UNITEC®

UT-ID 22.17.1-3

UNITEC Otis Glide® A
Startup Manual

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All jobsite work activities must comply with applicable Otis Safety Policies and local regulatory requirements. If you are unsure of the requirements, please stop work immediately and consult your supervisor or EH&S.

As part of the Glide A installation process, it is required to turn off/on mainline power. When turning off mainline power:

- Lock out and tag out the mainline disconnect.
- Test and verify that all three legs of the mainline are de-energized by measuring line-to-line and line-to-ground voltage.

Table of Contents

1 Description

This document covers only the electrical configuration and setup portion of the installation of the Otis Glide® A door operator (p/n AAA24450AE). For mechanical installation of the door operator components, refer to UT-ID 22.17.1-2.

Hardware/Software Version: This manual is applicable to door operator controller KAA24360ABX with software version KAA31770AAA or later.

Read this document carefully and follow all procedures and safety precautions to ensure proper equipment operation. Associates carrying out the installation should perform a JHA to familiarize themselves with the work environment and the task at hand. Hazards may include high voltage, moving the elevator on car-top inspection, low overheads, and running elevators and counterweights. Keep this manual with the equipment for future reference.

2 Job Step Summary

- Review this document in its entirety
- Perform a JHA
- Gather tools, materials, and documentation
- Startup Survey
- Wire up the Glide A controller
- Set up the Glide A controller
- Conduct power-up checks
- Set configuration parameters
- Perform a Learn Run
- Exercise doors
- Conduct system checks

Complete all mechanical installation and adjustment steps described in UT-ID 22.17.1-2 prior to Glide A electrical setup and startup.

3 Tools and Materials

Table 1: Tools and Materials

☐	Personal Protective Equipment (PPE)	☐	Wago Insertion Tools (AAA27EF11, EF16)
☐	Multimeter, Fluke Model 177 (MT-122066-11)	☐	Ferrule Crimp Tool (AAA27EF9)
☐	Task Lighting w/ Extension Cord	☐	Door Wedge Tool (MT-114390-9)
☐	Lock and Tag Kit	☐	Mechanic's Hand Tools
☐	Glide A Electrical Interface Kit (AAA24430AP_)	☐	UT-ID 22.17.1-2, Glide A Mechanical Installation Guide
		☐	Controller Contract Wiring Diagram

4 Startup Survey

To set up the Otis Glide® A controller, you will need to know information listed in the table below. This information can be obtained from the Modernization Package Engineering Specification, car controller MCSS installation parameters, system wiring diagrams, and/or by inspection.

Item	**Circle One**		
Door Type:	C/O	SS	2-S
Doors are left-hand or right-hand? (C/O doors have which door panel driven?) *(While standing in the car, doors open which way?)*	LH	RH	
Car controller to Glide A controller communication interface type:	Multidrop	Discrete	
DISCRETE:			
For discrete applications, is **H**eavy **H**all **D**oor (**HHD**) input provided on your old door operator?	Yes	No	
MULTIDROP			
For multidrop applications, **Front** or **Rear** opening:	Front	Rear	
For multidrop applications, the baud rate used. 9600 is the most common baud rate. 19200 baud rate is typically used for double deck with 3, or more, door operators:	9600	19200	
If multidrop, does this car have load weighing?	Yes	No	
If you have load weighing, type and number of load sensors:	Load Cells	LVDT	Rope Sensor
Is this a double-deck car?	Yes	No	
If double-deck using multidrop, this is the **Upper** or **Lower** deck?	Upper Deck	Lower Deck	

Two associates are required to setup the Glide A controller. One associate is needed to run the elevator using car top inspection and operate switches on the Glide A controller.

General system requirements to set up a Glide A:

- The elevator must be able to run on Car Top Inspection.
- A car controller hoistway Learn Run is not required.
- Door "Safe-to-Open" is not required for multidrop communication

5 Controller Description

The Otis Glide® A (see Figure 1) is a microprocessor-based, closed-loop-control door operator. Mounted on top of the elevator cab or attached to the car header pocket, the Otis Glide® A door operator uses a single AC permanent-magnet motor to drive a belt attached to the elevator doors or hangers. Chief features of the Glide A are:

- Closed loop control over position and velocity

- All electronics, including load weighing, contained on a single circuit board
- Automatic Learn Run provides optimum open/close motion profile.
- All door operator electrical components factory wired.
- Two-button Learn Run feature
- On board error code display.

The Glide A factory wiring diagram is shown in Figure 2. Figure 3 shows the control board layout. Table 2 through Table 4 provide a description of control board switches, indicators, and connectors.

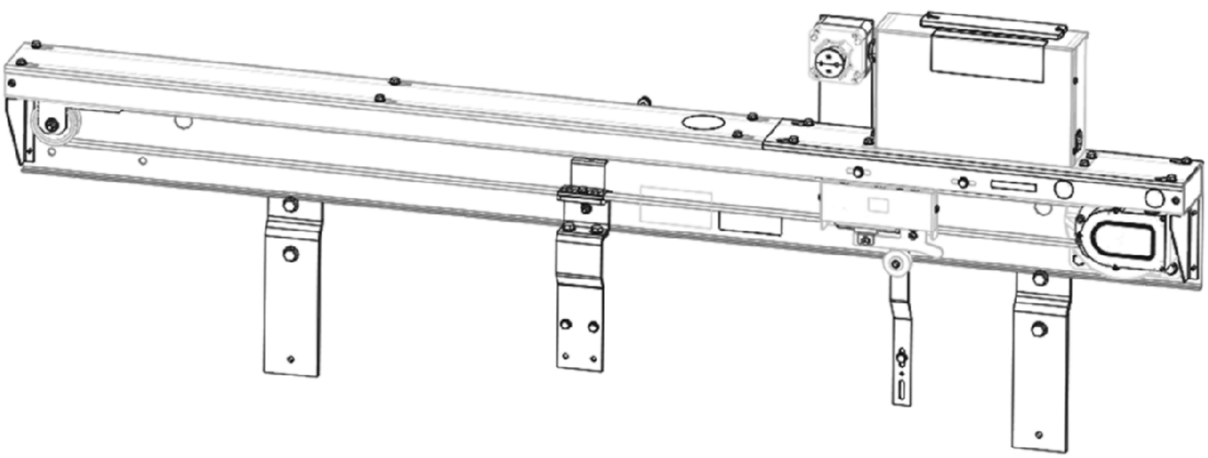


Figure 1: Glide A Door Operator

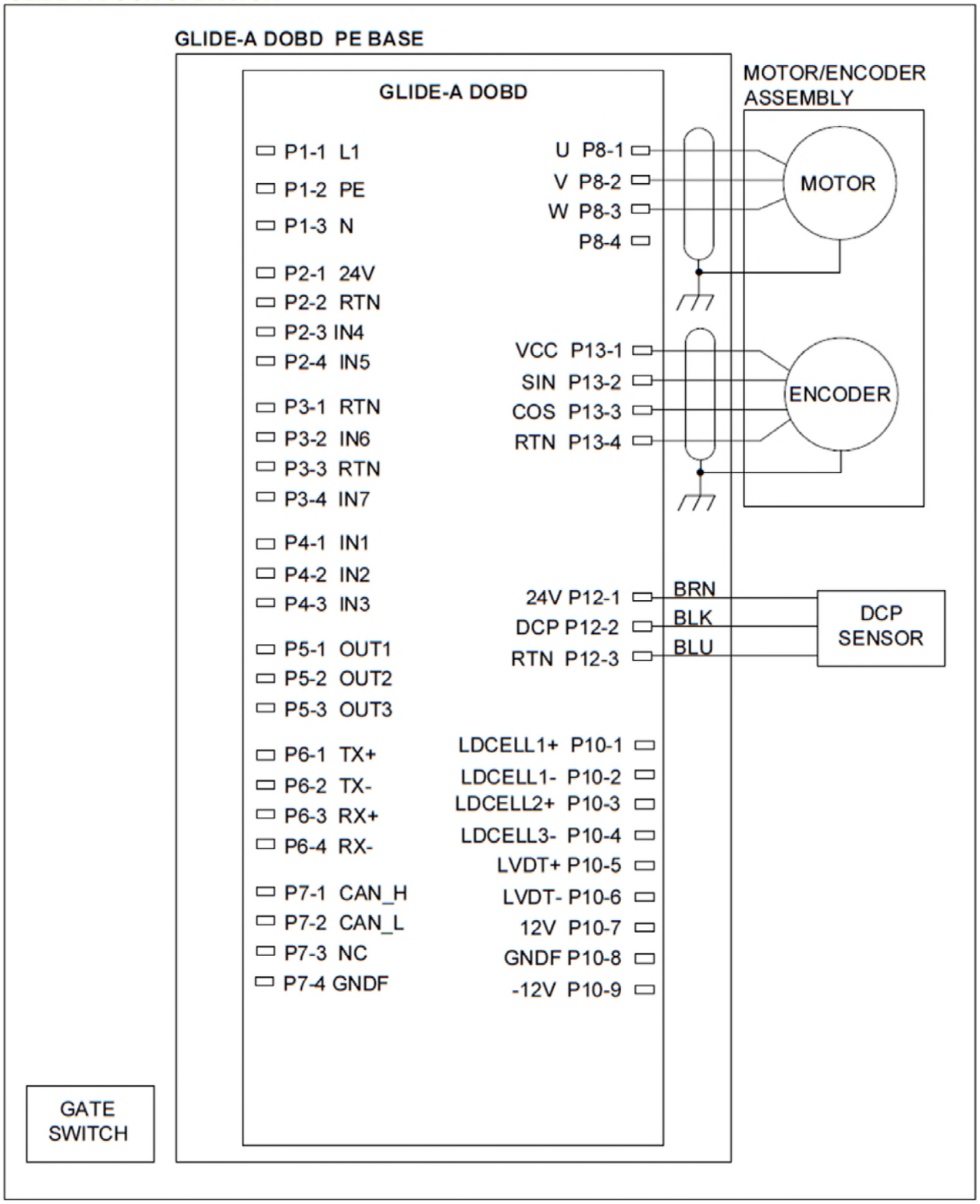


***Figure 2:** Glide A Factory Wiring Diagram*

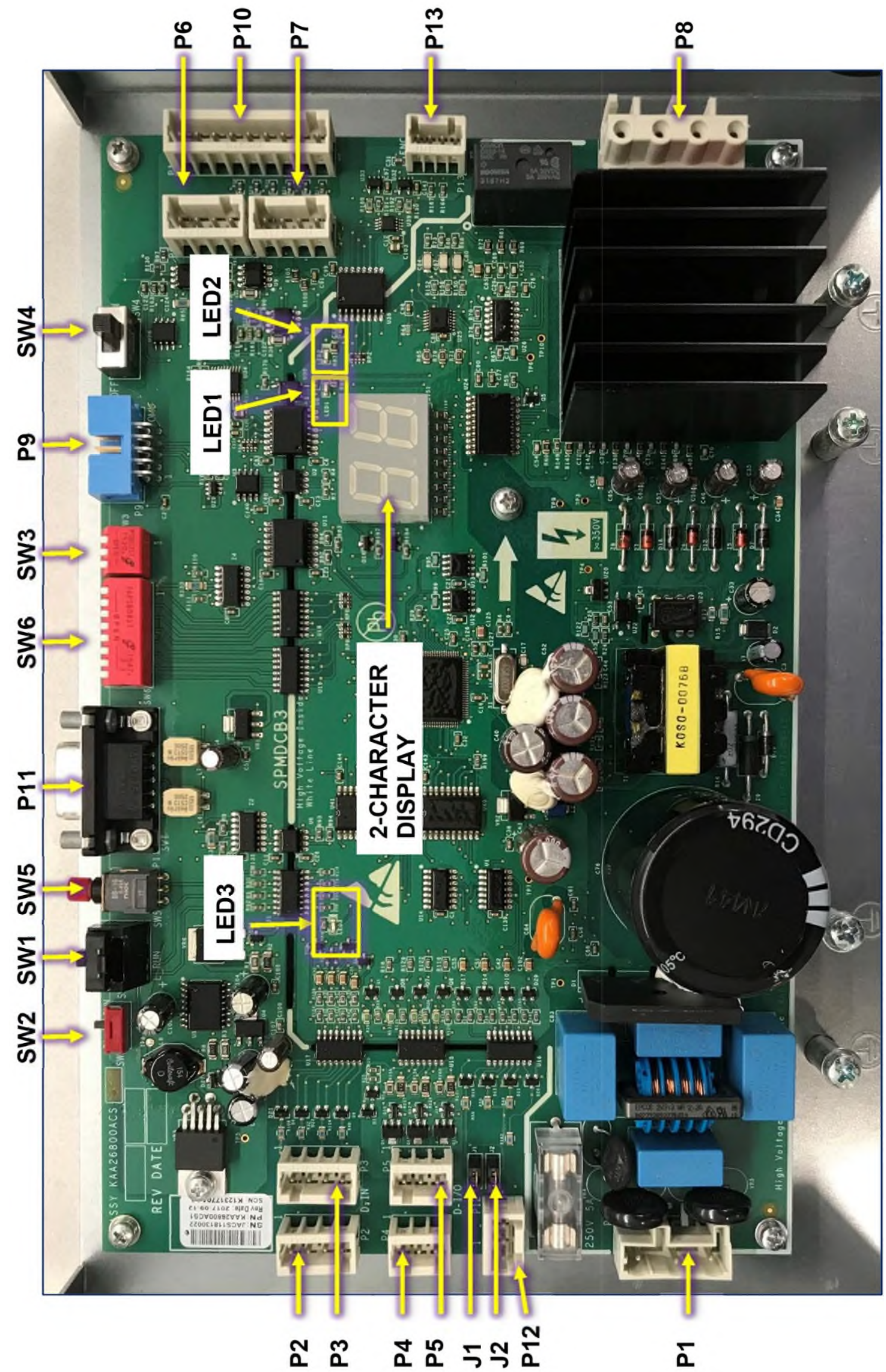


Figure 3: ***Glide A Control Board (shown mounted within enclosure)***

Table 2: Description of Control Board Switches (See section 7.3 to use service-tool-free method of saving dipswitch settings to memory.)

<table>
<tr><th>Item</th><th>Name</th><th>Function</th></tr>
<tr><td>SW1</td><td>Learn Run Switch</td><td>
<table>
<tr><th>Position</th><th>Function</th></tr>
<tr><td>PUSHED/HELD IN</td><td>Press and hold for three seconds to initiate Learn Run. This requires that the local operation switch SW5 is pushed in.</td></tr>
<tr><td>RELEASED</td><td>Normal Operation.</td></tr>
</table>
</td></tr>
<tr><td>SW2</td><td>Download Switch</td><td>
<table>
<tr><th>Position</th><th>Function</th></tr>
<tr><td>DL (towards the left of switch)</td><td>Enables baseline or parameter download from OMU</td></tr>
<tr><td>RUN (towards the right of switch)</td><td>Software download from OMU disabled. Switch to RUN position for normal operation.</td></tr>
</table>
</td></tr>
<tr><td>SW3</td><td>Termination and Data Capture Switch</td><td>
3-Segment Dipswitch (described right to left):
<table>
<tr><th>Segment</th><th>Position</th><th>Function</th></tr>
<tr><td rowspan="2">1 – CAN Termination</td><td>CLOSE/ON</td><td>CAN terminator enabled.</td></tr>
<tr><td>OPEN/OFF</td><td>CAN terminator disabled.</td></tr>
<tr><td rowspan="2">2 – Multidrop Termination</td><td>CLOSE/ON</td><td>Multidrop 120 ohm terminator enabled.</td></tr>
<tr><td>OPEN/OFF</td><td>Multidrop 120 ohm terminator disabled.</td></tr>
<tr><td rowspan="2">3 – Data Capture</td><td>CLOSE/ON</td><td>Enables data capture (for engineering use).</td></tr>
<tr><td>OPEN/OFF</td><td>Normal operation.</td></tr>
</table>
NOTES:

Segment 1 is the right most segment of this DIP SW when looking at the switch. This segment is the closest to the OMU port, P9.
Segment is set to OPEN/OFF when it is moved towards the OPEN mark on the switch body.

</td></tr>
<tr><td>SW4</td><td>Motor Brake</td><td>
<table>
<tr><th>Position</th><th>Function</th></tr>
<tr><td>OFF</td><td>Doors can move freely when pushed manually. This requires that the local operation switch SW5 is pushed in.</td></tr>
<tr><td>ON</td><td>Prevents the doors from drifting when the door motors are de-energized or Glide A power is off.</td></tr>
</table>
Set switch ON for normal operation.
</td></tr>
</table>

Table 2: Description of Control Board Switches (continued) (See section 7.3 to use service-tool-free method of saving dipswitch settings to memory.

<table>
<tr><th>Item</th><th>Name</th><th>Function</th></tr>
<tr><td>SW5</td><td>Local Switch</td><td>
<table>
<tr><th>Position</th><th>Function</th></tr>
<tr><td>OFF
(pulled out)</td><td>Disables Local Mode Operation. Disable Local Mode for normal, automatic operation.</td></tr>
<tr><td>ON (pushed in)</td><td>Enables Local Mode Operation. Used to configure, set up, perform Learn Run and operate doors from direct SVT connection. Car controller commands are ignored in local operation.</td></tr>
</table>
</td></tr>
<tr><td>SW6</td><td>System Configuration Switch</td><td>
<table>
<tr><th>Segment 1</th><th>Segment 2</th><th>Function</th></tr>
<tr><td>OPEN/OFF</td><td>OPEN/OFF</td><td>1 LVDT</td></tr>
<tr><td>OPEN/OFF</td><td>CLOSE/ON</td><td>Board uses internally generated fixed 2.5VDC test voltage (can be used to troubleshoot the unit).</td></tr>
<tr><td>CLOSE/ON</td><td>OPEN/OFF</td><td>1 Load Cell</td></tr>
<tr><td>CLOSE/ON</td><td>CLOSE/ON</td><td>2 Load Cells / Rope Sensor</td></tr>
</table>
<table>
<tr><th>Segment 3</th><th>Segment 4</th><th>Function</th></tr>
<tr><td>OPEN/OFF</td><td>OPEN/OFF</td><td>Center Opening</td></tr>
<tr><td>OPEN/OFF</td><td>CLOSE/ON</td><td>Side Slide</td></tr>
<tr><td>CLOSE/ON</td><td>OPEN/OFF</td><td>Two Speed</td></tr>
<tr><td>CLOSE/ON</td><td>CLOSE/ON</td><td>N/A</td></tr>
</table>
<table>
<tr><th>Segment 5</th><th>Segment 6</th><th>Function</th></tr>
<tr><td>OPEN/OFF</td><td>OPEN/OFF</td><td>CAN</td></tr>
<tr><td>OPEN/OFF</td><td>CLOSE/ON</td><td>Multidrop</td></tr>
<tr><td>CLOSE/ON</td><td>OPEN/OFF</td><td>Discrete</td></tr>
<tr><td>CLOSE/ON</td><td>CLOSE/ON</td><td>N/A</td></tr>
</table>
<table>
<tr><th>Segment 7</th><th>Function</th></tr>
<tr><td>OPEN/OFF</td><td>MOD Door Profiles (used for MOD and Open Order installations)</td></tr>
<tr><td>CLOSE/ON</td><td>NEB Door Profiles</td></tr>
</table>
<table>
<tr><th>Segment 8</th><th>Function</th></tr>
<tr><td>OPEN/OFF</td><td>Load Weighing Enabled</td></tr>
<tr><td>CLOSE/ON</td><td>Load Weighing Disabled</td></tr>
</table>
NOTES:

Segment 1 is the right most segment of this DIP SW when looking at the switch. This segment is the closes to the SW3.
Segment is set to OPEN/OFF when it is moved towards the OPEN mark on the switch body.

</td></tr>
</table>

Table 3: Description of Control Board LEDs

Item	Name	Description
LED1	Status (yellow)	Heartbeat and event status indicator. LED1 Flashing (100 ms on, 100 ms off): System normal and without Fault Events. LED2 Flashing (800 ms on, 800 ms off for fault ID, followed by 2.5 second off): Fault Event(s) logged.
LED2	Local Switch/Learn Run (Red)	LED2 ON: Local Switch, SW5 is ON and system is in Local Operation mode. LED2 OFF: Local Switch, SW5 is OFF and system is in Normal Operation mode. LED2 Flashing (400ms on, 400ms off): Learn Run in progress via 2-button sequence (non-Service Tool method).
LED3	Power (Red)	Glide A Mainline Power status indicator. LED1 ON: Power ON LED1 OFF: Power OFF.

Table 4: Description of Control Board Connectors

<table>
<tr><th>Item</th><th>Name</th><th>Description</th></tr>
<tr><td>P1</td><td>Input AC Power</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>220VAC L1 INPUT (LINE)</td></tr><tr><td>2</td><td>PE</td></tr><tr><td>3</td><td>220VAC L2 INPUT (NEUTRAL)</td></tr></table></td></tr>
<tr><td>P2</td><td>24VDC Discrete Inputs</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>24VDC</td></tr><tr><td>2</td><td>24VDC RETURN</td></tr><tr><td>3</td><td>IN4 (EDP for multidrop)</td></tr><tr><td>4</td><td>IN5 (Not used)</td></tr></table></td></tr>
<tr><td>P3</td><td rowspan="2">24VDC Discrete Inputs</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>24VDC</td></tr><tr><td>2</td><td>IN6 (CDBP for multidrop, HHD for discrete)</td></tr><tr><td>3</td><td>24VDC RETURN</td></tr><tr><td>4</td><td>IN7 (not used)</td></tr></table></td></tr>
<tr><td>P4</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>IN1 (DOB for multidrop, /DO for discrete)</td></tr><tr><td>2</td><td>IN2 (Not used for multidrop, /DC for discrete)</td></tr><tr><td>3</td><td>IN3 (/SO for multidrop, /NDG for discrete)</td></tr></table></td></tr>
</table>

Table 4: Description of Control Board Connectors (continued)

<table>
<tr><th>Item</th><th>Name</th><th>Description</th></tr>
<tr><td>P5</td><td>24VDC Discrete Outputs</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>OUT1 (Not used)</td></tr><tr><td>2</td><td>OUT2 (/DOL for multidrop and discrete)</td></tr><tr><td>3</td><td>OUT3 (Not used for multidrop, /DCL for discrete)</td></tr></table></td></tr>
<tr><td>P6</td><td>Multidrop Communication Signals</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>TX+ (to car controller RX+ or RXA)</td></tr><tr><td>2</td><td>TX- (to car controller RX- or RXB)</td></tr><tr><td>3</td><td>RX+ (to car controller TX+ or TXA)</td></tr><tr><td>4</td><td>RX- (to car controller TX+ or TXB)</td></tr></table></td></tr>
<tr><td>P7</td><td>CAN Communication Signals</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>CANH</td></tr><tr><td>2</td><td>CANL</td></tr><tr><td>3</td><td>No Connect</td></tr><tr><td>4</td><td>Ground</td></tr></table>
NOTE: CAN operation not covered in this document.</td></tr>
<tr><td>P8</td><td>Motor Connections</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>U (to motor U lead)</td></tr><tr><td>2</td><td>V (to motor V lead)</td></tr><tr><td>3</td><td>W (to motor W lead)</td></tr></table></td></tr>
<tr><td>P9</td><td>OMU Connector</td><td>Used for OMU operations.</td></tr>
<tr><td>P10</td><td>Load Weighing Connector</td><td><table><tr><th>Pin</th><th>Connection</th></tr><tr><td>1</td><td>LDCELL1+ (to load cell 1 positive lead)</td></tr><tr><td>2</td><td>LDCELL1- (to load cell 1 negative lead)</td></tr><tr><td>3</td><td>LDCELL2+ (to load cell 2 positive lead)</td></tr><tr><td>4</td><td>LDCELL2- (to load cell 2 negative lead)</td></tr><tr><td>5</td><td>LVDT+ (to LVDT positive lead)</td></tr><tr><td>6</td><td>LVDT- (to LVDT negative lead)</td></tr><tr><td>7</td><td>12VDC (power for load cells and LVDT)</td></tr><tr><td>8</td><td>Ground (ground/reference for load cells)</td></tr><tr><td>9</td><td>-12VDC (reference for LVDT in conjunction with 12VDC to obtain 24VDC)</td></tr></table></td></tr>
<tr><td>P11</td><td>Service Tool Connector</td><td>Used for Service Tool operations.</td></tr>
</table>

6 Electrical Installation

Wiring of the Glide A door operator should be performed using the job specific wiring diagram. If the Glide A controller has already been wired, skip to section 7; otherwise use the procedure outlined below to wire the Glide A controller.

1. Position the car at a suitable height for easy access to the Glide A controller.
2. Turn off mainline power. **Lock out, tag out, and test and verify.**
3. Block the hoistway doors open.
4. Verify that the top-of-car RUN/STOP switch is in the STOP position and the car top inspection switch is in the INSPECTION position.
5. Install barricades to prevent unauthorized personnel from entering the work area.
6. Move in the required tools and materials.

Follow appropriate safety procedures for accessing the car top as needed.

7. Run conduit and pull wires:

   a. **For Modernization applications:** Use the contract wiring diagram and the door controller field wiring diagram to wire the door operator controller. Figure 5 and Figure 6 may be used as guides to determine point-to-point connections between the car controller and the Glide A control box.

   b. **For Open Order applications:** Use the car controller wiring diagram along with sample wiring diagrams from UT-ID 22.17.1-4. Figure 5 and Figure 6 may be used as guides to determine point-to-point connections between the car controller and the Glide A control box.

- Run the 220 VAC power wiring in a separate conduit to the Glide A control box.
- Ensure there is a good PE bond between the Glide A control box and door operator lintel. Use internal/external “star” washers for a good connection.

8. **Grounding:** Connect 18 AWG ground wires to bond the Glide A controller and door operator as indicated below. Connect the ground wires to the operator lintel using an existing screw and internal/external star washer for good connection.

From	To
Glide A Controller PE	Door Operator Lintel
Door Operator Lintel	Cab Ground Bus

9. **Reversal device:** For multidrop communication systems, the reversal device signal is a direct input to the Glide A. The reversal signal is active high for non-obstruction, i.e. 24VDC must be present at this signal to indicate that there is no obstruction. If the reversal signal is not connected, the EDP signal (Elevator Door Protection) will not be high thus indicating obstruction to the Glide-A.

   Connect the EDP signal to P2-3 on the Glide-A controller (see Figure 5).

10. **Shielded Conductor Wiring:** For multidrop communication systems, terminate the communication wire shields as shown on the contract wiring diagram or the field wiring diagrams shown in Figure 5. Keep the unshielded portion of conductors to the shortest length possible; the unshielded length should be no more than 3 inches long. If the shield is to be connected to a PE terminal and PE is several inches away from the signal terminations, butt splice a length of ground wire to extend the shield as shown in Figure 4.

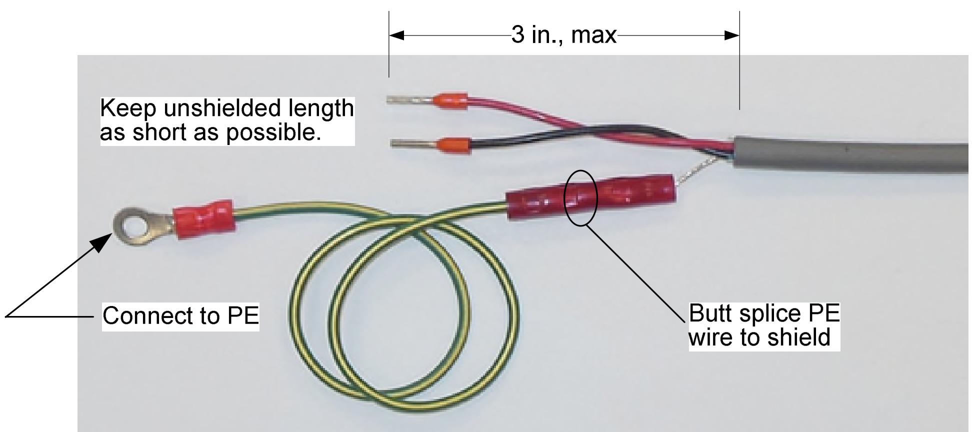


Figure 4: ***Method to connect a shield to PE***

11. Before applying power, remove any debris from the control box; inspect for metal chips, nuts, screws, washers, loose wires, and any other items that could affect operation.
12. Disconnect plugs P1 (power) and P2 (24 VDC) from the Glide control board.
13. Verify that all other plugs are fully inserted into their respective sockets and proceed to the next section.

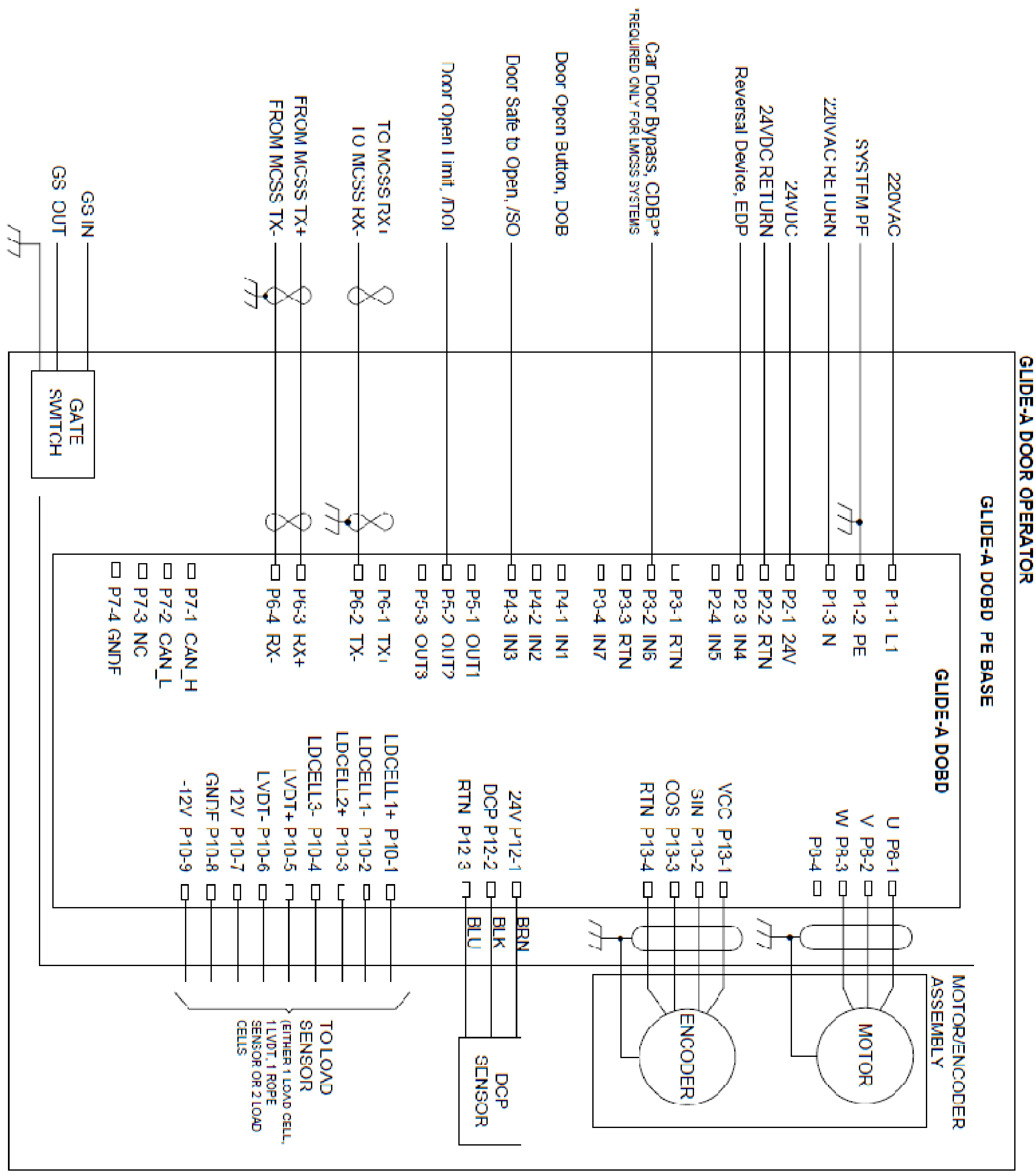


Figure 5: ***Glide A Field Wiring with Multidrop Communication***

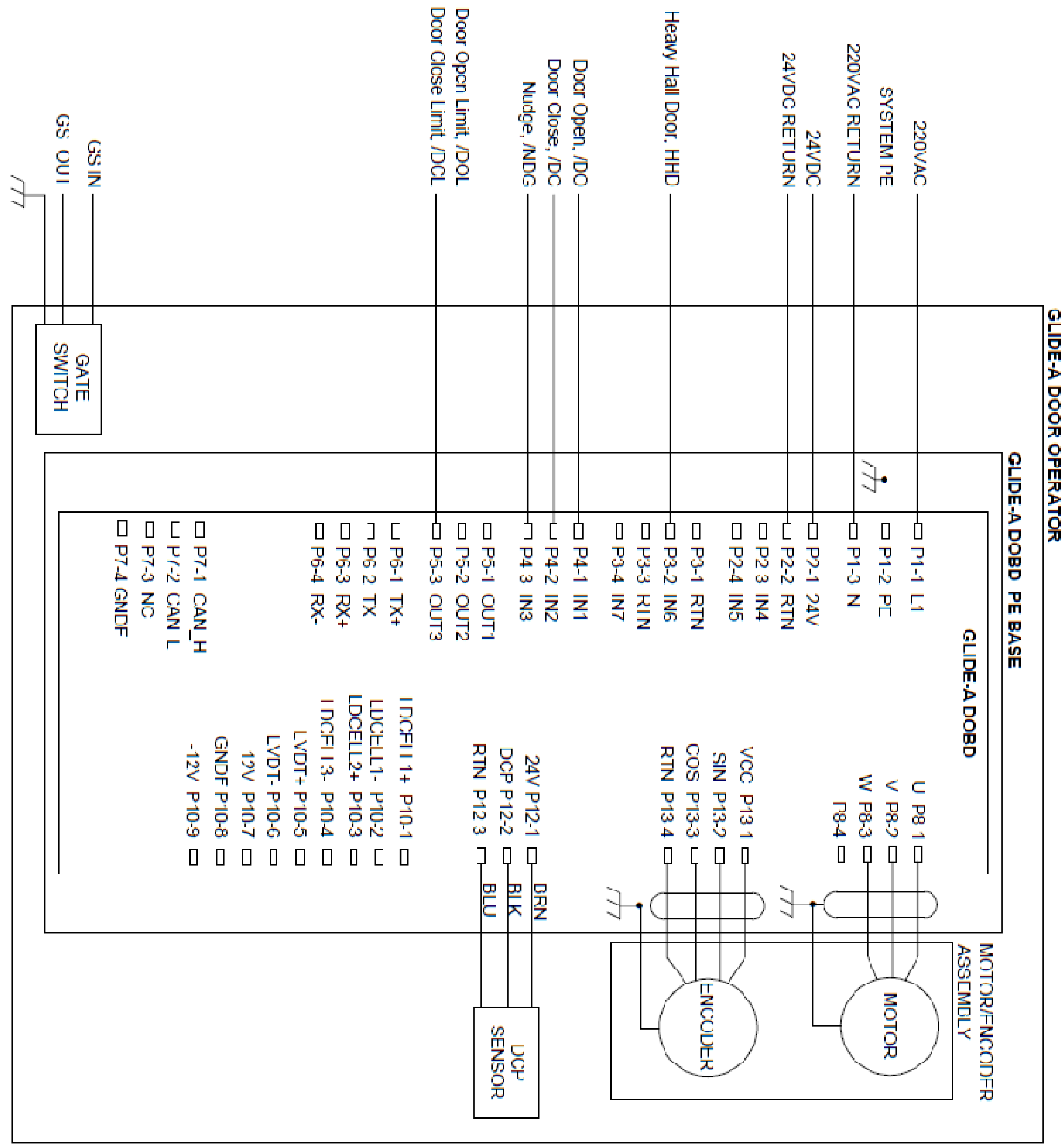


Figure 6: ***Glide A Field Wiring with Discrete Communication***

7 Control Board Setup

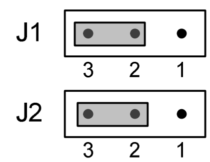
Discrete input jumpers and DIP switch positions on the Glide A control board (see Figure 3) need to be set according to the car controller to door controller communication type before the door operator can be configured. Ensure that the system power is off before undertaking the steps outlined in this section.

If the car controller to door controller communication interface type is multidrop, go to section 7.1.

If the car controller to door controller communication interface type is NSAA discrete, go to section 7.2.

7.1 Setup for NSAA Multidrop Communication

1. Set input configuration jumpers (Figure 3) as shown in the illustration and described in the table below. Spare header shunt jumpers are provided in the electrical interface kit.



Jumper	Connect Pins	Comments
J1	2 and 3	IN1 (DOB, P4-1) active High
J2	2 and 3	

2. Set SW3 dipswitch segments as indicated below. DIP SW3 segment 1 should be CLOSED/ON to enable the multidrop terminator on the last node of the multidrop communication link. For configurations with only the door operator (Glide A), the terminator must be enabled. For systems with front and rear multidrop door operators, the terminator must be disabled on the rear door operator.

   a. **For configurations with only one door operator or for a rear door operator where the front door operator also communicates via multidrop:**

   Set SW3 segment 2 CLOSED/ON, others OPEN/OFF as shown.

   b. **For a front Glide A with a rear door operator that also communicates via multidrop:**

   Set all SW3 segments OPEN/OFF as shown.

3. Set dipswitch SW6 segments for the system configuration (see Table 2):

   Load Sensor Type and Quantity: Set segments 1 and 2 to match the actual load sensor used. For rope sensors, set the segments for either 1 Load Cell or 2 Load Cells depending on how the rope sensors are wired. Typically the rope sensors are wired to both the load cell inputs and thus the segments should be set for 2 Load Cells.

   Door Opening Type (C/O, SS, 2S): Set segments 3 and 4 to match the door opening type. Note that the Glide A will automatically learn the hand of the door operator.

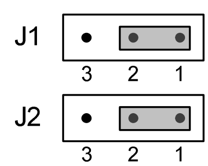
   Communication Type: For the multidrop application, set segment 5 OPEN/OFF and segment 6 CLOSE/ON to select the multidrop configuration.

   Profile Selection: For Mod and Open Order installation of the Glide-A, the Mod profile should be used. Set segment 7 OPEN/OFF.

   Load Weighing (LWSS): If load weighing is connected to the Glide A controller, enable load weighing by setting segment 8 OPEN/OFF. For systems with both a front and rear Glide A, the load sensors should be connected only to one door operator (typically the rear door operator) and enabled at that door operator. The other door operator load weighing function **must** be disabled.

7.2 Setup for NSAA Discrete Communication

1. Set input configuration jumpers, J1 & J2, as shown in the illustration and indicated in the table below. Spare header shunt jumpers are provided in the electrical interface kit.



Jumper	Connect Pins	Comments
J1	1 and 2	IN1 (/DO, P4-1) active Low
J2	1 and 2	

2. Set all SW3 dipswitch segments to the OPEN/OFF position as shown:

3. Set dipswitch SW6 segments for the system configuration (see Table 2):

   Load Sensor Type and Quantity: Settings for load weighing do not apply to the discrete configuration; segment 1 and 2 positions will be ignored.

Door Opening Type (C/O, SS, 2S): Set segments 3 and 4 to match the door opening type. Note that the Glide A will automatically learn the hand of the door operator.

Communication Type: For the discrete application, set segment 5 CLOSE/ON and segment 6 OPEN/OFF to select the discrete configuration.

Profile Selection: For Mod and Open Order installation of the Glide-A, the Mod profile should be used. Set segment 7 OPEN/OFF.

Load Weighing (LWSS): Settings for load weighing do not apply to the discrete configuration; segment 8 position will be ignored.

7.3 Service-Tool-Free Method To Save Dipswitch Settings To DCSS Memory.

NOTE: THIS REQUIRES AN UPDATED VERSION OF GLIDE A BASELINE SOFTWARE THAT WAS RELEASED TO PRODUCTION IN APRIL OF 2022, K1531474AAG OR KAA31770AAB.

1. Push SW5 <u>in</u> to set it for local operation.
2. Press and release SW1 five times rapidly. (You have ~3 seconds to push all 5 times.)
3. You should see the LED segments display in a circling motion and settle on “99” which means the software is ready for a learn run (covered in section 10 below).
4. Push SW5 again to toggle it <u>out</u> for normal operation.

8 Power-Up Checks

1. With power off, check that SW2 DOWNLOAD is in the RUN position.
2. Verify that SW4 MOTOR BRAKE is in the ON position.
3. Verify that the door operator lintel is bonded to the cab ground system.
4. Verify that plugs P1 (power) and P2 (24 VDC) are disconnected from the Glide controller.
5. For multidrop communication, check the line terminator. With all multidrop devices and wires connected, verify that the resistance between Glide A P6-3 and P6-4 is about 120 ohms.
    a. If the resistance is about 60 ohms, there are two line terminators connected.
    b. If the resistance is much higher than 120 ohms, there is no line terminator connected.

    If the line terminator resistance is not correct, refer to Table 2 and section 7.1 to connect/disconnect the line terminator.
6. Turn on mainline power.
7. At the Glide A controller plug P1 and P2, measure the 220VAC and 24VDC input power. If the voltage is outside of the range identified in the Table 5, troubleshoot and correct before proceeding further.

Table 5: Voltage Ranges

Function	Terminal	Voltage
Glide A Main Power	P1-1 and P1-3	180–250 VAC, 220 VAC nominal
Discrete Inputs/Outputs Power	P2-1(+) and P2-2(-)	24–32 VDC

8. Turn off mainline power.
9. Connect plugs P1 and P2 to the Glide A controller board.
10. Turn on mainline power.
11. Repeat the measurements at P1 and P2 as identified in step 7 and ensure that the voltages are within the tolerance range as identified in the Table 5.
12. Check Glide A control board LEDs according to Table 6.

Table 6: Glide A LEDs

Indicator	Function	Comment
LED1 (Yellow)	Heartbeat	Steady Flashing (may flash to indicate system faults)
LED2 (Red)	Local/Learn Run	OFF when in Normal Operation, ON when in Local Operation.
LED3 (Red)	Power (Red)	Steady ON (indicates on board 3.3VDC power supply is operational).

13. Install the front cover on the Glide A control box.

Do not attempt to disassemble the resolver from the motor. The motor and resolver are an integral assembly and must be replaced as a complete unit.

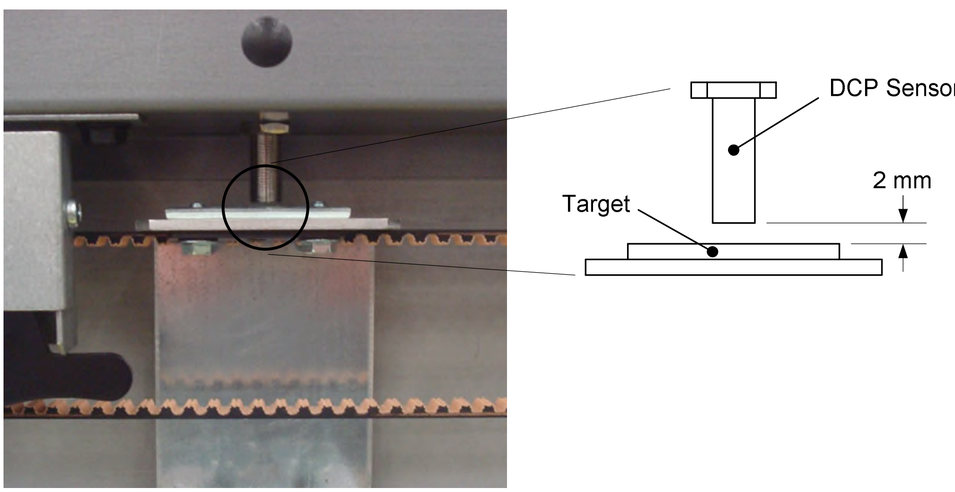


Figure 7: DCP Gap

Measure the voltage at the DCP input on the control board as indicated in Table 7. If the voltages do not match the expected values, suspect a problem with the DCP sensor and replace it (AAA608D12).

Table 7: DCP Input Voltage

Measurement	Door Position	Expected Value	SVT
P12-1 (+) to P12-3 (-)	N/A	24 to 30 VDC	N/A
P12-2 (+) to P12-3 (-)	Closed (sensor on target)	0 VDC	DCP
	Open (sensor away target)	24 to 30 VDC	dcp

14. Set S4 MOTOR BRAKE switch to the ON position.

> STOP — If any power-up checks fail, they must be corrected before configuring the Glide A controller and attempting a Learn Run.

9 Prepare for Learn Run

To perform a Learn Run requires:

- Car doors and hoistway doors coupled
- Glide A in "local mode" (SW5 LOCAL SWITCH ON, PUSHED IN)
- Car positioned according to Table 9.

Table 9: Car Position for Learn Run

Car Controller to Door Controller Communication	Car Position for Learn Run
Multidrop communication	landing with the most common hoistway door.
Discrete communication without a heavy hall door (HHD) input	landing with the heaviest hoistway door.
Discrete communication systems with a heavy hall door (HHD) input	landing with the most common hoistway door

If the car controller will run on TCI (Top of Car Inspection) without an operational door controller (see Table 10 for a list of controllers), close the hoistway doors and position the car according to Table 9 and then proceed to section 11.

Table 10: Car Controllers that Run TCI without Operational DCSS

Controller Model	Motion (MCSS) Processor or I/O Board
E2	J*A26807CBN GECB
GCS	A*A26800ANY IOBD
E3/411/M/HS/MC	A*A26800ABA or A*A26800ANX MCSS processor board
LVM2	(A*A26800YA IOBD or A*A26800ALR processor board)

If the car controller will not run on TCI without an operational door controller (see Table 11 for a list of controllers), perform the steps listed below to change the Glide A "learn status." This will allow the Glide A to communicate with the car controller and provide the appropriate signals to allow the hoist motor to run.

Table 11: Car Controllers that do not run TCI without Operational DCSS

Controller Model	Motion (MCSS) Processor or I/O Board
GEM/MVS, E311MV, E411MV	J*A26801AAF LMCSS processor board
GeN2/E411MS/VF	A*A26800AJV
E335M	A*A26800MK
Otis relay, competitor, and vendor car controllers having discrete communication (DO, DC, NDG)	Many

1. Release the Glide A SW5 LOCAL OPERATION switch and verify that LED 2 goes out.

2. Close the hoistway doors and position the car according to Table 9.

3. Push in the elevator stop switch.

4. Perform a Learn Run as outlined in section 10.

10 Two-Button Learn Run

The Glide A features a two-button Learn Run sequence to initiate the Learn Run process without requiring the use of a service tool. Note that the two-button Learn Run method learns all profiles. A service tool may be required if different profiles are to be learned and used at different landings.

1. With the car at the desired landing and the hall and car doors coupled in the fully closed positions, set Local Switch SW5 ON (pushed in).

2. Verify that LED2 is ON.

3. Press and hold Learn Run switch SW1 for 3 seconds. LED2 will blink rapidly as soon as the switch is pressed and will blink slowly when the 3 seconds have elapsed, and the Learn Run has started.

4. The door operator will initiate the Learn Run sequence in the normal manner.

5. Any errors that occur will be logged in the Fault Log and will be displayed on the 2-character segmented display.

6. When a Learn Run is completed successfully, LED2 will stop blinking and will be steady on. The on-board display will now show “- -“.

   At this point the Local Switch may be released to proceed with the installation.

11 Exercise Doors

Test the doors. If there are issues, please try the learn run again or see the troubleshooting section at the end of this document.

12 System Checks

Perform these checks to verify car controller to door controller communication after the elevator is capable of running floor-to-floor on MCSS “Normal” mode. Conduct these checks with the car at floor with an opening with the controller on Normal operation.

12.1 Systems with Discrete Communication

1. Press a hall call button or other car controller function to open the doors automatically. The doors should cycle open and close.

2. **Door Open Button (DOB) check:** Have an associate push the door open button from within the elevator. The doors should open fully then close.

3. **Reversal device check:** With the doors fully closed, press the DOB again. As the doors are closing, activate the reversal device. The doors should stop and re-open fully. Repeat for short, medium, and long reversals.

If the doors don’t operate as intended, refer to the troubleshooting section at the end of this document.

13 Code Closing Times and Door Force

Fill in the p/n AAA102YT2 minimum door closing time label (Figure 9) that is supplied with the operator. Minimum closing times, listed in Table 14 through Table 16, are calculated based on A17.1 Code specified Kinetic Energy limits.

The average closing times are defined over the code zone distance. This distance is defined in the code as:

- For all side-sliding doors using single- or multiple-speed panels, the Code zone distance will be taken as the horizontal distance from a point 50 mm (2 in.) away from the open jamb to a point 50 mm (2 in.) away from the opposite jamb.
- For all center-opening sliding doors using single- or multiple-speed panels, the Code zone distance will be taken as the horizontal distance from a point 25 mm (1 in.) away from the open jamb to a point 25 mm (1 in.) from the center meeting point of the doors.
- The average closing speed shall be determined by measuring the time required for the leading edge of the door to travel the Code zone distance.

Normal Closing Time is calculated from the average closing speed within the code zone distance such that the kinetic energy does not exceed 10 J (7.37 ft./lb.).

Slow Speed Closing Time is calculated from the average closing speed within the code zone distance such that the kinetic energy does not exceed 3.5 J (2.5 ft./lb.) when the reversal device is rendered inoperative (nudging operation).

MINIMUM DOOR CLOSING TIME	
CONTRACT NO.	
---- TYPICAL FLOORS ----	
NORMAL CLOSE (S)	
NUDGE CLOSE (S)	
---- NON-TYPICAL FLOORS ----	
LANDING	
NORMAL CLOSE (S)	
NUDGE CLOSE (S)	

***Figure 9:* Closing Time Label**

The Glide A automatically achieves the code specified kinetic energy limits by determining the appropriate closing speed based on door mass. The actual closing time will be longer than the minimum allowable time.

To measure door force:

1. Bring the car to the landing with the heaviest door and open the doors.
2. Allow the doors to begin closing, then stop the doors with your foot at a point between 1/3 and 2/3 of travel. Remember to avoid tripping the safety edge.

3. Apply door thrust gauge (p/n MT-122027) to the leading edge of the hoistway door.

4. Release the door to transfer the force to the gauge, then release the force on the gauge. Read the force on the gauge. If the door thrust exceeds 30 lb. (135 N), make a correction before elevator is returned to service.

Table 14: Minimum Permissible Door Closing Time (seconds) for Side Slide Doors

MASS		32" (812.8 mm) OPENING WIDTH		36" (914.4 mm) OPENING WIDTH		42" (1066.8 mm) OPENING WIDTH		48" (1219 mm) OPENING WIDTH	
(kg)		Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge
100	221	1.59	2.69	1.82	3.07	2.16	3.65	2.5	4.23
110	243	1.67	2.82	1.9	3.22	2.26	3.83	2.62	4.43
120	265	1.74	2.95	1.99	3.37	2.36	4	2.74	4.63
130	287	1.81	3.07	2.07	3.5	2.46	4.16	2.85	4.82
140	309	1.88	3.18	2.15	3.64	2.55	4.32	2.96	5
150	331	1.95	3.29	2.23	3.76	2.64	4.47	3.06	5.18
160	353	2.01	3.4	2.3	3.89	2.73	4.62	3.16	5.35
170	375	2.07	3.51	2.37	4.01	2.81	4.76	3.26	5.51
180	397	2.13	3.61	2.44	4.12	2.9	4.9	3.35	5.67
190	419	2.19	3.71	2.51	4.24	2.97	5.03	3.44	5.83
200	441	2.25	3.81	2.57	4.35	3.05	5.16	3.53	5.98
210	463	2.3	3.9	2.63	4.46	3.13	5.29	3.62	6.13
220	486	2.36	3.99	2.7	4.56	3.2	5.41	3.71	6.27
230	508	2.41	4.08	2.76	4.66	3.27	5.54	3.79	6.41
240	530	2.46	4.17	2.82	4.76	3.34	5.66	3.87	6.55
250	552	2.52	4.25	2.87	4.86	3.41	5.77	3.95	6.68
260	574	2.57	4.34	2.93	4.96	3.48	5.89	4.03	6.82
270	596	2.61	4.42	2.99	5.05	3.55	6	4.11	6.95
280	618	2.66	4.5	3.04	5.15	3.61	6.11	4.18	7.07
290	640	2.71	4.58	3.1	5.24	3.68	6.22	4.26	7.2
300	662	2.76	4.66	3.15	5.33	3.74	6.32	4.33	7.32

Table 15: Minimum Permissible Door Closing Time (seconds) for 2-Speed, Side-Slide Doors

MASS		32" (812.8 mm) OPENING WIDTH		36" (914.4 mm) OPENING WIDTH		42" (1066.8 mm) OPENING WIDTH		48" (1219 mm) OPENING WIDTH		54" (1372 mm) OPENING WIDTH		60" (1524 mm) OPENING WIDTH	
(kg)	(lbs)	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge
100	220	1.26	2.12	1.43	2.43	1.7	2.88	1.97	3.34	2.24	3.79	2.51	4.25
110	243	1.32	2.23	1.5	2.55	1.79	3.02	2.07	3.5	2.35	3.98	2.64	4.46
120	265	1.38	2.33	1.57	2.66	1.87	3.16	2.16	3.66	2.46	4.16	2.75	4.66
130	287	1.43	2.42	1.64	2.77	1.94	3.29	2.25	3.81	2.56	4.33	2.87	4.85
140	309	1.49	2.52	1.7	2.87	2.02	3.41	2.34	3.95	2.65	4.49	2.97	5.03
150	331	1.54	2.6	1.76	2.98	2.09	3.53	2.42	4.09	2.75	4.65	3.08	5.21
160	353	1.59	2.69	1.82	3.07	2.16	3.65	2.5	4.23	2.84	4.8	3.18	5.38
170	375	1.64	2.77	1.87	3.17	2.22	3.76	2.57	4.36	2.93	4.95	3.28	5.54
180	397	1.69	2.85	1.93	3.26	2.29	3.87	2.65	4.48	3.01	5.09	3.37	5.7
190	419	1.73	2.93	1.98	3.35	2.35	3.98	2.72	4.6	3.09	5.23	3.46	5.86
200	441	1.78	3.01	2.03	3.44	2.41	4.08	2.79	4.72	3.17	5.37	3.56	6.01
210	463	1.82	3.08	2.08	3.52	2.47	4.18	2.86	4.84	3.25	5.5	3.64	6.16
220	485	1.86	3.15	2.13	3.6	2.53	4.28	2.93	4.96	3.33	5.63	3.73	6.31
230	507	1.91	3.23	2.18	3.69	2.59	4.38	3	5.07	3.4	5.76	3.81	6.45
240	529	1.95	3.29	2.23	3.76	2.64	4.47	3.06	5.18	3.48	5.88	3.89	6.59
250	551	1.99	3.36	2.27	3.84	2.7	4.56	3.12	5.28	3.55	6	3.98	6.72
260	573	2.03	3.43	2.32	3.92	2.75	4.65	3.19	5.39	3.62	6.12	4.05	6.86
270	595	2.07	3.49	2.36	3.99	2.8	4.74	3.25	5.49	3.69	6.24	4.13	6.99
280	617	2.1	3.56	2.4	4.07	2.85	4.83	3.31	5.59	3.76	6.35	4.21	7.12
290	639	2.14	3.62	2.45	4.14	2.91	4.91	3.36	5.69	3.82	6.47	4.28	7.24
300	661	2.18	3.68	2.49	4.21	2.96	5	3.42	5.79	3.89	6.58	4.36	7.36
310	683	2.21	3.75	2.53	4.28	3	5.08	3.48	5.88	3.95	6.68	4.43	7.49
320	705	2.25	3.81	2.57	4.35	3.05	5.16	3.53	5.98	4.02	6.79	4.5	7.61
330	728	2.28	3.86	2.61	4.42	3.1	5.24	3.59	6.07	4.08	6.9	4.57	7.72

Table 15: ***Minimum Permissible Door Closing Time (seconds) for 2-Speed, Side-Slide Doors (continued)***

MASS		**32" (812.8 mm) OPENING WIDTH**		**36" (914.4 mm) OPENING WIDTH**		**42" (1066.8 mm) OPENING WIDTH**		**48" (1219 mm) OPENING WIDTH**		**54" (1372 mm) OPENING WIDTH**		**60" (1524 mm) OPENING WIDTH**	
(kg)	**(lbs)**	**Normal**	**Nudge**	**Normal**	**Nudge**	**Normal**	**Nudge**	**Normal**	**Nudge**	Normal	Nudge	Normal	Nudge
340	750	2.32	3.92	2.65	4.48	3.15	5.32	3.64	6.16	4.14	7	4.64	7.84
350	772	2.35	3.98	2.69	4.55	3.19	5.4	3.7	6.25	4.2	7.1	4.7	7.96
360	794	2.39	4.04	2.73	4.61	3.24	5.48	3.75	6.34	4.26	7.2	4.77	8.07
370	816	2.42	4.09	2.76	4.68	3.28	5.55	3.8	6.43	4.32	7.3	4.84	8.18
380	838	2.45	4.15	2.8	4.74	3.33	5.63	3.85	6.51	4.38	7.4	4.9	8.29
390	860	2.48	4.2	2.84	4.8	3.37	5.7	3.9	6.6	4.43	7.5	4.97	8.4
400	882	2.52	4.25	2.87	4.86	3.41	5.77	3.95	6.68	4.49	7.59	5.03	8.51

Table 16: ***Minimum Permissible Door Closing Time (seconds) for Centering Opening Doors***

MASS		36" (914mm) OPENING WIDTH		42" (1067mm) OPENING WIDTH		48" (1219mm) OPENING WIDTH		54" (1372mm) OPENING WIDTH		60" (1524mm) OPENING WIDTH	
(kg)	(lbs)	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge
100	220	0.91	1.53	1.08	1.82	1.25	2.11	1.42	2.4	1.59	2.69
110	243	0.95	1.61	1.13	1.91	1.31	2.21	1.49	2.52	1.66	2.82
120	265	0.99	1.68	1.18	2	1.37	2.31	1.55	2.63	1.74	2.94
130	287	1.03	1.75	1.23	2.08	1.42	2.41	1.62	2.73	1.81	3.06
140	309	1.07	1.82	1.27	2.16	1.48	2.5	1.68	2.84	1.88	3.18
150	331	1.11	1.88	1.32	2.23	1.53	2.59	1.74	2.94	1.94	3.29
160	353	1.15	1.94	1.36	2.31	1.58	2.67	1.79	3.03	2.01	3.4
170	375	1.18	2	1.4	2.38	1.63	2.75	1.85	3.13	2.07	3.5
180	397	1.22	2.06	1.45	2.45	1.67	2.83	1.9	3.22	2.13	3.61
190	419	1.25	2.12	1.48	2.51	1.72	2.91	1.95	3.31	2.19	3.7
200	441	1.28	2.17	1.52	2.58	1.76	2.99	2.01	3.39	2.25	3.8
210	463	1.31	2.23	1.56	2.64	1.81	3.06	2.06	3.48	2.3	3.89
220	485	1.35	2.28	1.6	2.7	1.85	3.13	2.1	3.56	2.36	3.99
230	507	1.38	2.33	1.63	2.77	1.89	3.2	2.15	3.64	2.41	4.08
240	529	1.41	2.38	1.67	2.83	1.93	3.27	2.2	3.72	2.46	4.16
250	551	1.43	2.43	1.7	2.88	1.97	3.34	2.24	3.79	2.51	4.25
260	573	1.46	2.48	1.74	2.94	2.01	3.41	2.29	3.87	2.56	4.33
270	595	1.49	2.52	1.77	3	2.05	3.47	2.33	3.94	2.61	4.42
280	617	1.52	2.57	1.8	3.05	2.09	3.53	2.37	4.02	2.66	4.5
290	639	1.55	2.62	1.84	3.11	2.13	3.6	2.42	4.09	2.71	4.58
300	661	1.57	2.66	1.87	3.16	2.16	3.66	2.46	4.16	2.75	4.66
310	683	1.6	2.7	1.9	3.21	2.2	3.72	2.5	4.23	2.8	4.73
320	705	1.62	2.75	1.93	3.26	2.23	3.78	2.54	4.29	2.84	4.81
330	728	1.65	2.79	1.96	3.31	2.27	3.84	2.58	4.36	2.89	4.88

Table 16: ***Minimum Permissible Door Closing Time (seconds) for Centering Opening Doors (continued)***

MASS		36" (914mm) OPENING WIDTH		42" (1067mm) OPENING WIDTH		48" (1219mm) OPENING WIDTH		54" (1372mm) OPENING WIDTH		60" (1524mm) OPENING WIDTH	
(kg)	(lbs)	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge	Normal	Nudge
340	750	1.67	2.83	1.99	3.36	2.3	3.9	2.62	4.43	2.93	4.96
350	772	1.7	2.87	2.02	3.41	2.34	3.95	2.65	4.49	2.97	5.03
360	794	1.72	2.92	2.05	3.46	2.37	4.01	2.69	4.55	3.02	5.1
370	816	1.75	2.96	2.07	3.51	2.4	4.06	2.73	4.62	3.06	5.17
380	838	1.77	3	2.1	3.56	2.43	4.12	2.77	4.68	3.1	5.24
390	860	1.79	3.03	2.13	3.6	2.47	4.17	2.8	4.74	3.14	5.31
400	882	1.82	3.07	2.16	3.65	2.5	4.23	2.84	4.8	3.18	5.38

14 Troubleshooting

14.1 Common Issues

1. Check that your power is not too high. There is a protection circuit on the Glide A board that will prevent power above 250VAC from getting to the door motor. You can confirm this by measuring AC Volts between any two wires on P8 feeding the motor. If you have high voltage on P1 and none on P8, then change your transformer taps to bring that supply voltage down. (You can go a little below 240VAC for your power feed if necessary.)

2. Check that your dipswitches are set properly.
   a. SW3. Pin 1 is to the right (closest to the blue OMU plug).

SW3

3-Segment Dipswitch (described right to left):

Segment	Position	Function
1 – CAN Termination	In, towards the board	CAN terminator enabled.
	Out, away from the board	CAN terminator disabled.
2 – Multidrop Termination	In, towards the board	Multidrop terminator enabled.
	Out, away from the board	Multidrop terminator disabled.
3 – Data Capture	In, towards the board	(for engineering use only)
	Out, away from the board	Normal operation.

   b. Check SW6 now. Pin 1 is closest to SW3.
   It's normal for Unitec customers to not care about 1 & 2 as 8 will often be "disabled".
   Segments 3 & 4 set the door type.
   Segments 5 & 6 set the communication type.
   Segment 7 should always be set for MOD profile.

SW6

Segment 1	Segment 2	Function
Out, away from the board	Out, away from the board	1 LVDT
Out, away from the board	In, towards the board	test voltage
In, towards the board	Out, away from the board	1 Load Cell
In, towards the board	In, towards the board	2 Load Cells / Rope Sensor

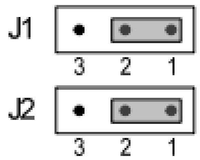
Segment 3	Segment 4	Function
Out, away from the board	Out, away from the board	Center Opening
Out, away from the board	In, towards the board	Side Slide
In, towards the board	Out, away from the board	Two Speed
In, towards the board	In, towards the board	N/A

Segment 5	Segment 6	Function
Out, away from the board	Out, away from the board	CAN
Out, away from the board	In, towards the board	Multidrop
In, towards the board	Out, away from the board	Discrete
In, towards the board	In, towards the board	N/A

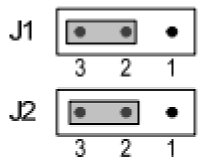
Segment 7	Function
Out, away from the board	MOD & Open Order Door Profiles
In, towards the board	NEB Door Profiles

Segment 8	Function
Out, away from the board	Load Weighing Enabled
In, towards the board	Load Weighing Disabled

3. Check the Jumpers!
   Discrete: The exposed pin should be closest to the edge of the pc board.



   Serial: the exposed pin is towards the inside/middle of the pc board.



4. If you find errors in the dipswitches or jumpers and make changes, then you should get these changes saved into memory by following the steps above in Section 7.3.

5. Many first-time installation issues are resolved by ensuring the car doors are coupled with the hall doors with a door closer or Spirator engaged on the hall doors. The Glide A requires the mass of car and hall doors as well as the closer push and pull force during the learn.

6. Doors pulsing, pinching or sagging open and reclosing when they should be holding closed with no trouble.

   a. It's possible the learn run compressed the door stop bumper too much and a fully closed position was memorized too far into the bumper. Change out the door stop for something more firm and perform a new learn run.

7. Doors are occasionally (or all the time) closing slowly like on nudging.

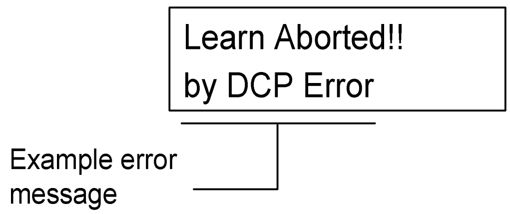
   a. You have to be sure the Glide A is getting DC and NDG in the way Otis has designed the operator to function:

      Normal close command= DC & NDG active

      Nudging command= DC active

14.2 Learn Run Troubleshooting

If a problem is encountered during the Learn Run, the Learn Run is aborted and an error message is displayed. Should this occur, refer to the information below for troubleshooting.



Service Tool Error Message	2-Character Display Error Code	Description	Likely Cause
Disable SW	None	Local Operation Switch (LOS) turned off during Learn-Run	LOS switch turned off, intermittent, or failed during Learn Run.
Learn button	None	Learn Button pushed	Learn button pushed during Learn Run or stuck in the ON position.
AbnormalOpenMass	None	Learned mass is under or overweight	Estimated mass is less than 157 kg (350 lb.) or over 315 kg (700 lb). Belt hitch not connected, hoistway door not coupled, overweight doors, upthrust rollers binding, or other mechanical problems with operation of the doors.
Out of DoorZone	None	Local Operation Switch turned off during Learn Run and Safe-to-Open is inactive	LOS switch turned off, intermittent, or failed and Safe-to-Open is inactive. Applicable to CAN and Multidrop communication interface systems only. It is not required for “Safe-to-Open” to be in the active state when performing a Learn Run.
DCP error	14	DCP sensor is not changing states.	DCP input is stuck on or off. Check the DCP signal indicated in section 8.
Abnormal Width	None	Door stroke is out of range (too small or too large). Learned door width is less than 12 in (30 cm) or greater than 13 ft. (4 m).	Monitor the travel distance during the Learn Run and check for reasonable values at full open and full closed. Check for belt slip over the motor pulleys, hitch slip, and doors hitting an obstruction at part open.
PositionError	None	Position error detected during Learn Run	Door travel distance is less than 20 mm or greater than 20 mm over the learned stroke. Car door track end stops moved or are not installed; refer to UT-ID 22.17.1-2 for further information, also check for belt slip over the motor pulleys and doors hitting an obstruction before full open.

by <Module> Key	None	"Module" key aborted the Learn Run	SVT "Module" key pressed during the Learn Run. When performing a Learn Run, do NOT press any keys on the Service Tool.
EncoderError	10	Encoder error detected during Learn Run.	• Check for missing PE bond wire between Glide A controller and Door Operator lintel; see section 6. • Check encoder connections at P13 for bent pins.
Stall	None	Stall detected during the Learn Run	• Excessive torque required to achieve Learn Run profile. Disconnect the door hitch from the doors. Manually move the doors full open to full close. • Check door alignment, upthrust roller adjustment, and debris on the tracks and sills if there is any resistance to movement. Reconnect the door hitch. Turn OFF the "Motor Brake" switch on the controller. Again move the doors full open to full close. Check for belt clearance and motor binding if there is any resistance to movement. Turn ON the "Motor Brake" switch.
AbnormalFrict	None	High friction detected during the Learn Run	• Upthrust rollers may be binding against track. Adjust eccentric roller such that there is no binding along entire door travel distance. • Debris in car or hoistway door sill, clean sill as required. Check for free movement by disconnecting the driven door and moving the doors by hand. • Operator is mounted too high above car door track. Maximum distance between car door track and belt is 9 in.
Learn Aborted	16	Learn Run aborted	Learn Run was aborted due to a user request or other error. See other faults in system to diagnose.
Motion Error	None	Motor cannot be exercised	• Motor cannot be driven. Check connections to the motor at connector P13. • Resolve other system faults.

NOTE: The "Not in Door Zone" message is displayed under the following conditions:

- The communication interface type is CAN or Multidrop.
- The "Safe-to-Open" discrete input is inactive.

14.3 Multidrop Communication Troubleshooting

When attempting pass-through communications from the car controller (MCSS) to the Glide A, it is possible the car controller is not receiving any multidrop data from the Glide A. The most common causes are:

- Multidrop TX and RX field wiring
- MCSS Door communication type parameter settings (car controller)
- Incorrect DCSS address (e.g. front, rear, upper or lower deck)
- Multidrop termination
- A combination of wiring errors and incorrect parameter values.

14.3.1 Check Door Operator Parameters

1. Verify that the DCSS address is correct in each multidrop device in the system - front DCSS and rear DCSS. Incorrect addressing or having multiple controllers set to the same address will result in multidrop communication errors.
2. Verify the car controller DCSS Communication type parameter is set to “Multidrop.” Refer to the MCSS Field Support Manual or MCSS EEPROM Setting TIP for the car controller on the job.
3. Verify the Baud Rate is the same in each multidrop device in the system - front DCSS, rear DCSS and MCSS (car controller).

*14.3.2 Check the Multidrop Buffer Board, A*A26800MJ (if present)*

1. Observe LED3 marked “+5V.” It should be lit (green).
2. If LED3 is not on, check fuse F1 by measuring the voltage between J1-1 (+) and J1-2 (-). A value of 8–12VDC is expected.
3. If the voltage is incorrect, check the car controller wiring.
4. If the fuse and power to the MBB are as expected but LED3 is off, suspect a defective MBB and replace it.

14.3.3 Check Multidrop Communication Status

1. Verify that the Glide A SW5 LOCAL OPERATION switch is disabled. This is indicated by the extinguished green LED2 on the Glide A control board. Push and release SW5 LOCAL OPERATION to turn off local operation, if required.

2. Turn off mainline power.

3. Disconnect all multidrop devices, except the front Glide A controller.

4. Turn on mainline power.

5. Check door communication status.

14.3.4 Is MDBB needed?

Some control systems do not require a MultiDrop Buffer Board. Have you installed one where it is not needed?

Keep in mind that a car with front and rear operators may need one MDBB but will not use two (i.e. do not install an MDBB on the front operator *and* one on the rear operator).

14.3.5 Check Multidrop TX, RX Field Wiring

1. Turn off the mainline.

2. Disconnect the multidrop receive and transmit field wires at the (L)MCSS processor board or multidrop buffer board.

3. In place of the field wires, install temporary test leads to connect transmit to receive as shown in Figure 11.

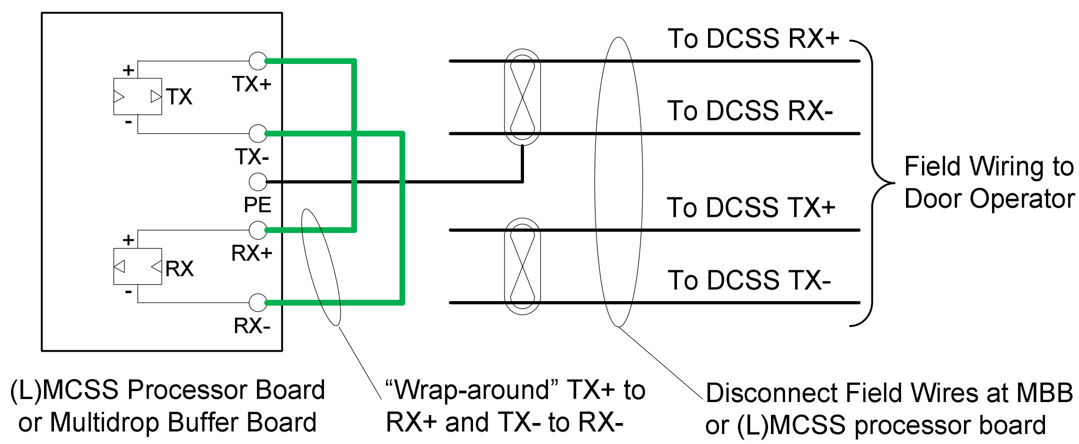


Figure 11: Multidrop Wraparound at Car Controller or Multidrop Buffer Board

4. Turn on the mainline.

5. Check door communication status. If needed, continue.

6. Turn off the mainline.

7. Reconnect the RX and TX field wires board from which they were removed.

8. Disconnect the multidrop receive and transmit field wires from the front Glide A controller and connect the TX pair to the RX pair as shown in Figure 12.

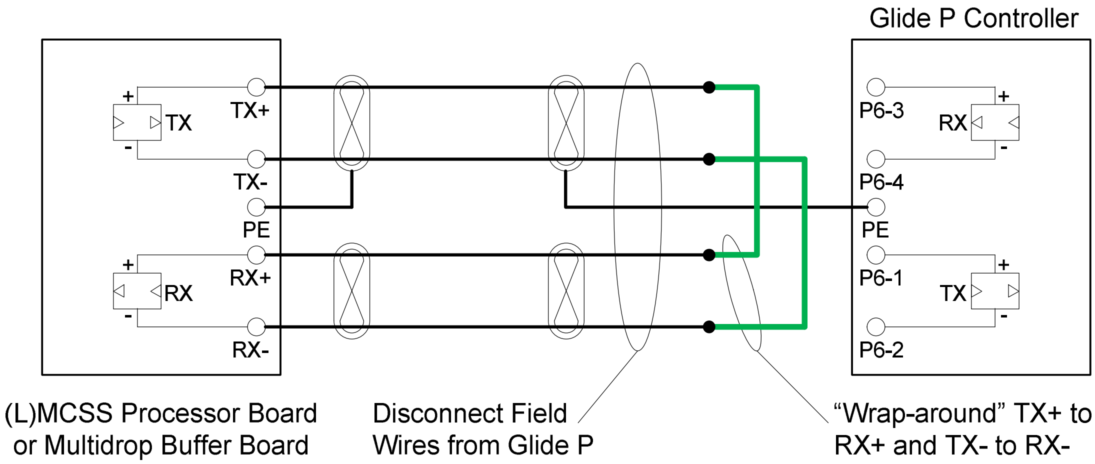


Figure 12: ***Multidrop Wraparound on RX, RX Field Wires***

9. Turn on the mainline. If needed, continue.

10. Turn off the mainline.

11. Ring out the TX and RX pairs to determine (1) if the TX and RX pair are swapped and (2) if TX+ is swapped with TX- or RX+ is swapped with RX. Label each field wire to avoid misconnecting.

14.3.6 Check the front Glide A Controller

1. Turn off the mainline.

2. Reconnect the RX and TX field wires to the Glide A.

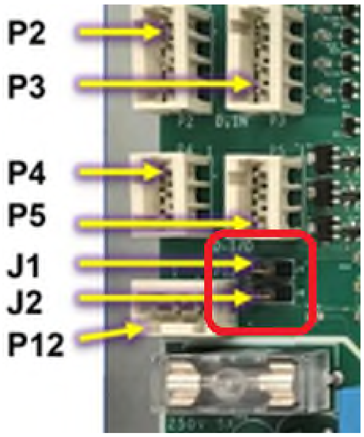
14.3.7 Check the rear Glide A Controller (if applicable)

If present, verify that the rear Glide A controller is connected to the multidrop link. Using the techniques described in section 18.2.5, troubleshoot and correct remaining problems, if any.

14.4 Discrete Communication Troubleshooting

14.4.1 Getting a 21 fault displayed on the on-board read out.

1. Check that your jumpers are set properly. For discrete communication the jumpers should be on the right-two pins.



2. If the jumpers are set correctly and you still get a 21 fault, the board may be still in its default configuration expecting CAN communication. Follow the steps in Section 7.3 above. (Repeated briefly here.)

   a. Push SW5 in to set it for local operation.

   b. Press & release SW1 five times rapidly. You have 3 seconds to push all 5 times.

   c. You should see the LED segments display in a circling motion and settle on “99” which means the software needs a new learn run

14.4.2 DOL or DCL are dropping out when they should not.

1. Remember that the Glide A software controls the DOL and DCL outputs.
   DOL will only be active if…
   1) the doors are at the learned encoder count of the open limit and
   2) the car controller is keeping DO active.

   DCL needs more redundancy to report an active output…
   1) The encoder count of the learned close position needs to be met,
   2) DCP needs to be triggered and
   3) DC needs to be active.

   Only with ALL of the above requirements will the software allow DOL or DCL to go active (low).

Before calling Unitec for support regarding DOL or DCL not working, you are going to have to step through these simple exercises to prove the operator is or is not acting properly.

Below is an example for DC & DCL, but you can do the same for DO & DOL.

- Temporarily disconnect the wires running to DO, DC & NDG on P4.
- Temporarily disconnect the wires running to DOL & DCL on P5.
- Run a temporary jumper from P2-2 (24VRTN) to P4-2 (DC). This puts an active (low) signal into DC for the operator. If your doors were not closed, expect them to now.
- Set a Voltmeter on DC Volts and put your **black lead on P2-2**. Put your **red lead on P5-3**.
- ➢ Does your meter read 0VDC? If so, you have proven that an active (low) input to DC will result in an active (low) output of DCL.

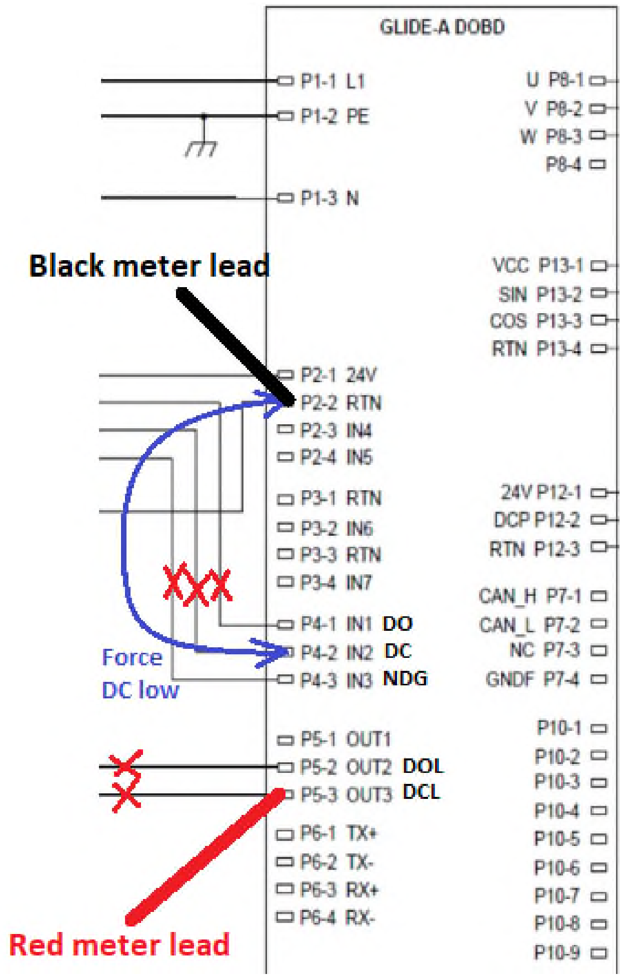


***Figure 14:** Manually simulating a Door Close command.*

- Obviously, remove your temporary jumper and reconnect the wiring to P4 & P5.

The same method can confirm the interface board is working. Wiring can vary, DC, DO, NDG, DCL & DOL may be DC volts **or** AC volts. The example below is for DC & DCL as 120VAC so take all measures to keep safe. Obviously, place your meter leads in the most correct spots to match your job's wiring.

- Below is a common test for DC & DCL, but you can do the same for DO & DOL. Temporarily safely disconnect wires to DO, DC & NDG on interface board J5.
- Temporarily disconnect DOL & DCL on interface board **J6-1** & **J6-4**.
- Run a temporary jumper from J1-3 (AC RET) to J5-2 (DC). This puts an active (low) signal into DC on the interface board.
- Set a Voltmeter for 120AC Volts. Put your **black lead on J3-4** or whatever wire feeds the interface bd DCL with the AC Return. Then put your **red lead on J6-4**.

➢ Does your meter read 0VAC? If so, you have proven that an active (low) input to the interface board's DC input has fed the door operator with an active (low) DC at J7-3 feeding P4-2 on the operator. This all results in an active (low) output of DCL from the operator P5-3 to J8-2 resulting in the interface board's DCL ice-cube relay triggering and closing its internal DCL N.O. contacts, feeding your car controller DCL with an active (low) Door Close Limit.

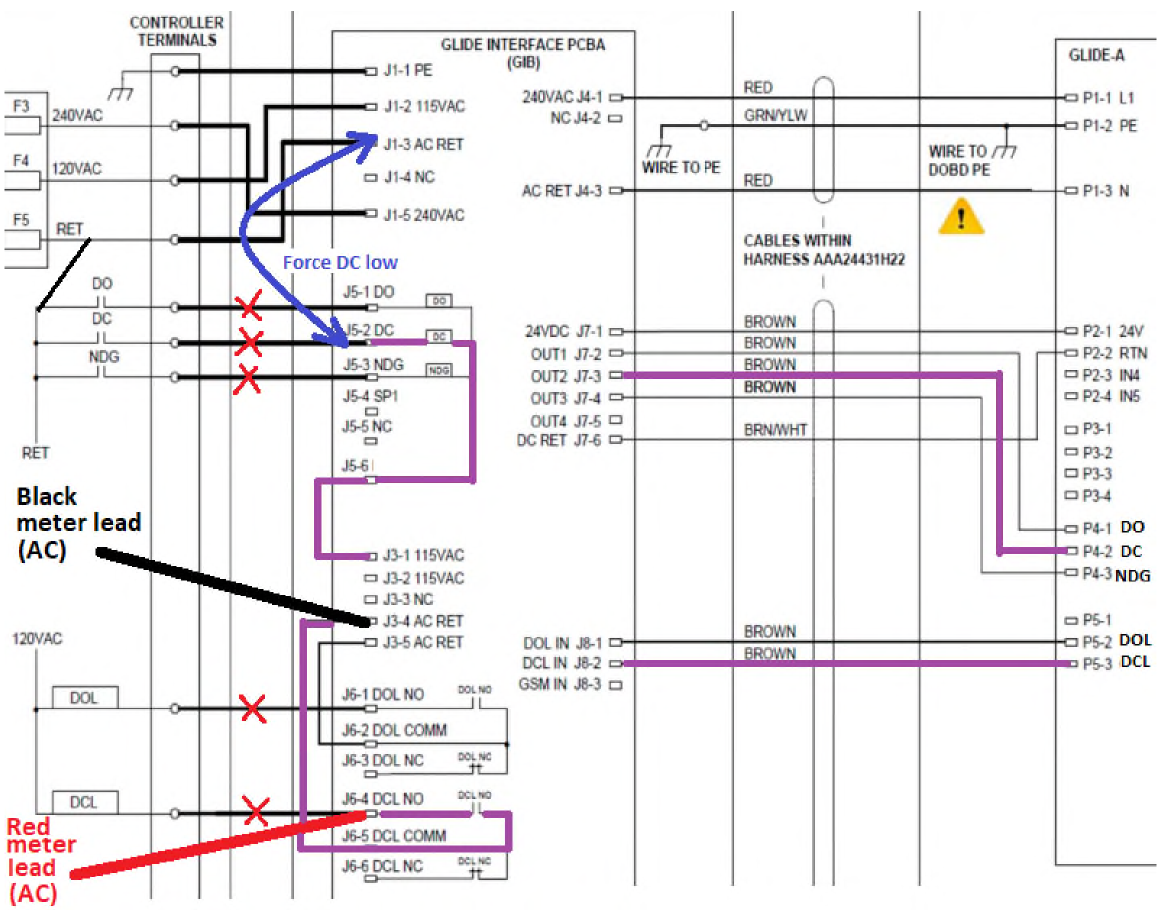


Figure 15: ***Manually simulating a Door Close command on the interface board.***

2. If you have a non-Otis car controller, please be sure the controller is keeping DO or DC constant. They may have parameter changes in their controller that can correct this or you may need to add relays to make these operator inputs constant. (Note that this has been a requirement on Otis operators for more than 15 years.)

3. If you have an Otis 211 or LVM (___21241V wiring diagram) and are experiencing this issue, there are two methods to adjust parameters:

   FIRST METHOD, using SVT: There are many Otis LVM car controllers that can give the required constant DO and constant DC door commands once they have the proper parameter changes made. If you can, please check or make the following changes:
   a. In M-3-2. GoOn to
   b. **Front Door Type** and set it to 9
   c. **Front Timer 1** = 1
   d. **Front Timer 2** = 0
   e. **Front Timer 3** = 5
      The above settings will provide the constant open command and…
   f. **FDED at DFC Opt** = 0 to have constant close command.

   If your software does not allow any of these changes to be made, try the below buttons or you may need to add relays to get DO or DC to be constant.

   SECOND METHOD, using on-board buttons:
   A. Usage of buttons: The "left button" (S2) and the "right button" (S3) provide the user input to toggle through the various display functions. Pressing and holding S2 for one second displays the next function. The subfunction of the S3 button depends on which main function is currently being displayed. Both S2 and S3, when pressed, must be held for one second before the display advances to the next main function or subfunction.

   B. Press and hold S2 until you see **DCSS PARAMETERS SETUP** displayed - release S2.

   C. All DCSS parameters may be viewed or modified using this function. The parameter name and its current value will scroll from right to left. Press and hold S3 for one second to view the next parameter.

   D. To change a parameter, press S2 and S3 together for one second to enter EDIT mode. The scrolling will stop and the current value of the parameter is frozen in the display.

   E. The S2 button now becomes a "+" key and the S3 button becomes a "-" key.

   F. Press and hold S2 for one second to increase the value by 1. If you continue to hold S2, the parameter will increase by 1 every half second.

G. Press and hold S3 for one second to decrease the value by 1. If you continue to hold S3, the parameter will decrease by 1 every half second.

   The list of parameters to change:
   a. **Front Door Type** = 9
   b. **Front Timer 1** = 1
   c. **Front Timer 2** = 0
   d. **Front Timer 3** = 5
   e. **FDED at DFC Opt** = 0

H. When finished, press and hold S2 and S3 together for one second. The display will exit EDIT mode and the new value will be written to the EEPROM. If you leave the display in EDIT mode, after about 20 seconds, the display will automatically exit EDIT mode and the value will remain unchanged.

14.5 Door Sag (Discrete Interface Application)

In discrete applications, the doors may sag at the limit positions if the door open and door close signals from the car controller become inactive. **The Glide-A requires constant door open and door closes signals.**

Should the door close signal go inactive when the doors are to be maintained in the close position, the door command changes from CLOSE to DE-ENERGIZE and the doors may sag and the door close limit (DCL) will become inactive as shown in Figure 17. Typically, when DCL becomes inactive, the controller will re-issue a close command. As a result at the fully closed position, the doors may be observed as bumping fully closed and then sagging slightly away from the fully closed position.

Likewise, should the door open signal go inactive when the doors are to be maintained in the open position, the door command changes from OPEN to DE-ENERGIZE and the doors may sag. In this situation the door open limit (DOL) will become inactive as shown in Figure 18. Typically, when DOL becomes inactive, the controller will re-issue an open command. As a result, at the fully open position the doors may be observed as oscillating between fully open and the sagging position.

This issue can only be resolved by updating the system with constant DO and DC signals from the car controller. Often, this is achieved by correcting the Door Type parameter in MCSS or by adding constant DO/DC circuits on relay controllers (LRV/LRS). For GCS based systems, the door timers have to be set to 0 and the DED DLY AT DFC parameter has to be disabled by setting it to 0.

(Be assured the Glide A has protection on the motor and it will not burn out with constant DC applied.)

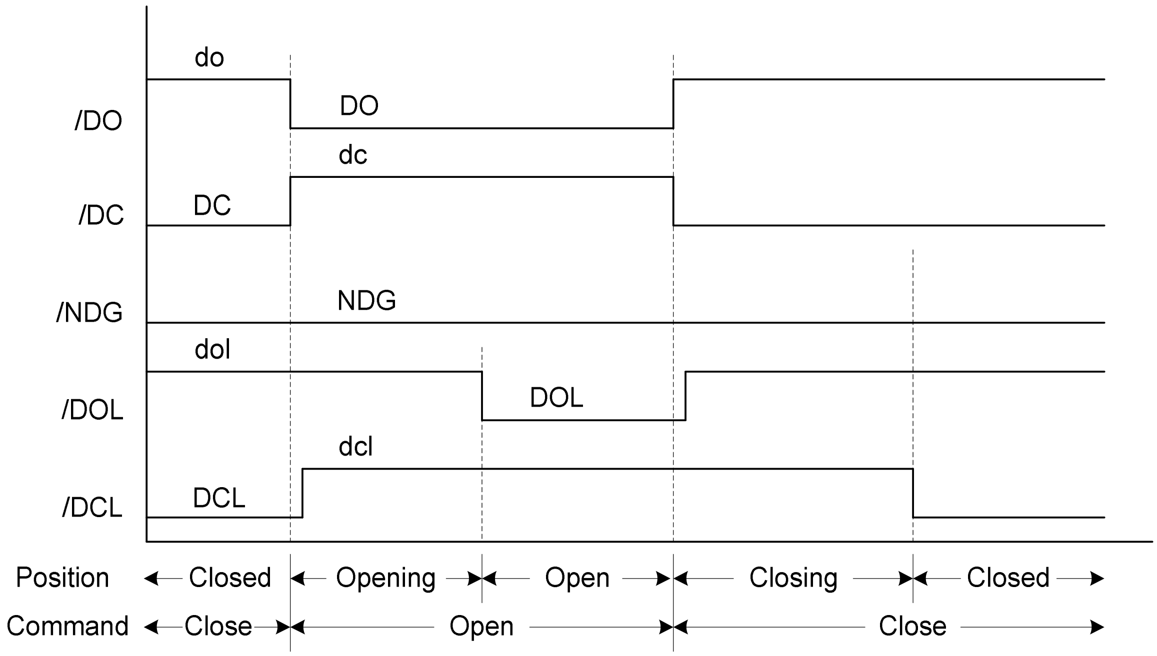


Figure 16: ***Door Open, Door Close Signals Maintained at Full Open, Full Close***

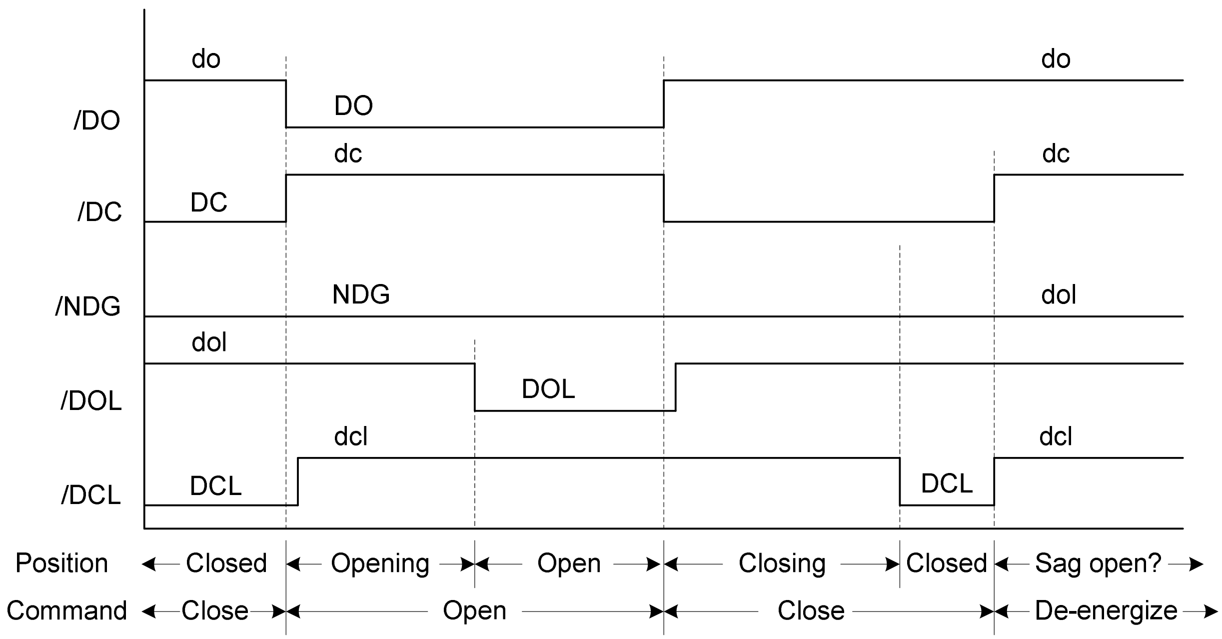


Figure 17: ***Door Close Signal not Maintained at Full Close***

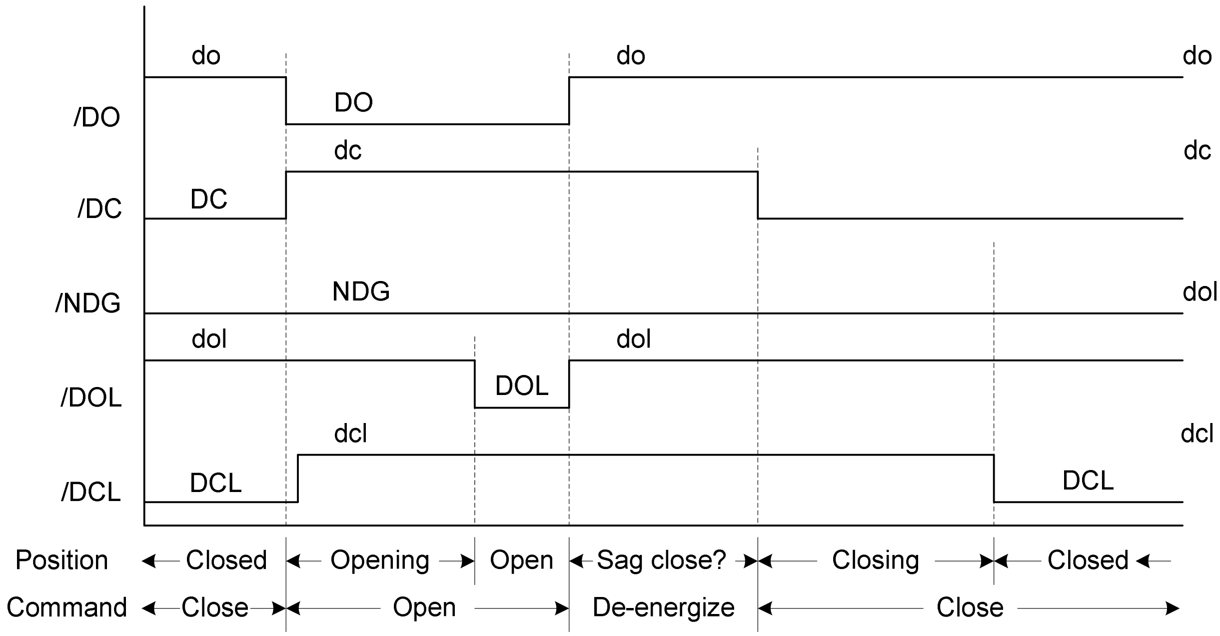


Figure 18: ***Door Open Signal not maintained at Full Open***

14.6 Load Weighing Troubleshooting

The first step in troubleshooting load weighing is to ensure that load weighing is enabled and the right type of load sensor configuration is set using DIP SW6.

14.6.1 Load Sensor Wiring

If the configuration is as expected, verify that the sensor is wired into the Glide-A controller, connector P10 as listed in the tables below:

Rope Sensor (_24270K or _24270AH) Wiring into Glide A Controller

From Sensor		To Glide A Controller		
Wire	**Signal**	**Plug**	**Pin**	
RED	EXCITATION +	P10	7	12VDC
BLACK	EXCITATION -		8	DC RETURN
GREEN	SIGNAL +		1	LDCELL1+ INPUT
WHITE	SIGNAL -		2	LDCELL1- INPUT

One Load Cell Sensor (622D) Wiring into Glide A Controller

From Sensor		To Glide A Controller		
Wire	**Signal**	**Plug**	**Pin**	
BLACK	EXCITATION +	P10	7	12VDC
WHITE	EXCITATION -		8	DC RETURN

RED	SIGNAL +		1	LDCELL1+ INPUT
GREEN	SIGNAL -		2	LDCELL1- INPUT

Two Load Cell Sensor (622D) Wiring into Glide A Controller

From Sensor			To Glide A Controller		
Sensor	**Wire**	**Signal**	**Plug**	**Pin**	
1	BLACK	EXCITATION +	P10	7	12VDC
	WHITE	EXCITATION -		8	DC RETURN
	RED	SIGNAL +		1	LDCELL1+ INPUT
	GREEN	SIGNAL -		2	LDCELL1- INPUT
2	BLACK	EXCITATION +		7	12VDC
	WHITE	EXCITATION -		8	DC RETURN
	RED	SIGNAL +		3	LDCELL2+ INPUT
	GREEN	SIGNAL -		4	LDCELL2- INPUT

LVDT Sensor (622A) Wiring into Glide A Controller

From Sensor		To Glide A Controller		
Wire	**Signal**	**Plug**	**Pin**	
RED	EXCITATION +	P10	9	12VDC
BLACK	EXCITATION -		8	-12VDC
YELLOW or GREEN	SIGNAL +		5	LVDT+ INPUT
BLUE	SIGNAL -		6	LVDT- INPUT

14.6.2 Load Sensor Gain and Amplification

Occasionally the change in voltage from the sensors between empty car and fully loaded car may not be sufficient for the MCSS to gain value to compensate full load. Typically, this manifests itself with the MCSS gain being set to the maximum value of 255 and load percent value being well less than 100% (with car fully loaded with load carts). Note that the *SW Gain* parameter is a software multiplier to the raw voltage and thus will also amplify any noise in the system. The recommended action is to use the lowest *SW Gain* value that can compensate the load.

At a value of 0, the SW Gain can accommodate a change of 1.5mV for the load cell, two load cell and rope sensor configurations and 0.32VDC for the LVDT configuration.

At a value of 255, the SW Gain can accommodate a change of 0.8mV for the load cell, two load cell and rope sensor configurations and 0.16VDC for the LVDT configuration.

14.7 LED Blinking Counts and Events

Below table shows the LED1 blinking counts and related events. It is for easy finding of related events from the count of LED1 blinking.

LED1 Blinking count	Related Events
1	Reversal Discrete Input hold related event I01 DOB Hold I03 EDP Hold
2	Motor current related fault F00 IPM1 Fault F02 CurCnt1 Err F04 Over Curr 1
3	Over Speed related fault F09 Over Speed
4	Encoder related error F10 Encoder Err
5	DCP related fault F14 DCP Err
6	Learn aborted fault F16 Learn Abort
7	EEPROM related fault and warning F08 PrmtAbnormal W17 E2P WrEr
8	Motor Thermal protection warning F15 Motor Temp W26 Motor Warm
9	Communication contents related warning W02 MD OverRun W03 MD ChekSum W04 MD Framing W05 MD InvldCmd W06 MD Parity W23 OPB RbufRun W24 OPB TQFull
10	Need Learn-run information I06 Need Learn
11	Lost communication fault and warning W07 MD Timeout W21 OPB Timeout W22 OPB TxTimeOut W25 Wrong Cmd
12	LWSS related fault and warning F17 LWSS HW Failure W27 LW Signal out of range

14.8 7-Segment Display for Events

The door control board (aka SPMDCB3, Single Permanent Magnet motor Door Control Board, ABX unified board) has 2-digit 7-segment display to display DCSS and LWSS event together. In normal situation, 7-segment shall display the most recent remaining fault.

- With LOS off, momentary press and release of Learn Run button will display next latest fault in the system. At first fault, first fault code display will flicker to show first fault. After navigating first fault, it will navigate to latest fault.
- With LOS switch OFF, without pressing Learn Run button over 30 seconds, LED array will show the most recent remaining fault detected
- With LOS switch OFF, continuous press and hold of Learn Run button for a minimum of 5 seconds and release shall erase ALL faults in the system. When erase is complete, system shall blink all LED array 3 times.

Fault	7-segments	Warning	7-segments
No fault	- -	W00 Over Load	
F00 IPM1 Fault	0 0	W01 UnderVolt	
F02 CurCnt1 Err	0 2	W02 MD OverRun	
F04 Over Curr 1	0 4	W03 MD ChekSum	
F06 OverVoltage	0 6	W04 MD Framing	
F07 RegenOvrCr	0 7	W05 MD InvldCmd	
F08 PrmtAbnorml	0 8	W06 MD Parity	
F09 Over Speed	0 9	W07 MD Timeout	2 0
F10 Encoder Err	1 0	W08 RSVT RBuFul	
F14 DCP Err	1 4	W09 RSVT WBuFul	
F15 Motor Temp	1 5	W10 SVT OverRun	
F16 Learn Abort	1 6	W11 SVT Framing	
F17 LWSS HW Failure	3 0	W12 SVT Parity	
		W13 SVT RBufFul	
Information	**7-segments**	W14 SVT WBufFul	
I00 PowerUp		W15 Abnormal SO	
I01 DOB Hold		W16 Pos. Error	
I03 EDP Hold		W17 E2P WrErr	1 7
I06 Need Learn	9 9	W21 OPB Timeout	2 1
I07 Learn Start		W25 Wrong Cmd	2 2
I08 Learned		W26 Motor Warm	
I09 Door Stall		W27 LW Signal out of range	**3 1**

14.9 Event table

Event	***Causes***	***Response***	***Report***	***Action to correct***
F00 IPM1 Fault	IPM1 detects short circuit	When detected, SPMDCB3 de-energizes motors and maintain that state for 3 seconds.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs. (Alert #14)	Check Motor 1 wiring
		After 3 seconds, the fault condition is cleared, it returns back to normal operation.	Log the event into nonvolatile memory with a local time stamp and increment its counter.	If fault persists the control board should be replaced
		If this fault occurs over 3 times in 20 seconds, SPMDCB3 will be locked. (de-energized and shut down)	Start blinking the PCB LED 2 times, pause 2.5 seconds, and repeat this sequence until cleared.	
F02 CurCnt1 Err	Motor1 commanded current and sensed current is different more than the set value in parameter. By default 400mA difference.	When detected, SPMDCB3 applies dynamic braking and maintain that state for 3 seconds.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #18).	Check Motor 1 wiring
		After 3 seconds, it will come back to normal mode	Log the event into nonvolatile memory with a local time stamp and increment its counter for each motor.	
		If it occurred 3 times during 20seconds, it will stay de-energized and shut down	Start blinking the PCB LED 2 times, pause 2.5 seconds, and repeat this sequence until cleared.	

F04 Over Curr 1	If motor 1 phase currents exceed 3.3A (instantaneous value), an over current error will be logged.	De-energize motor immediately.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #16).	
		It is recovered to normal mode when all motor phase current is within allowable level (2.5A)	Log the event into nonvolatile memory with a local time stamp and increment its counter for each motor.	
		If it occurred 3 times during 20seconds, it will stay de-energized and shut down	Start blinking the PCB LED 2 times, pause 2.5 seconds, and repeat this sequence until cleared.	
F06 OverVoltage	Detected when input voltage is over 275V.	Proceed with the stop operation immediately, and then de-energize motor and maintain that state.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #12).	Check correct input voltage is present
		It is recovered when main power voltage became under AC265V and over AC140V	Log the event into nonvolatile memory with a local time stamp and increment its counter.	If this event continues to occur, the controller board should be replaced.

F08 PrmtAbnormal	When start up SPMDCB3, parameter abnormal state is detected.	Lock up immediately. Require Mechanic maintenance to configure valid parameter and reset.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #23). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 7 times, pause 2.5 seconds, and repeat this sequence until cleared.	Set Default(M-3-3-4) and reset and then perform Learn-run again.
F09 Over Speed	When speed is detected over 140% of top speed.	Proceed with the stop operation immediately and apply dynamic braking. Recovered when door stop	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #11). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 3 times, pause 2.5 seconds, and repeat this sequence until cleared	

F10 Encoder Err	Encoder sine-cosine value is abnormal Encoder cable is disconnected	Apply dynamic braking and maintain that state. Recovered when Encoder Error is resolved	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #5). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 4 times, pause 2.5 seconds, and repeat this sequence until cleared	Check SC Encoder wiring
F14 DCP Err	The DCP sensor has failed to come on when the doors are closed (as indicated by the encoder position) or fails to go off when the doors open.	Enter into initialize mode. Recovered when door movement length is longer than learned door stroke. After that, door will move normally without DCP information but use encoder until DCP comes back.	Communicate each occurrence via Multidrop bus as soon as it occurs (Alert #20).. Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the pub LED 5 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check that the LED on the DCP sensor goes on when the doors are fully closed and off when open. If not, verify that the gap in the sensor is set according to the gate switch adjusting instruction. Check the wiring from the DCP sensor to the controller

F15 Motor Temp	Sensed torque currents over reference value are accumulated. If the value exceeds threshold, over thermal error is detected	Try to stop and de-energize the motor for protection of motor from overheating. Recovered accumulated value of currents goes to half of Motor thermal protection value. If it is detected 5 times in 10 minutes it shut down the operation of door controller.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #22). Log the event into nonvolatile memory with a local time stamp, and increment its counter. Start blinking the PCB LED 8 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check for increased friction in the system. De-energize the doors and move the doors by hand. Determine if there is anything preventing the doors from moving smoothly. Check that the HoldOpenForce and the HoldCloseForce are not too high. With power off, check wire continuity to door motors.
F16 Learn Abort	Learn run is aborted during Learn run execution. 1. When a parameter learn run is stopped before it has finished. 2. When a parameter learn run is started, but the door cannot find the closed and opened end stop positions. 3. If a learned door width is less than 30cm or greater than 4m. 4. If DCP is still true at the 100 mm open distance when performing the first door open motion during a learn run.	If there is valid parameter set from previous successful learn-run, it goes to initialization mode and resumes using those parameters. If there is no valid parameter set, go to reduced mode.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #21).. Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 6 times, pause 2.5 seconds, and repeat this sequence until cleared.	Ensure that the DCP sensor is functioning. Check for mechanical blockage or door friction Check for loose belt which would prevent the motor from stopping at the end stops.

F17 LWSS HW Failure	Failure of LWSS circuitry. The controller periodically checks the test voltage to ensure that the load weighing circuitry is operational. Failure of reading the on-board test voltage signal indicates failure of the circuitry related to load weighing measurements.	Provide default load value to MCSS.	Log the event into nonvolatile memory with a local time stamp and increment its counter. Update LED segment display.	Replace controller.
I00 Power Up	Power has been turned on to the system or system is reset.		Log the event into nonvolatile memory with total count	None Information and historical data only
I01 DOB Hold	DOB is kept on over 60 seconds		If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #10). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 1 times, pause 2.5 seconds, and repeat this sequence until cleared	Check wiring between DOB to SPMDCB3 or DOB device.

I03 EDP Hold	EDP is kept on over 60 seconds.		If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #10). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 1 times, pause 2.5 seconds, and repeat this sequence until cleared.	
I06 Need Learn	System doesn't have valid parameter for site because learn-run has not been performed	DOOR moves at initialize speed until Learn-run performed.	Log the event into nonvolatile memory with a local time stamp. Start blinking the pub LED 10 times, pause 2.5 seconds, and repeat this sequence until cleared.	Execute Learn-run
I07 Learn Start	The system has started a learn run.		Log the event into nonvolatile memory with a local time stamp.	None Information and historical data only
I08 Learn Cmplte	Learn completed			None Information and historical data only

I09 Door Stall	The door stalls while closing or opening before reaching the endpoints.	The motor torque is reduced. Recovered the system automatically resumes operating normally when the blockage is cleared and door motion is detected.	Log the event into nonvolatile memory with a local time stamp and increment its counter.	If this fault persists, check for excessive friction at all landing, as the hall door could be the source of the Friction. If system doesn't recover automatically, please check the encoder connection status.
I10 Cfg Changed	This event indicates that one or more of the configurable parameters have been changed. This includes restoring of default values. (Log only one event if multiple parameters are changed before the door is cycled open and closed.)		Log the event into nonvolatile memory with total count	None Information and historical data only
I11 Start NewLog	This event indicates that the event log was cleared.		Log the event into nonvolatile memory with total count	None Information and historical data only
W00 Over Load	Sensed current is over the specified overload current in the parameter. (By default 1.8A) It means installation is not properly performed and door detect overloaded to move doors.	Select the low-speed run immediately and maintain that state. Recovered It elapses more than 10 seconds since the fault has been detected, and the mean value of inverter output became half of overload detection current.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #2).. Log the event into nonvolatile memory with a local time stamp and increment its counter.	Check if there is excessive door friction

W01 UnderVolt	Input voltage is under 155V.	Select the half speed run immediately and maintain that state. Recover The main power voltage becomes larger than AC165V.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #3). Log the event into nonvolatile memory with a local time stamp and increment its counter.	Check the correct input voltage is present. Check the wiring from the power supply to the control board. If this event continues to occur the controller board should be replaced.
W02 MD OverRun	Count if the reading timing is not matched and next data is overwritten in receive buffer for Multi-drop serial link	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs. Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	

W03 MD Checksum	Multi-drop received data check sum error	No proceeding with decode of received data.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	
W04 MD Framing	Count if stop bit of received data from Multi-drop is abnormal	Annul the received data.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	

W05 MD InvldCmd	Count when received command which is not in ICD.	It annuls the decoded MCSS door command and follows the prior available MCSS door command.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check for wiring errors or grounded wires.
W06 MD Parity	Multi-drop received data parity error	Annul the received data.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	

W07 MD Timeout	Detected when the communication from Multi-drop disconnected over 1 second.	In case the status of SO signal is on True, set the operation command to CLD8, and maintain that condition. In case the status of SO signal is on False, set the operation command to CLD5 and at the same time, set the reversal authority of DOB and SGS to OR, and that of LRD and EDP to NR. Recovered when Decode process of multi-drop receiving data proceeded.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #7). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 11 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check wiring from the elevator controller to door controller. Ensure elevator controller is configured for Multi-drop.
W08 RSVT RBuFul	Receive buffer is full for remote service tool port.		Log the event into nonvolatile memory with a local time stamp and increment its counter.	
W09 RSVT WBuFul	Transmit buffer is full for remote service tool port.		Log the event into nonvolatile memory with a local time stamp and increment its counter.	
W10 SVT OverRun	Count if the reading timing is not matched and next data is overwritten in receive buffer for RS422 port.		Log the event into nonvolatile memory with a local time stamp and increment its counter.	
W11 SVT Framing	Count if stop bit of received data from RS422 port is abnormal.	Annul the received data.	Log the event into nonvolatile memory with a local time stamp and increment its counter.	

W12 SVT Parity	RS422 port received data parity error.	Annul the received data.	Log the event into nonvolatile memory with a local time stamp, and increment its counter.	
W13 SVT RBufFul	Receive buffer is full for service tool port.		Log the event into nonvolatile memory with a local time stamp and increment its counter.	
W14 SVT WBufFul	Transmit buffer is full for service tool port.		Log the event into nonvolatile memory with a local time stamp and increment its counter.	
W15 Abnormal SO	Count if floor is changed with SO on. There is no effect on operation if error is detected.		If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #9). Log the event into nonvolatile memory with a local time stamp, and increment its counter.	
W16 Pos. Error	Door moves to the position over the set value in parameter or over closed position by 20mm	DOOR moves at initialize speed until resolved.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #4). Log the event into nonvolatile memory with a local time stamp, and increment its counter.	If this occurs every time on power up, then redo an Installation Run. Also, check the tension of the sync link cable. Verify that it is not slipping over the primary encoder sheave.

W17 E2P WrErr	Fail to write parameter or data sum	N/A	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #8). Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 7 times, pause 2.5 seconds, and repeat this sequence until cleared.	If error persists, replace the operator control board.
W21 OPB Timeout	The result of OPB initialization is bus off	Continue to send the door status messages. Continue to execute the last command received. Recovered Decode process of Door command message or transmission succeed.	Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 11 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check wiring from the elevator controller to door controller. Ensure elevator controller is configured for CAN interface.
W25 Wrong Cmd	In Discrete NSAA interface, received wrong command	Stop and de-energize the motor.	Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 9 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check for wiring errors or grounded wires.

W26 Motor Warm	Sensed torque currents over reference value is accumulated. If the value exceeds threshold (before overheat), motor warm warning event is detected	Reduce maximum torque to minimum not-heating torque for protection of motor from heating which will apply at least minimum hold close torque to keep door closed while car runs. Recovered accumulated value of currents goes to half of Motor thermal protection value.	If, multi-drop is configured, communicate each occurrence via Multidrop bus as soon as it occurs (Alert #22) Log the event into nonvolatile memory with a local time stamp and increment its counter. Start blinking the PCB LED 8 times, pause 2.5 seconds, and repeat this sequence until cleared.	Check for increased friction in the system. De-energize the doors and move the doors by hand. Determine if there is anything preventing the doors from moving smoothly. Check that the HoldOpenForce and the HoldCloseForce are not too high. With power off, check wire continuity to door motors.
W27 LW Signal out of range	1. Sensor failure. 2. Excitation signal failed/not connected/out of range 3. Sensor not adjusted properly; Preload incorrect; isolation pad collapsed.	Provide default load value to MCSS.	Log the event into nonvolatile memory with a local time stamp and increment its counter. Update LED segment display.	1. Check sensor operation by measuring output from sensor under various car loads. 2. Inspect and replace isolation pad. 3. Confirm test signal operation on controller using SVT.

15 Glide A Discrete Inputs and Outputs

Tables 19–22 below list the discrete I/O for the Glide A door operator and provide a brief description. Troubleshooting the signals typically requires measuring the signal voltage against 24VDC which can be found on pins P2-1 & P12-1 or against 24VDC RETURN which can be found on pins P2-2, P3-2, P3-4 & P12-3.

Table 19: Standard Inputs for NSAA Multidrop and Discrete

Signal Plug-Pin	SVT Symbol	Description
/DCP P12-2		**D**oor **C**losed **P**osition signal provided by the proximity sensor located on the door operator. The sensor asserts this signal when the sensor senses the belt bracket when the doors are fully closed as described in section 8. This signal is used to monitor door position and the signal is active when the door hitch is in the doors closed position. Signal required for learn run. DCP sensor is factory wired.
	DCP	Doors in the closed position, DCP sensor active; P12-2 is 0 VDC with respect to 24VDC RETURN.
	dcp	Doors not in the closed position, DCP sensor inactive; P12-2 is 24VDC with respect to 24VDC RETURN.

Table 20: NSAA Multidrop Inputs

Signal Plug-Pin	SVT Symbol	Description
DOB P4-1		**D**oor **O**pen **B**utton. Pushbutton signal to command door controller to open or reverse the door.
	DOB	DOB active: Door open or door reversal requested, P2-1 = 24VDC with respect to 24VRTN.
	dob	DOB inactive: P2-1 = floating[1]/0 VDC with respect to 24VRTN.
/DSO P4-3		**D**oor **S**afe to **O**pen signal from car controller. This signal MUST be active for the Glide A to open the doors under a door open commands from MCSS.
	DSO	DSO active: Car speed less than 150 FPM and car is in a door zone, P4-3 = 0 VDC with respect to 24VRTN.
	dso	DSO inactive: Car speed greater than 150 FPM or out of door zone, P4-3 = floating[1]/0 VDC with respect to 24VRTN
EDP P2-3		**E**levator **D**oor **P**rotection - reversal signal from door detector device.
	EDP	EDP active: Obstruction in door, door re-opens or allowed to close at nudging speed; P2-3 = floating[1]/0 VDC with respect to 24VRTN.
	edp	EDP inactive: No obstruction, door closes at profile speed; P3-3 = 24VDC with respect to 24VRTN.
CDBP P3-2		**C**ar **D**oor **B**y**P**ass signal from LMCSS based car controller. LMCSS based car controllers require an active door closed state in order to run the car on TCI when CDBP is switched on.
	CDBP	CDBP active: Glide A provides active door closed state via multidrop regardless of the actual door state; P4-2 = 24VDC with respect to 24VRTN.
	cdbp	CDBP inactive: Glide A provides actual door state. P4-2 = floating[1]/0 VDC with respect to 24VRTN.

Table 21: ***NSAA Multidrop Outputs***

Signal Plug-Pin	SVT Symbol	Description
/DOL P5-2		**D**oor **O**pen **L**imit; indicates Door Full Open state.
	DOL	Door command is OPEN and door position is within “MCSS_DOL_Dist” (default value = 20 mm) of full open; P5-1 = 0 VDC
	dol	Door command is not open or door position more than “MCSS_DOL_Dist” from full open; P5-2 = Vcan (note 1)

Table 22: ***NSAA Discrete Interface Inputs***

Signal Plug-Pin	SVT Symbol	Description
/DO P4-1		**D**oor **O**pen signal from car controller; used in combination with /DC and NDG, see Table 11.
	DO	/DO input active, P2-1 = 0 VDC
	do	/DO input inactive, P2-1 = Vcan (note 1).
/DC P4-2		**D**oor **C**lose signal from car controller; used in combination with /DO and NDG, see Table 11.
	DC	/DC input active, P2-2 = 0 VDC
	dc	/DC input inactive, P2-2 = Vcan (note 1).
/NDG P4-3		**N**u**dg**e Close signal from car controller; used in combination with /DO and /DC, see Table 11.
	NDG	/NDG input active, P2-3 = 0 VDC.
	ndg	/NDG input inactive, P2-3 = Vcan (note 1).
HHD P3-2		**H**eavy **H**all **D**oor. Signal from the car controller to select an alternate profile (2) on floors with heavy hall doors.
	HHD	HHD input active, P4-2 = Vcan (note 1); alternate profile selected at HHD floor.
	hhd	HHD input inactive, P4-2 = 0 VDC.

NOTE 1: Vcan = 24 to 30 VDC

Table 23: ***NSAA Discrete Interface Outputs***

Signal Plug-Pin	**SVT Symbol**	**Description**
/DOL P5-2		**D**oor **O**pen **L**imit; indicates Door Full Open state.
	DOL	Door command is OPEN and door position is within "MCSS_DOL_Dist" (default value = 20 mm) of full open; P5-1 = 0 VDC
	dol	Door command is not open or door position more than "MCSS_DOL_Dist" from full open; P5-2 = Vcan (note 1)
/DCL P5-3		**D**oor **C**lose **L**imit; indicates Door Full Close state.
	DCL	Door command is CLOSE and door position is within "MCSS_DCL_Dist" (default value = 20 mm) of full close; P5-3 = 0 VDC
	dcl	Door command is not close or door position is more than "MCSS_DCL_Dist" from full close; P5-3 = Vcan (note 1)

Appendix A: Part and Drawing Numbers

The following table lists all part and drawing numbers this document mentions.

Table 24: Related Part Numbers

Description	Part/Drawing Number
Glide A Door Operator	AAA24450AE
Glide A Door Controller	KAA24360ABX1
Glide A Door Motor, Right Hand	KAA24354AAX32
Glide A Door Motor, Left Hand	KAA24354AAX132
Multimeter, Fluke Model 177	MT-122066-11
Glide A Electrical Interface Kit (**NOTE**)	AAA24430AP
Wago Insertion Tool	AAA27EF11
Wago Insertion Tool	AAA27BZ2
Ferrule Crimp Tool	AAA27EF9
Door Wedge Tool	MT-114390-5
DCP Sensor	AAA608D12
Door Close Time Data Tag	AAA102YT2
Door Force Guage, 0 to 35 lbs	MT-122027-1

NOTE: Drawing number provided for reference only.