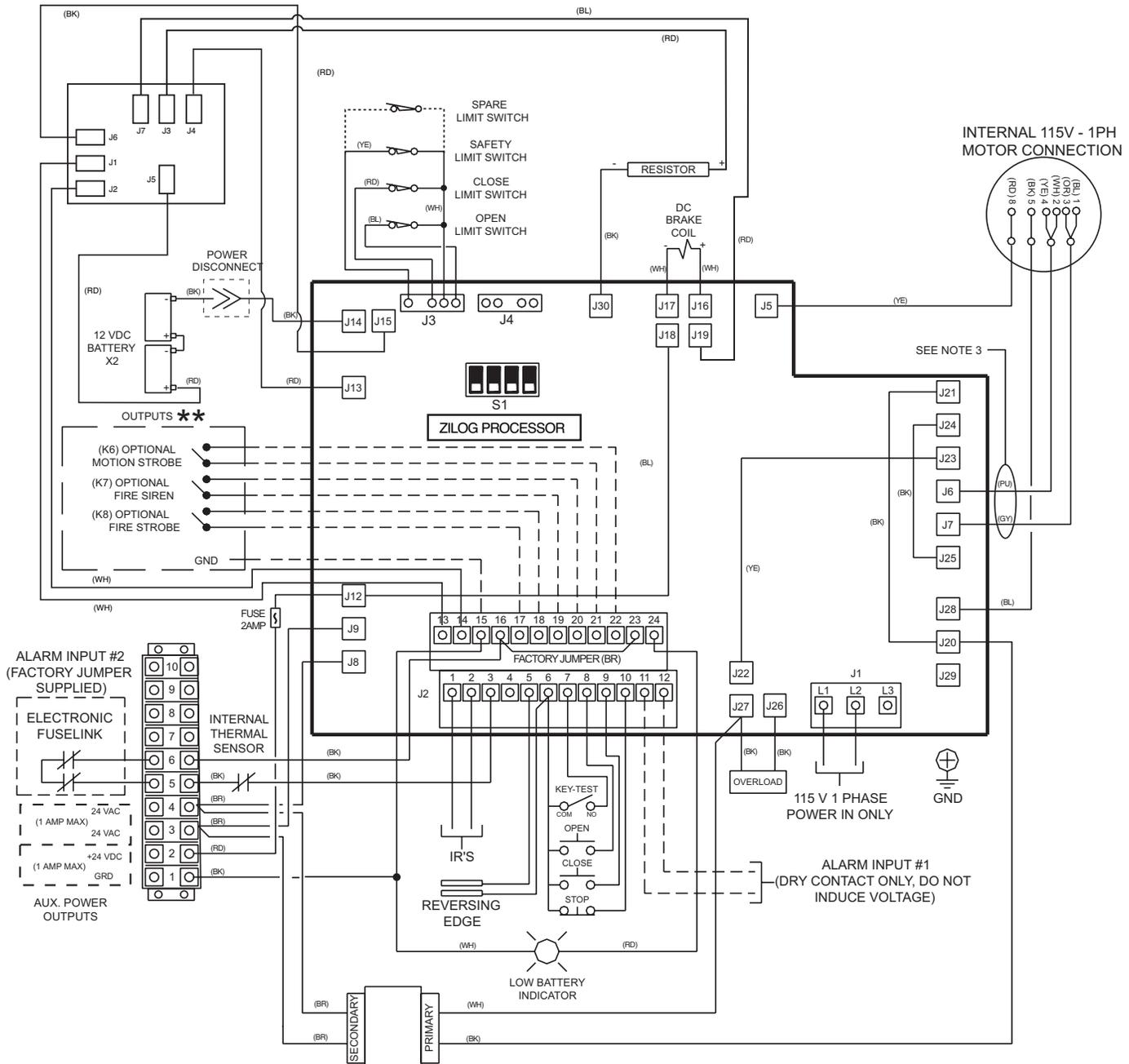
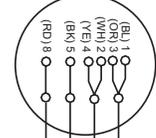
## NOTES:

1. See Owner's Manual for Dip Switch Functions and Programming Procedures.
2. Connections shown in dotted boundaries are optional user interface.
  - (K7, K8) are normally open dry contacts which are programmed to close on any alarm signal.
  - (K6) is a normally open dry contact which is programmed to close when the door is in motion or inhibited during a gravity close.
3. To reverse motor direction, reverse purple and gray motor wires at J6 and J7 on the logic board.

## INTERNAL 230V - 1PH MOTOR CONNECTION



## INTERNAL 115V - 1PH MOTOR CONNECTION



# THREE PHASE WIRING

**NOTE:** For additional help with wiring, refer to the wiring diagram on next page.

## EXISTING WIRES

### JUMPER WIRES

**NOTE:** Remove jumpers from original board and install them on new logic board as follows.

1. Reconnect the original blue wire from pin **J18** to pin **J12**.
2. Reconnect the original black wire from pin **J27** to pin **J26**.
3. Reconnect the original brown wire that runs from **#16** to **#23** on the **J2 TERMINAL BLOCK**.
4. Reconnect the original black wire that runs from **J24** to **J29**.
5. Reconnect the original yellow wire that runs from **J21** to **J22**.
6. Reconnect the original black wire that runs from **J20** to **J25**.

### TRANSFORMER

1. Reconnect the original black wire that runs from the primary on the transformer to **J25**.
2. Reconnect the original white wire that runs from the primary on the transformer to **J22**.

### LOAD RESISTOR

Reconnect the original black wire that runs from the resistor pin **J30**.

### BRAKE

1. Reconnect the original white wire that runs from the brake to pin **J17**.
2. Reconnect the original white wire that runs from the brake to pin **J16**.

### CHARGER BOARD

1. Reconnect the original black wire from the **J6** charger terminal to **J15** on the logic board.
2. Reconnect the original white wire from the **J1** charger terminal to **#13** on the logic board **J2 TERMINAL BLOCK**.
3. Reconnect the original white wire from the **J2** charger terminal to **#14** on the logic board **J2 TERMINAL BLOCK**.
4. Reconnect the original blue wire from the **J7** charger terminal to **J19** on the logic board.
5. Reconnect the original red wire from the **J4** charger terminal to **J13** on the logic board.

### INFRARED SENSOR AND BATTERY INDICATORS

1. Reconnect the original white/black wire to **J2 terminal block #1**.
2. Reconnect the original white wire to **J2 terminal block #2**.
3. Reconnect the low battery indicator original white wire to **J2 terminal block #15** and the red wire to **J2 terminal block #24**.

### LIMIT SWITCHES

Reconnect the original limit harness to the 4 pin terminal on the board marked **J3 LIMIT SWITCH**.

### MOTOR

**NOTE:** Steps 1 and 2 affect motor run direction.

1. Reconnect the original grey wire from the motor to pin where it was removed from either **J6** or **J7**.
2. Reconnect the original purple wire from the motor to pin where it was removed from either **J6** or **J7**.
3. Reconnect the original yellow wire from the motor to pin **J5**.

**NOTE:** For pushbuttons, sensing devices, power wiring and other additional options, refer to the wiring diagram on next page.

### TERMINAL BLOCK TB1

1. Reconnect the original brown wire that runs from **#3 of TB1** to **J9**.
2. Reconnect the original brown wire that runs from **#4 of TB1** to **J8**.
3. Reconnect the original red wire that runs from **#2 of TB1** through the inline fuse to **J12**.
4. Reconnect the original black wire that runs from **#1 of TB1** to the **J2 terminal block #15**.
5. Reconnect the original black wire that runs from **#6 of TB1** to the **J2 terminal block #16**.
6. Reconnect the original black wire that runs from **#5 of TB1** through the thermal sensor to the **J2 terminal block #3**.

### BATTERY

Reconnect the original black wire from the battery through the power disconnect to pin **J14**.

### SYSTEM TEST

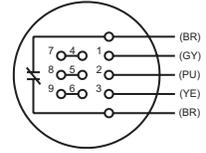
1. Restore AC and reconnect DC power.
2. Allow the system to stabilize. The alarm may sound for the first minute. The alarm should remain off after 3 minutes.
3. Verify the OPEN, CLOSE, STOP buttons operate correctly.
4. Verify the safety edge and eyes operate correctly, if appropriate.
5. Verify the alarm functionality by initiating a Key-Test.

# THREE PHASE WIRING DIAGRAM

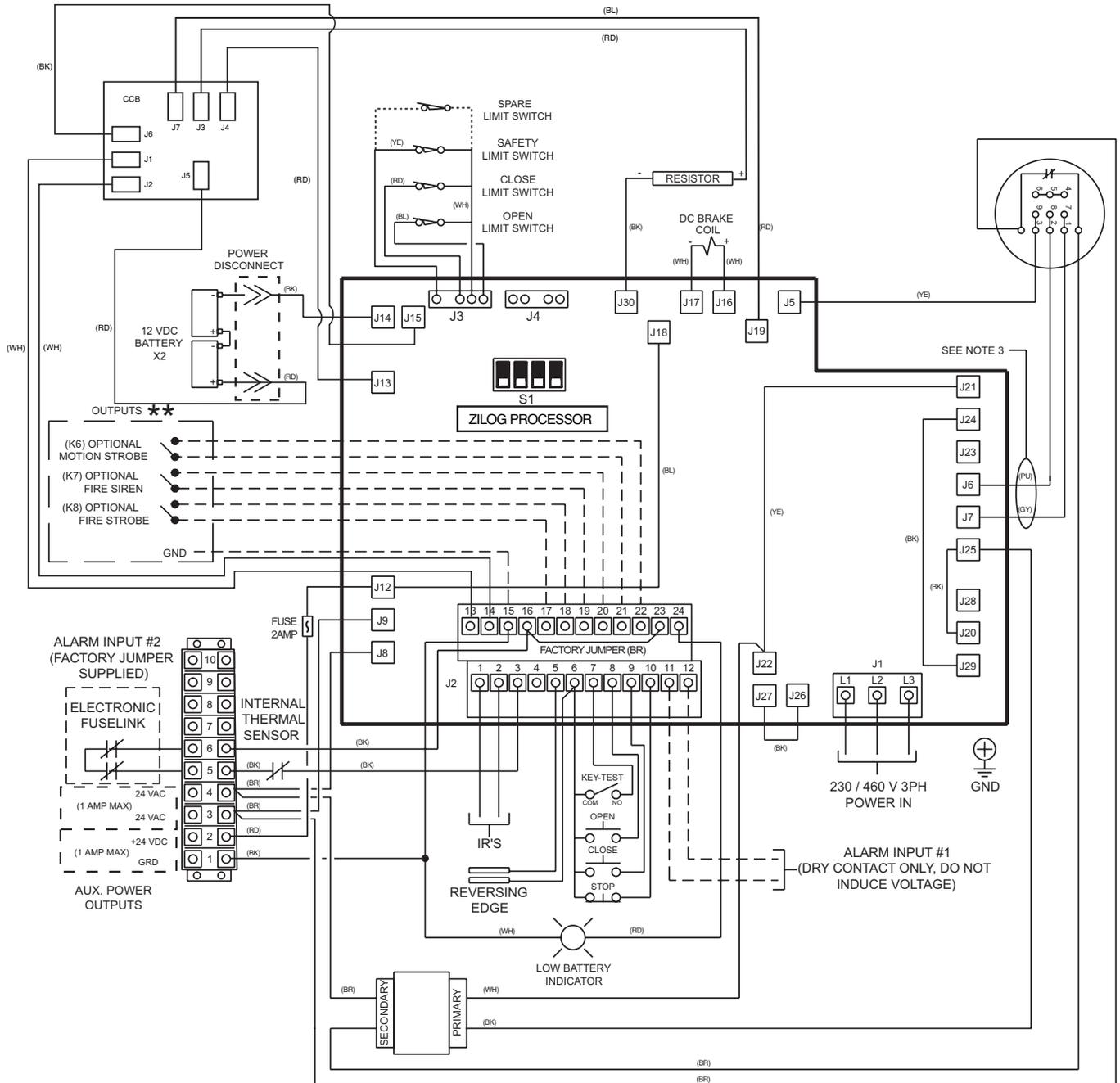
## NOTES:

- Place a jumper between J2-3 and J2-6 when 24 tooth door sprocket is used.
- See Owner's Manual for Dip Switch Functions and Programming Procedures.
- To reverse motor direction, reverse purple and gray motor wires.
- For B2 wiring, remove one end of jumper from J2-3 and connect to J2-16.

INTERNAL 460V - 3 PH  
MOTOR CONNECTION



INTERNAL 230V - 3 PH  
MOTOR CONNECTION



# OPTIONAL CONTROL SETTINGS

## OPTIONAL CONTROL SETTINGS

**NOTE:** All functions are independent of each other and do not require other control settings to be set at any certain configuration. For dip switch location refer to illustration below. All switches are factory preset to the "OFF" position.

### SI-1 ALARM DELAY TO CLOSE

Alarm Delay to Close is the time between when the operator first receives an active alarm signal and the door starts to close (in seconds).

### SI-4 INFRARED EYES STATE

The operator will support LiftMaster Infrared Safety Photo Eyes when enabled, and ignore IR inputs when disabled.

## INSTALLER CONTROL SETTINGS

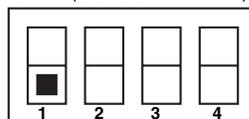
### SI-2 MODE

The factory default for the operator is standard Fire Door Mode Type I (OFF). Setting S1-2 to the (ON) position selects the Fire Door Mode Type II. When Fire Door Mode Type I is selected, the control station is in the standard B2 wiring, momentary contact to open, close and stop. When Fire Door Mode Type II is selected, the control station is in the revised C2 wiring, momentary contact to open and stop, constant pressure to close with no open override. In addition, when Fire Door Mode Type II is selected, the door will Gravity Close (governed descent) on alarm.

### SI-3 ALARM STATE

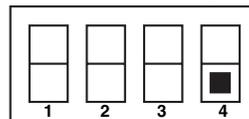
The operator can accept either a normally open or normally closed dry contact alarm input. **DO NOT INDUCE VOLTAGE!**

**ON** (0 SECOND DELAY)



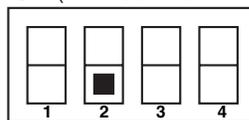
**OFF** (10 SECOND DELAY)

**ON** (IR'S ENABLED)



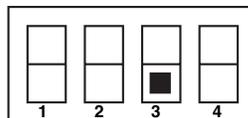
**OFF** (IR'S DISABLED)

**ON** (FIRE DOOR MODE TYPE II)

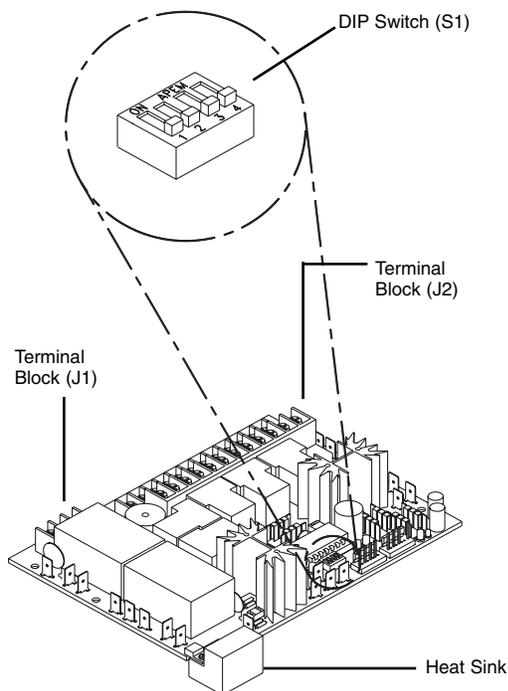


**OFF** (FIRE DOOR MODE TYPE I)

**ON** (N.C. ALARM)



**OFF** (N.O. ALARM)



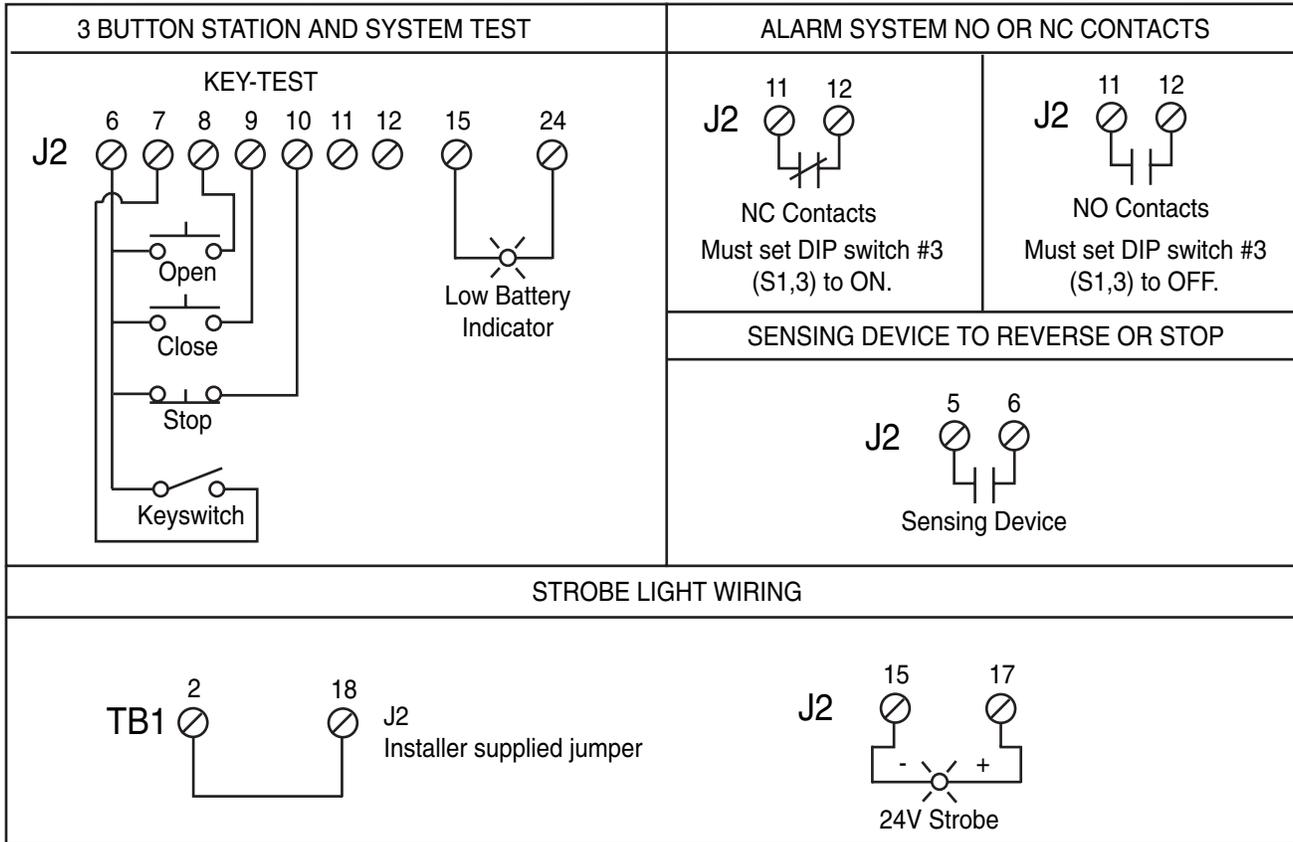
### NOTICE:

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

# CONTROL CONNECTION DIAGRAM

**IMPORTANT NOTE:**

The 3-Button Control Station provided must be connected for operation.



**IMPORTANT:** All inputs must be contact only! This includes: Alarm Inputs, Control Inputs, Sensing Edges and Sensing Devices. For any other devices not mentioned, please consult the factory.