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UT-ID 22.17.1-8

Unitec Parts, Otis Glide® A  
Electrical Installation on LRV/LRS Controllers

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## 1 Description

This document covers the installation of the Otis Glide A door operator on Open Order applications when replacing Otis door operators on the LRS and LRV controllers. Instructions include parts ordering and specification, as well as mechanical and electrical installation.

**NOTE 1:** Non-Otis door operators on LRS and LRV controllers are not covered in this document.

**NOTE 2:** The LRS and LRV products and components are becoming obsolete. Direction to customers should be to upgrade the control system along with the door operator.

For installation on other Otis elevator systems, see **UT-ID 22.17.1-1 Otis Glide A Specification and Ordering Guide for Unitec Parts Co**, and other UT-ID's found on our web page: <https://www.unitecparts.com/elevators/products/door-operators/>.

## 2 Parts Ordering and Specification

### 2.1 Car Controller Software and Compatibility

The LRS/LRV motion software revision must be as listed in Table 1. **If the jobsite system software is older than the one listed below, the Glide A will not work with this car controller.** To install a Glide A door operator here you must contact Otis Elevator to perform a software upgrade prior to upgrading the door operator or you must modernize the car controller.

**Table 1: LRS/LRV Software Revision**

Car Controller Type	Wiring Diagram	Motion Software	Hardware Dependency
LRS	No minimum requirement.	AAA30014AAK, or higher	Board revision E8121BC1 or higher
LRV			Board revision D8121DB1 or higher

### 2.2 Door Operator and Mechanical Components

To order the door operator and related mechanical components please refer to **UT-ID 22.17.1-1 Otis Glide A-Specification and Ordering Guide for Unitec Parts Co.**

### 2.3 Electrical Interface Components

Order the electrical interface components covered in the following section.

#### 2.3.1 Glide Power Supply (AAA24430AE)

Identify the building/available primary voltage source and select the power supply using Table 2.

**Table 2: Otis Glide A Power Supply**

Otis P/N	Primary Voltage	Secondary Voltage (Glide A needs this to run)
AAA24430AE1	208–240 VAC	240 VAC @ 2.1A and 120 VAC @ 2.1A
AAA24430AE2	340–416 VAC	
AAA24430AE3	440–600 VAC	

### 2.3.2 Electrical Interface Components

Order the electrical interface components per Table 3.

**Table 3: Electrical Interface Components**

Otis PN	Description	Quantity (per door operator)
AAA24430AP8	Glide-A Electrical Interface Kit	1
AAA613CZ9	Relay, 115 VAC, 4NO 4NC	3
AAA00605AAA014	Suppressor, RC (for relay coil suppression)	3
401B14	DIN rail, 13.5 in. long	1
618AE2	Relay sockets	3

### 2.3.3 Elevator Rescue Unit (ERU)

If the current Emergency Return Unit (ERU) provides 110VDC output, it must be replaced with an ERU that provides 220VDC. The typical Otis ERU AUT-O-SAFE® ABA7900BH1 that provides 110VDC must be replaced with the 220VDC version ABA7900BH2.

Order the 220VDC ERU (ABA7900BH2) as needed for the jobsite.

### 3 Mechanical Installation

#### 3.1 Door Operator Installation

For the mechanical installation of the door operator, see **UT-ID 22.17.1-2 Otis Glide A Mechanical Installation Guide**.

#### 3.2 Power Supply Mounting

The AAA24430AE Otis Glide A power supply mounts inside the car controller cabinet. Identify or create holes to mount the power supply transformer base (a grounded surface is ideal). If sufficient space is not available to mount the power supply, it may be mounted in an adjacent enclosed space in the machine room using appropriate hardware (see Appendix A: Part Numbers for typical enclosure AAA308UD2).

**Power Supply Dimensions:** 5.5 x 10 x 7.5 inches (140 x 254 x 190,5 mm)

#### 3.3 Discrete Relays and Associated Components

The discrete relays ordered as part of the door operator upgrade are to be installed in the machine room in an enclosed space. The car controller cabinet is an ideal location for these components.

1. Identify a suitable location to mount the DIN rail. Note that this DIN rail will be used to mount the relay sockets, relays, and diode suppressors.
2. Mount the DIN rail in an enclosed space within a reasonable distance of the car controller terminal strip.
3. Install the relay sockets onto the DIN rail.
4. Install the relays into the relay socket.
5. Install the two RC suppressors across the relay coils as shown in the system connection summary wiring diagram in section 6.

**Approximate space needed to mount relays and associated components:**

14 x 2 x 5 in. (356 x 50 x 127 mm)

## 4 Electrical Installation

Prior to initiating electrical installation, ensure that all components are securely mounted in their designated locations. Electrical wiring and connections should be performed after all bulk mounting and physical adjustments have been made and all equipment related to the previous door operator has been removed.

### 4.1 Door Operator Wiring

The Otis Glide A door operator wiring consists of:

- Verifying the factory pre-wiring
  - Securing proper PE connections to the operator
1. Verify that the Otis Glide A door operator is wired as shown in Figure 1. Ensure that all wires are properly connected and all the shield wires are properly terminated to the PE points (shown in Figure 2) on the controller enclosure.



**Improper grounding of the motor resolver wire shields may result in inconsistent operation.**



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## GLIDE-A DOOR OPERATOR

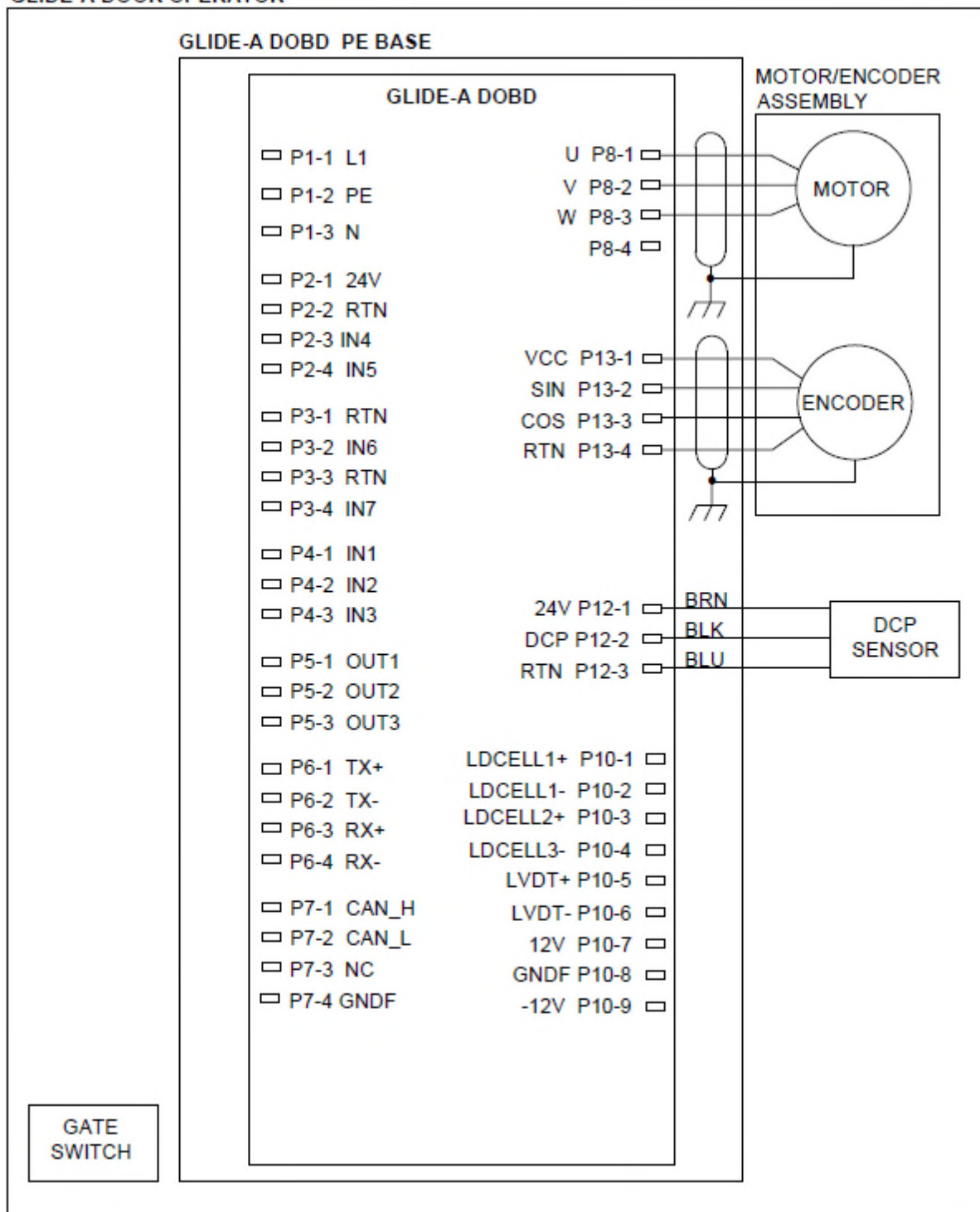


Figure 1: Otis Glide A Door Operator Factory Wiring

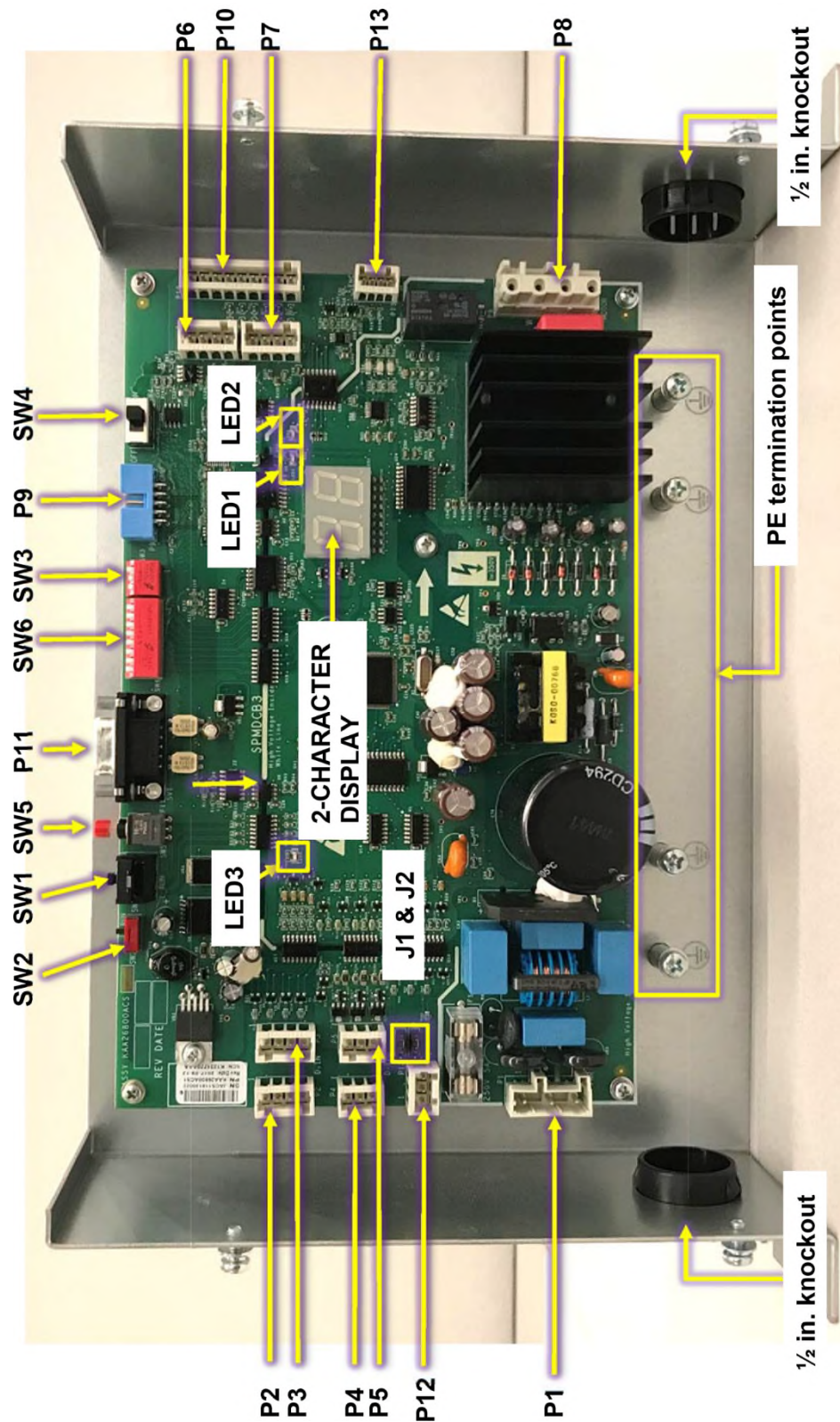


Figure 2: Otis Glide A KAA24360ABX Controller PC Board  
(assembly cover, plugs, and wires not shown for clarity)

2. Terminate the Glide A gate switch PE wire (factory installed) to the Glide A controller PE points (see Figure 2).
3. Using a self-tapping machine screw (provided with the kit) secure one end of a 14AWG green/yellow PE wire with ring terminal (provided with the kit) onto the Glide A door operator sheet metal. The recommended location is adjacent to the opening for the wires directly beneath the Glide A controller. Ensure that the length of the wire is sufficient enough for the other end to terminate at a known PE point on top of the car through all the conduits and wire troughs.



Proper PE connection to the operator is required to ensure safety and consistent operation.

## 4.2 Power Supply Wiring

The single-phase power supply (p/n AAA24430AE) consists of:

- Transformer AAA225JR
- Input fuses F1, F2 (AAA375BK26 3.5 A, 600 V)
- Output fuses F3, F4, and F5 (AAA375BK28 3 A, 600 V)
- Terminal blocks, mounting plate, and other miscellaneous hardware.

The power supply accepts single-phase input from 208–600 VAC (depending on arrangement, see Table 1) and provides outputs of 240 VAC @ 2.1 A and 120 VAC @ 2.1 A. The 120 VAC is used to power the electrical interface PCBA AAA26800AWG located inside the enclosure assembly AAA24430AD (if used). The 240 VAC is used to power the Otis Glide A door operator.

The power supply **must** be:

- Mounted in an enclosed space, usually inside the car controller cabinet.
- Properly connected to PE. Typical installation of the power supply will include a physical PE wire attached to the enclosure PE at one end and the base of the power supply transformer on the other end.

The power supply diagram is shown in Figure 3.

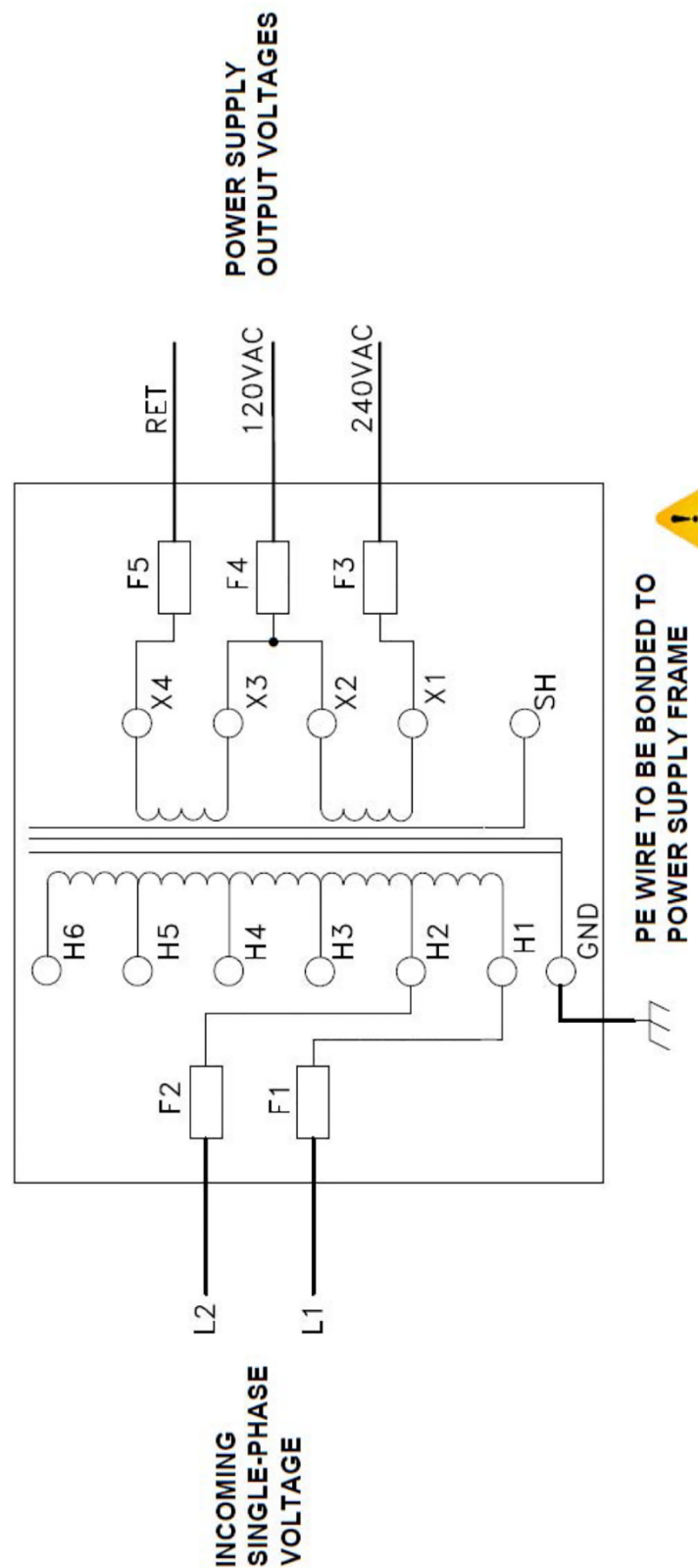


Figure 3: AAA24430AE Wiring

1. Mount the power supply in an enclosed space.
2. Terminate and secure a known PE wire to the base of the transformer. Note that the GND and SH terminal blocks are connected to the power supply chassis.
3. **Verify that the primary winding on the transformer is connected to the proper taps on the terminal block using Table 4. Adjust the factory wiring as needed.**

**Table 4: Power Supply Primary Winding Connections**

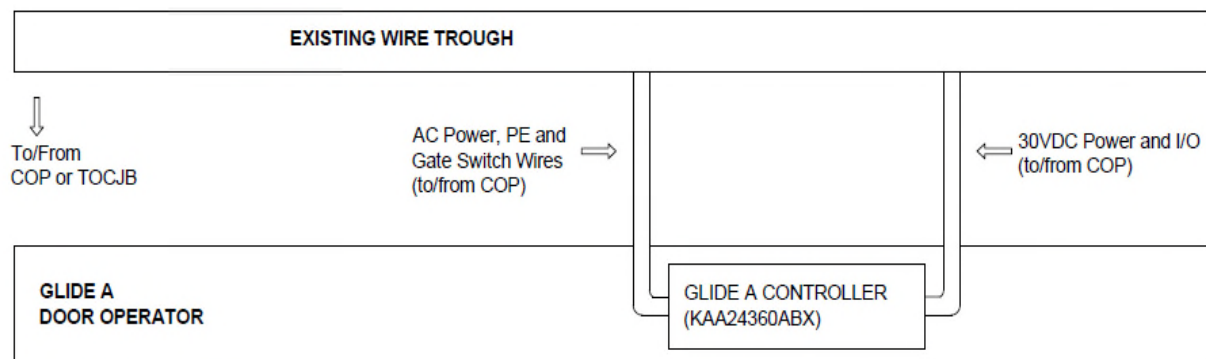
Power Supply	Primary Connection	For Input Voltage (VAC)
AAA24430AE1 (208–240 VAC Input)	H1-H2	208
	H1-H3	220
	H1-H4	230
	H1-H5	240
	H1-H6	H6 not available on this arrangement
AAA24430AE2 (346–416 VAC Input)	H1-H2	346
	H1-H3	380
	H1-H4	400
	H1-H5	416
	H1-H6	H6 not available on this arrangement
AAA24430AE3 (440–600 VAC Input)	H1-H2	440
	H1-H3	460
	H1-H4	480
	H1-H5	575
	H1-H6	600

4. Wire the incoming primary voltage into fuses F1 and F2 respectively. 14 AWG, 105C stranded wires (or better) should be used. Note that since the Glide A power supply is a single-phase power supply, only two out of the three phases will be used. Disconnect and remove the unused phase wire.
5. Wire the secondary voltage outputs:
  - Voltage across F3 and F5 is 240 VAC. 14 AWG, 105C stranded wires and travelers (or better) should be used.
  - Voltage across F4 and F5 is 120 VAC. 14 AWG, 105C stranded wires and travelers (or better) are recommended. The 120VAC tap is only needed if the electrical interface assembly AAA24430AD is used.

### 4.3 System Wiring

1. On the Glide A controller, two conduit knockouts will be used for routing wires. One conduit will be used for power, gate switch and main PE connections and the other will be used for 30VDC I/O.

These knockouts are located on either side of the controller as shown in Figure 2.



**Figure 4: Conduit Routing for Glide A Door Operator w/o Load Weighing**

2. Remove both knockout plugs from the Glide A controller and install a 1/2 in. conduit fitting (1/2 in. 90-degree fitting 440G1, provided in the kit) into each of the two holes.
3. Loosely install needed conduit lengths to these knockouts (6 ft. sections of 1/2 in. flexible conduit provided in the kit) along with appropriate insulation bushings (1/2 in. 334AY2 bushings provided in the kit). Note that these conduits are to be terminated to the wire trough or TOCJB.
4. Connections between the system travelling cables and the Glide A are made using the AAA24431H22 harness provided in the electrical kit.
5. On the AAA24431H22 harness, remove and isolate the wires connected to the main power connector P1.
6. Insert the AAA24431H22 power plug to header P1 on the Glide A controller.
7. Secure the PE wire ring terminal on the power plug to one of the PE connection points adjacent to the Glide A controller PCBA.
8. Pull the power wires, gate switch wires and the door operator PE wire through the conduit closest to header P1 to route into the wire trough.
9. Insert the remaining plugs on the AAA24431H22 harness to the matching headers on the Glide A controller.

10. Pull the loose end of these wires through the conduit closest to header P8 to route into the wire trough.
11. Connect the power cables at the open end of the harness between the Glide A door operator and the Glide A power supply (via travelling cables) as shown in Table 5.

**Table 5: Wiring for Power Cable**

To Glide A power supply (via traveling cables)		From Otis Glide A Door Controller				
Connector	Pin	Connector	Pin	Wire Color	Wire Number	Wire Gauge
--	Fuse F3 (L)	P1	1	Red	3	18 AWG
System PE			2	Green/Yellow	2	14 AWG
		Controller PE Hole				
--	Fuse F5 (N)	P1	3	Red	1	18 AWG

12. Route the remaining cable wire as shown in Table 6. System specific wiring diagrams are shown in section 6. The wiring diagrams show the connections to be made at the car controller or the open end of the harness.

**Table 6: Wiring for Low Voltage Signal Cable**

From Otis Glide A Door Controller					To Car Controller (via traveling cables)			
Connector	Pin	Signal	Wire Color	Wire Gauge	Connector	Pin	Signal	
P4	1	IN1 (/DO)	Brown	18 AWG	--		/DO	
	2	IN2 (/DC)					/DC	
	3	IN3 (/NDG)					/NDG	
P2	1	V_CAN(24VDC)	Brown /White				24VDC	
	2	RTN_CAN(24VRTN)					24VRTN	
P3	2	IN6 (HHD)	Brown					HHD
P5	2	OUT2 (/DOL)						/DOL
	3	OUT3 (/DCL)						/DCL

**NOTE: Glide A input signals /DO, /DC, and /NDG are active low connecting to 24VRTN when active.** The car controller **must** connect these signals to 24VRTN to activate the signal.

Glide A output signals /DOL and /DCL are active low connecting to 24VDC when inactive (more precisely, these signals are inactive high).

/DOL is 24VDC when the doors are not fully open and floating when doors are fully open.



/DCL is 24VDC when the doors are not fully closed and floating when doors are fully closed.

13. Ensure that the PE wire in the AAA24431H22 is also connected to a known PE point on the top of the car.
14. Connect the Otis Glide A door gate switch to the system safety chain (via traveling cables).
15. Ensure that the PE wire from the gate switch assembly is securely tied to a known PE point on the top of the car.
16. Using a multimeter, verify continuity of the PE points at the gate switch, Otis Glide A controller PE holes and the Otis Glide A door operator sheet metal.



## 5 Start Up

For startup of the Otis Glide A door operator, see **UT-ID 22.17.1-3 Otis Glide A Startup Manual**.

## 6 System Wiring Diagrams

### 6.1 NSAA Discrete Installation on LRV3 controller with A7777 PWM door operator (W/D 8-1S7900AG)

The following wiring diagram depicts installation of the Otis Glide A door operator on a LRV3 controller with existing discrete A7777 PWM door operator. The following areas are affected:

- **Area 1:** Addition of Glide power supply. Figure 5
- **Area 2:** Removal of existing door operator and re-use of circuits for Glide A. Remove all controller wiring except travel cables from the following controller terminals: 7,9,10,11,12. Figures 6 & 7
- **Area 3:** Replacement of existing gate switch with Glide A gate switch. Figure 8
- **Area 4:** Replacement of existing door operator limits circuits and replacement with Glide A limits. Figure 9





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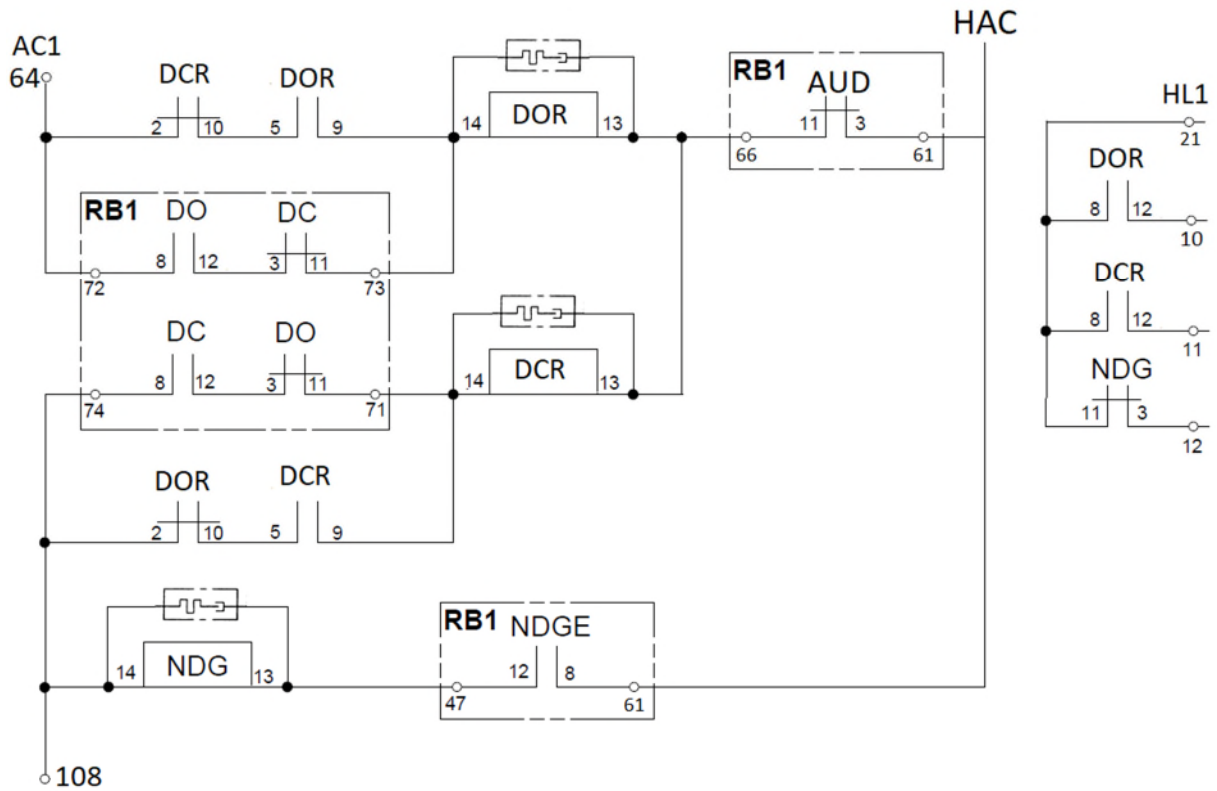
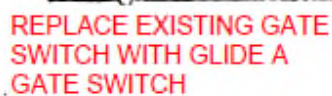


Figure 7: Constant DO/DC Circuits to be Added to the Car Controller



**Figure 8: Area 3 of W/D 8-1S7900AG**  
Existing gate switch replaced with Glide A gate switch



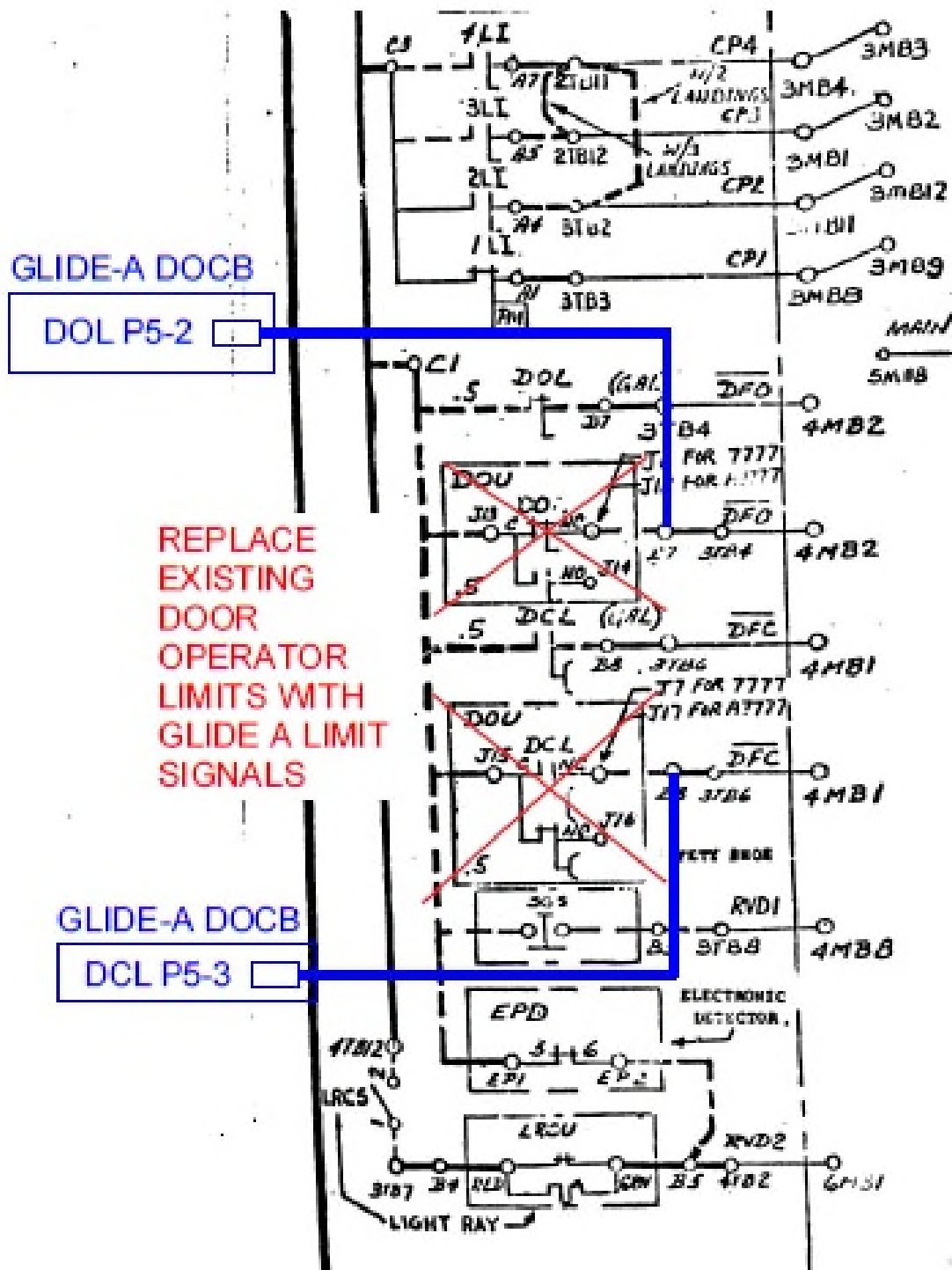


Figure 9: Area 4 of W/D 8-1S7900AG

Existing door limit circuits replaced with Glide A door operator limit outputs

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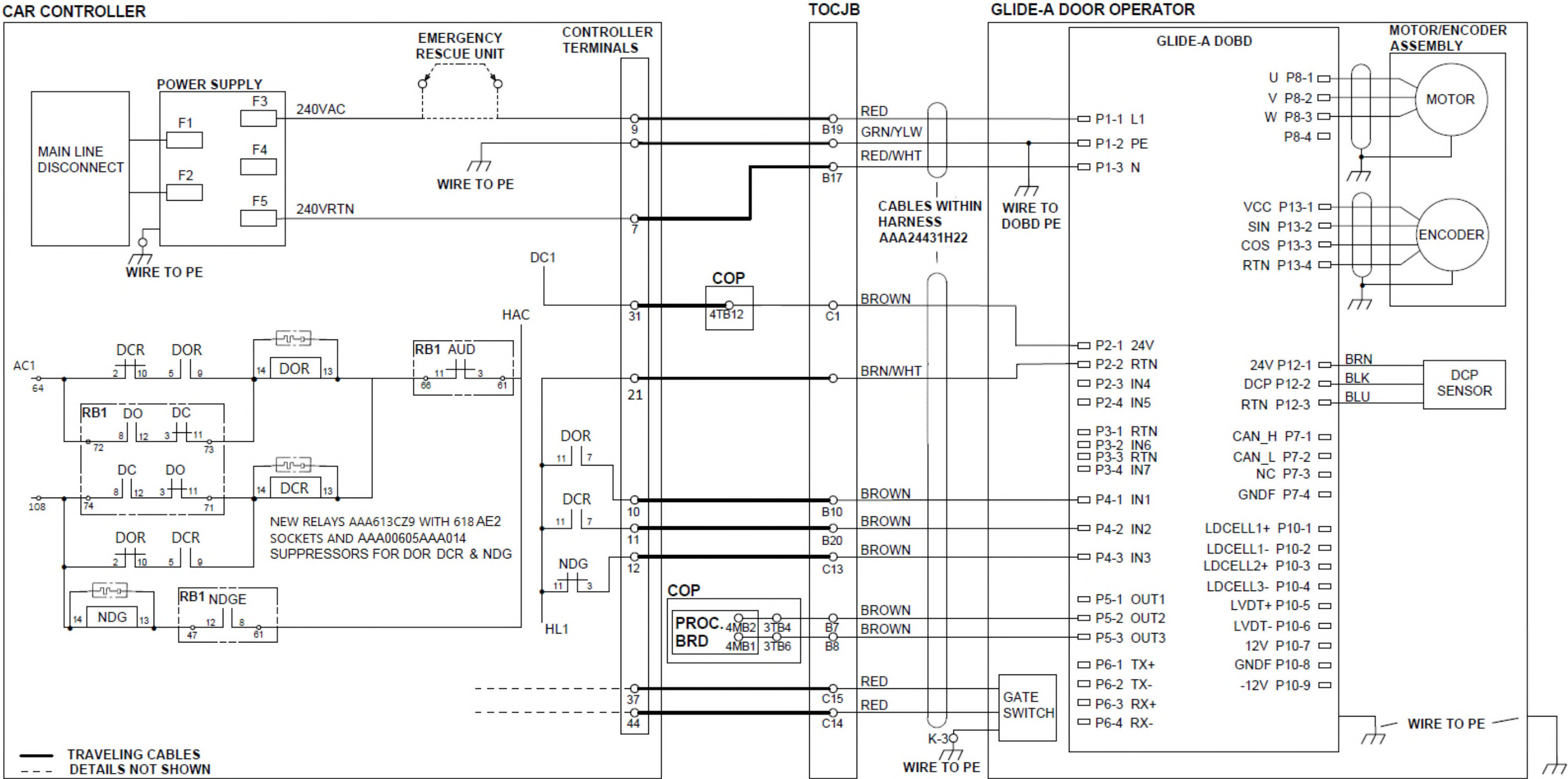


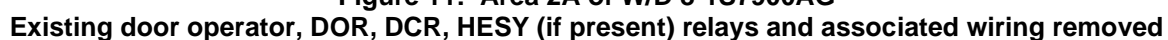
Figure 10: 8-1S7900AG Connection Summary



## **6.2 NSAA Discrete Installation on LRV3 controller with 7777 resistance control door operator (W/D 8-1S7900AG)**

The following wiring diagram depicts installation of the Otis Glide A door operator on a LRV3 controller with existing discrete 7777R resistance control door operator. The following areas are affected:

- **Area 1:** Addition of Glide power supply. Figure 5
- **Area 2:** Removal of existing door operator and re-use of circuits for Glide A. Remove all controller wiring except travel cables from the following controller terminals: 7,9,10,11,12. Figure 11
- **Area 3:** Replacement of existing gate switch with Glide A gate switch, reuse of door signals and installation of new relays for DOR, DCR and NDG. 24VDC supply for Glide A Figure 12
- **Area 4:** Replacement of existing door operator limits circuits and replacement with Glide A limits. Figure 9
- **Connection Summary:** Figures 7 & 10



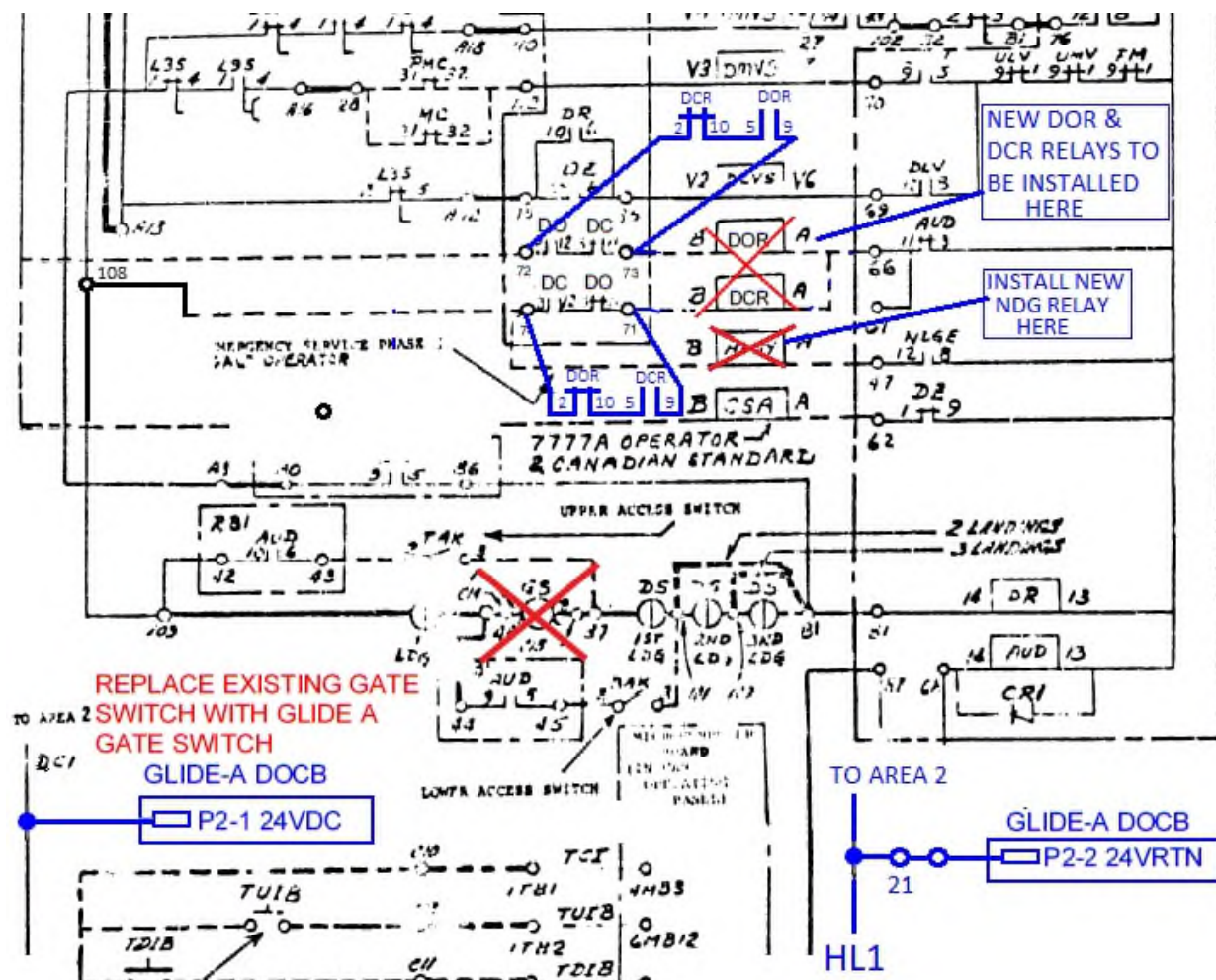


Figure 12: Area 3 of W/D 8-1S7900AG

Existing gate switch replaced with Glide A gate switch, Glide 30VDC power and discrete door signals rewired for use with Glide A. DO, DC and NDG signals to be wired to relays as shown in here and in Figure 7.

### 6.3 NSAA Discrete Installation on LRS3 controller with 7782AA QL door operator (W/D 8-1S7900AS)

The following wiring diagram depicts installation of the Otis Glide A door operator on a LRS3 controller with existing discrete 7782 QL door operator. The following areas are affected:

- **Area 1:** Addition of Glide power supply. Figure 13
- **Area 2:** Removal of existing door operator and re-use of circuits for Glide A. Remove all controller wiring except for travel cables from the following controller terminals: 6, 7, 8, 9, 10, 11, 12. Then add a wire from controller terminal 8 to 21(HL1) Figure 14
- **Areas 4 & 9:** Replacement of existing gate switch with Glide A gate switch, reuse of door signals with Glide A and addition of new DOR, DCR and HES relays. Figures 15 & 16
- **Area 6:** Replacement of existing door operator limits circuits and replacement with Glide A limits. Figure 17
- **Connection Summary** Figure 18

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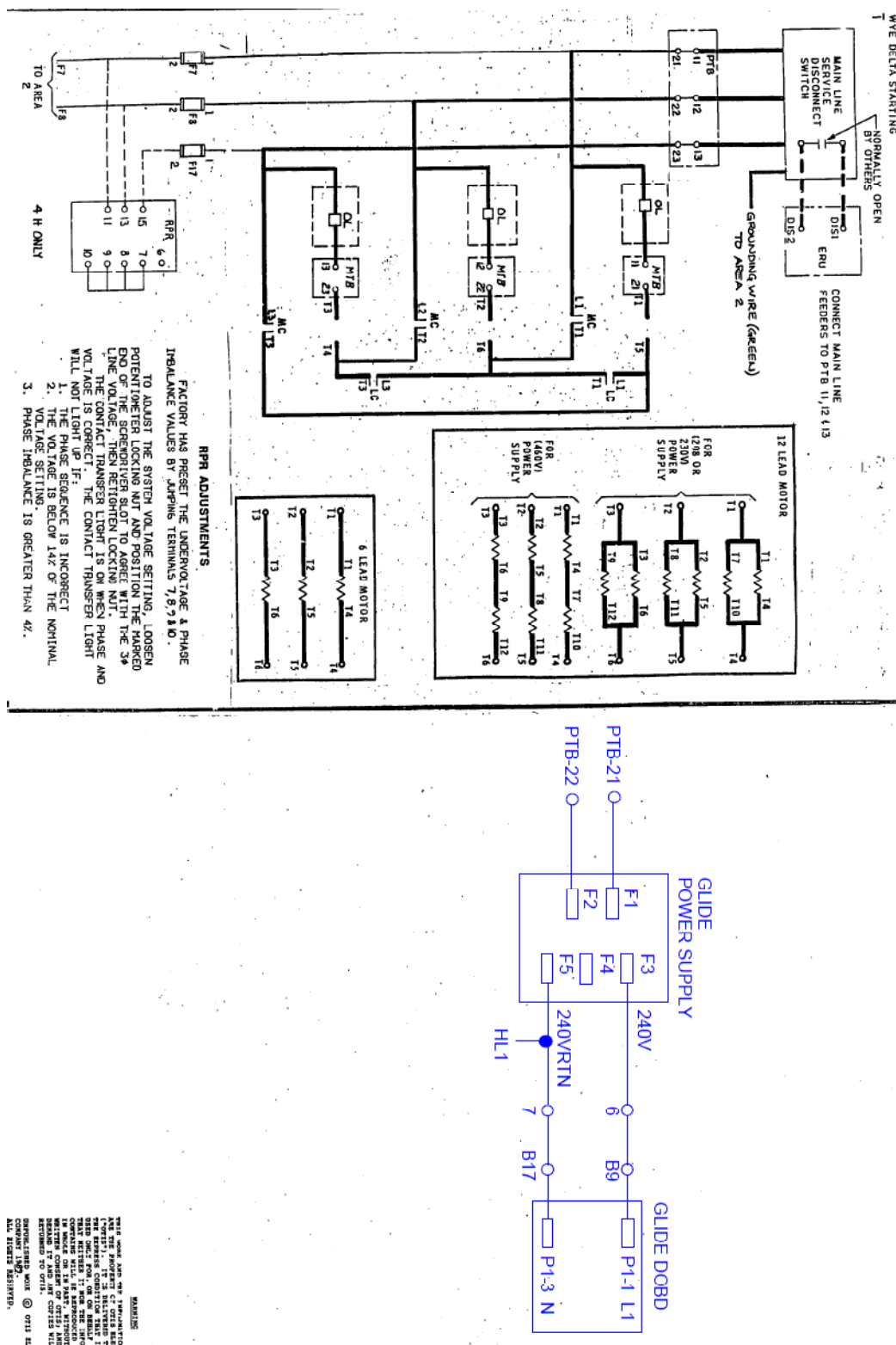


Figure 13: Area 1 of W/D 8-1S7900AS – Glide Power Supply Added



**Existing door operator removed. Travelling cables to be reused with Glide A door operator. DOR, DCR and HES relays to be removed along with all associated wiring. New DOR, DCR and HES relays will be installed. Also showing Glide 24V return connection**

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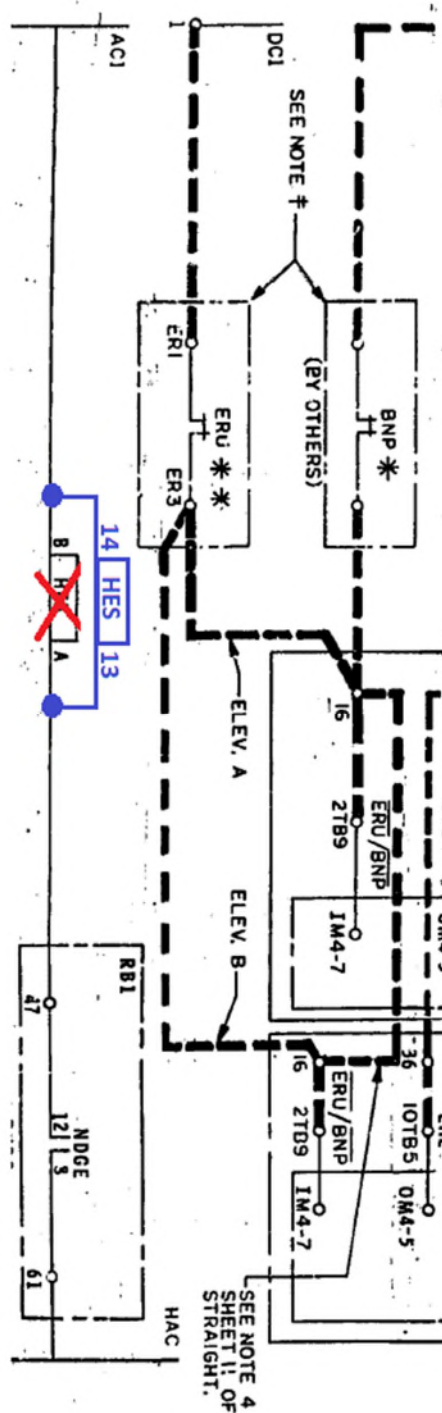


Figure 16: Area 9 of W/D 8-1S7900AS  
HES relay replacement



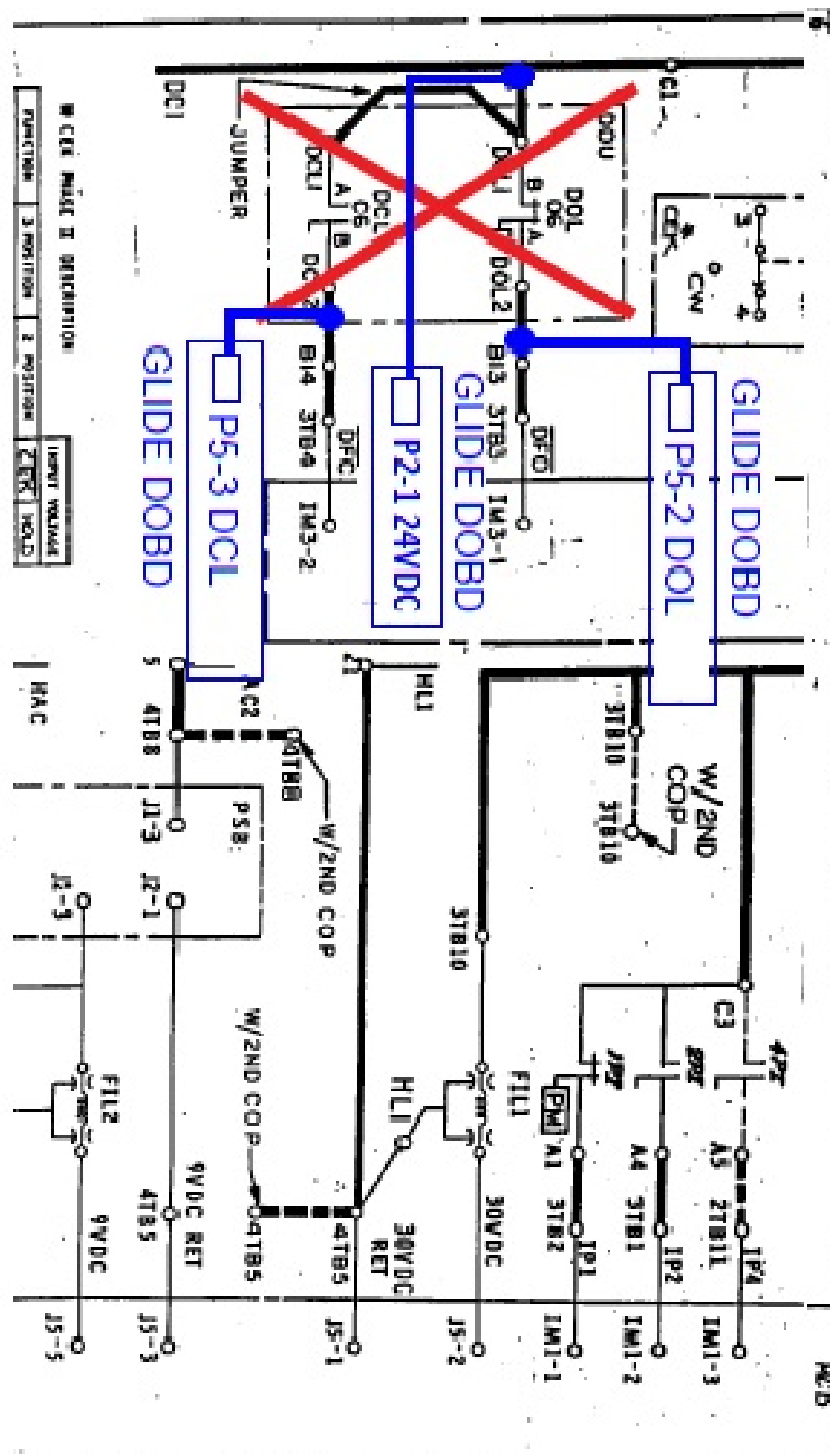


Figure 17: Area 6 of W/D 8-1S7900AS

Replacement of door operator limit circuits and connection of 24V supply for door operator

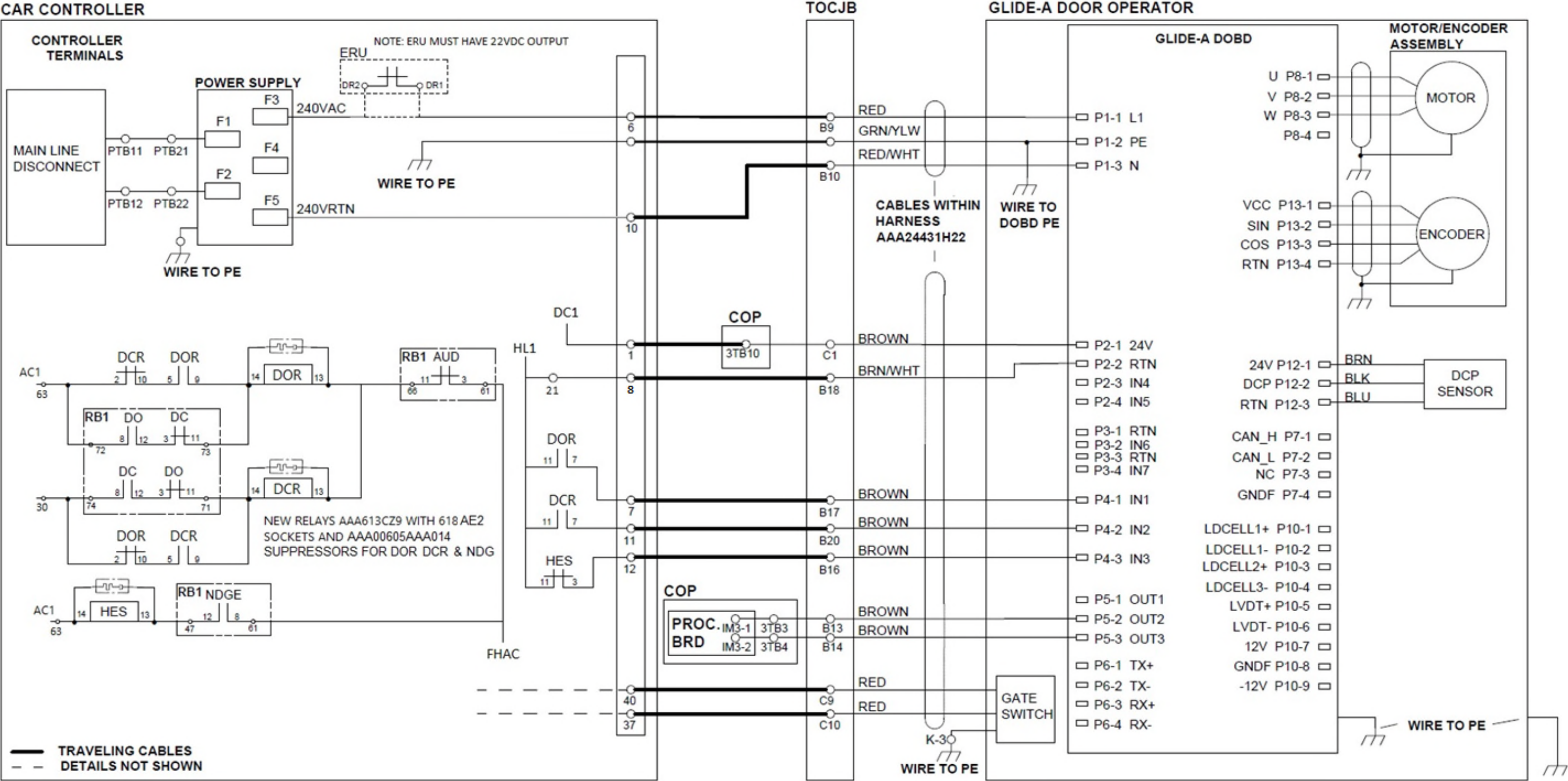


Figure 18: Connection Summary for W/D 8-1S7900AS

#### 6.4 NSAA Discrete Installation on LRV4 controller with 7782AA QL door operator (W/D 8-1S7900AR)

The following wiring diagram depicts installation of the Otis Glide A door operator on a LRV4 controller with existing discrete 7782 QL door operator. The following areas are affected:

- **Area 1:** Addition of Glide power supply. Figure 13 (Same wiring as Area 1 of W/D 8-1S7900AS)
- **Area 2:** Removal of existing door operator and re-use of circuits for Glide A. Remove all controller wiring except travel cables from the following controller terminals: 6, 7, 8, 9, 10, 11, 12. Then add a wire from controller terminal 8 to 21(HL1) Figure 14 (Same wiring as Area 2 of W/D 8-1S7900AS)
- **Area 3:** Replacement of existing gate switch, DOR, and DCR relays. Figure 19
- **Area 5:** Removal of HES relay and replaced with new relay. Figure 20
- **Area 8:** Replacement of existing door operator limits circuits and replacement with Glide A limits. Also, 24VDC supply for the Glide door board. Figure 21
- **Connection Summary** Figure 22

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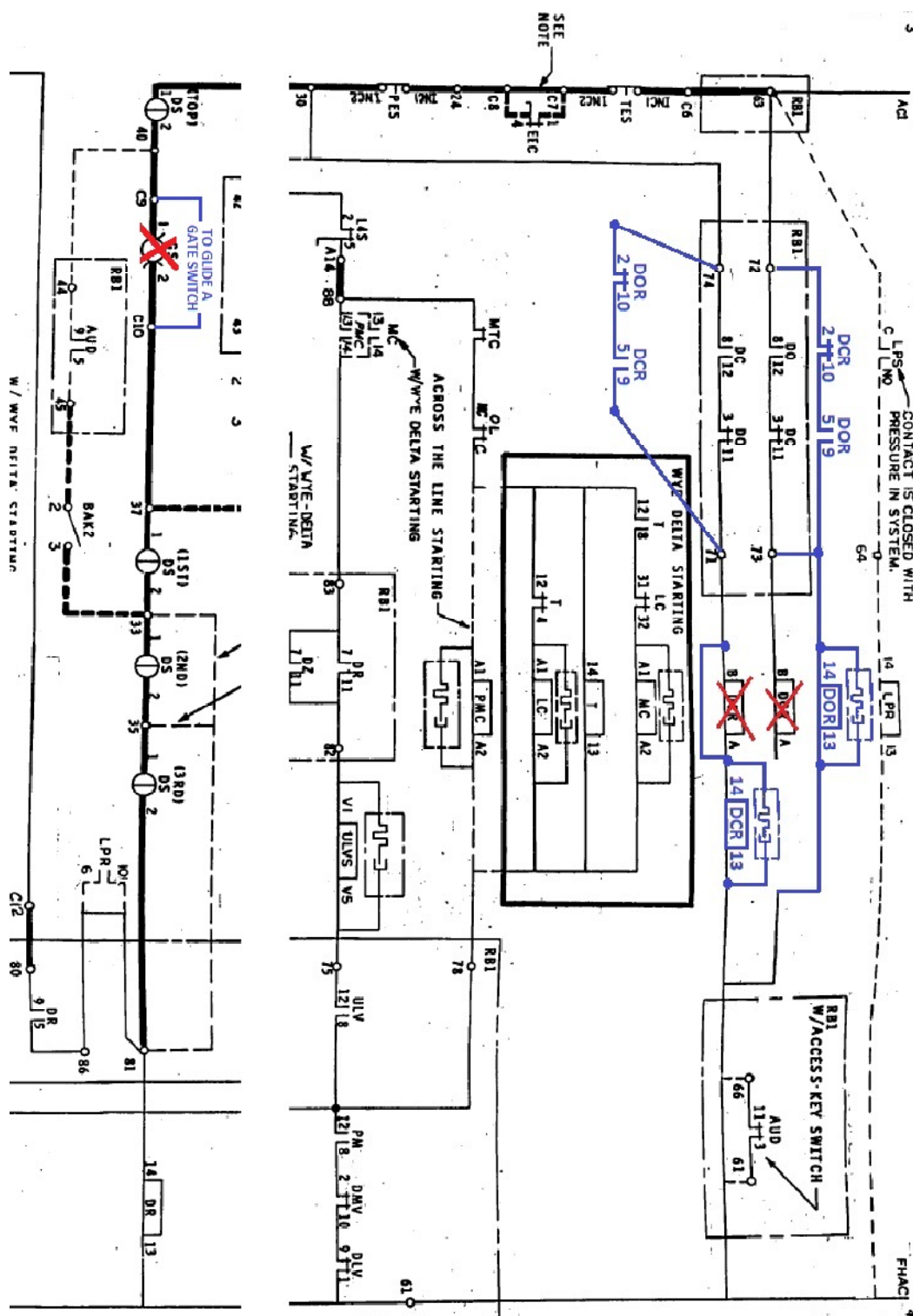
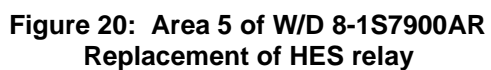
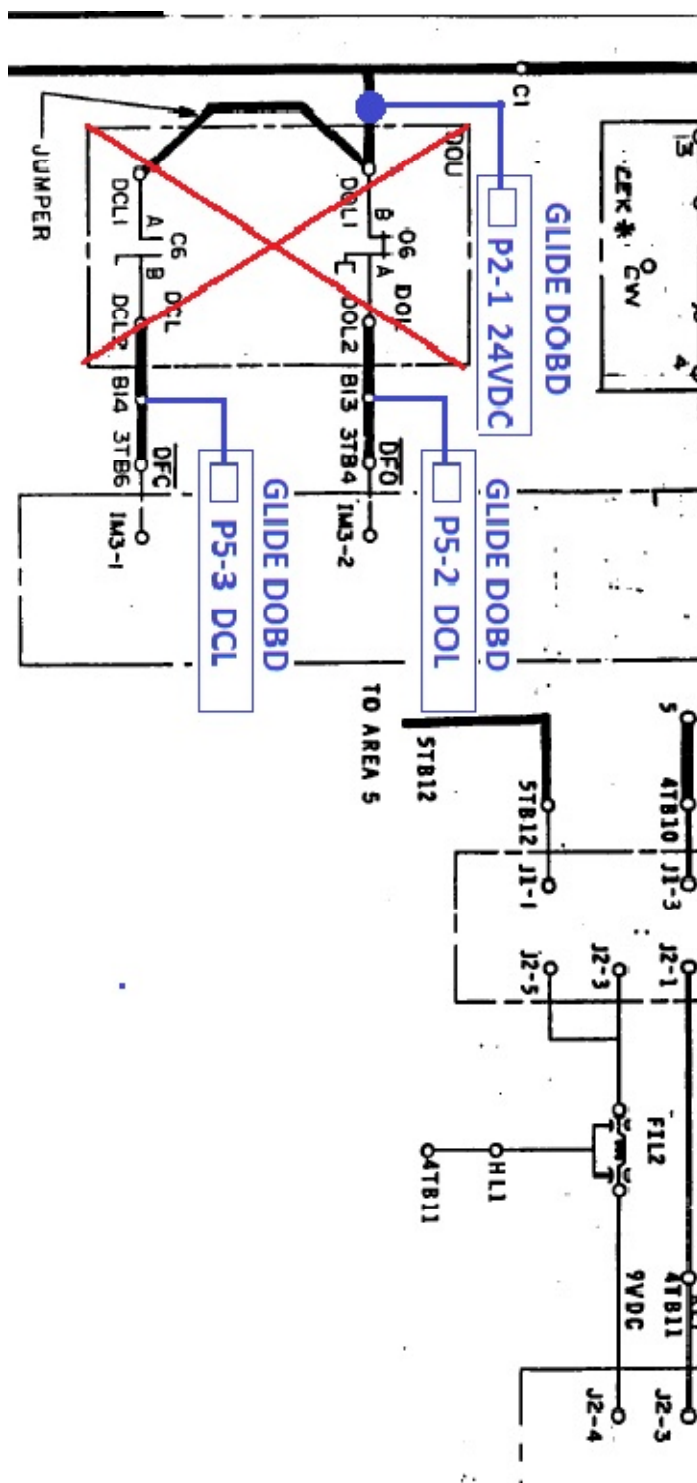


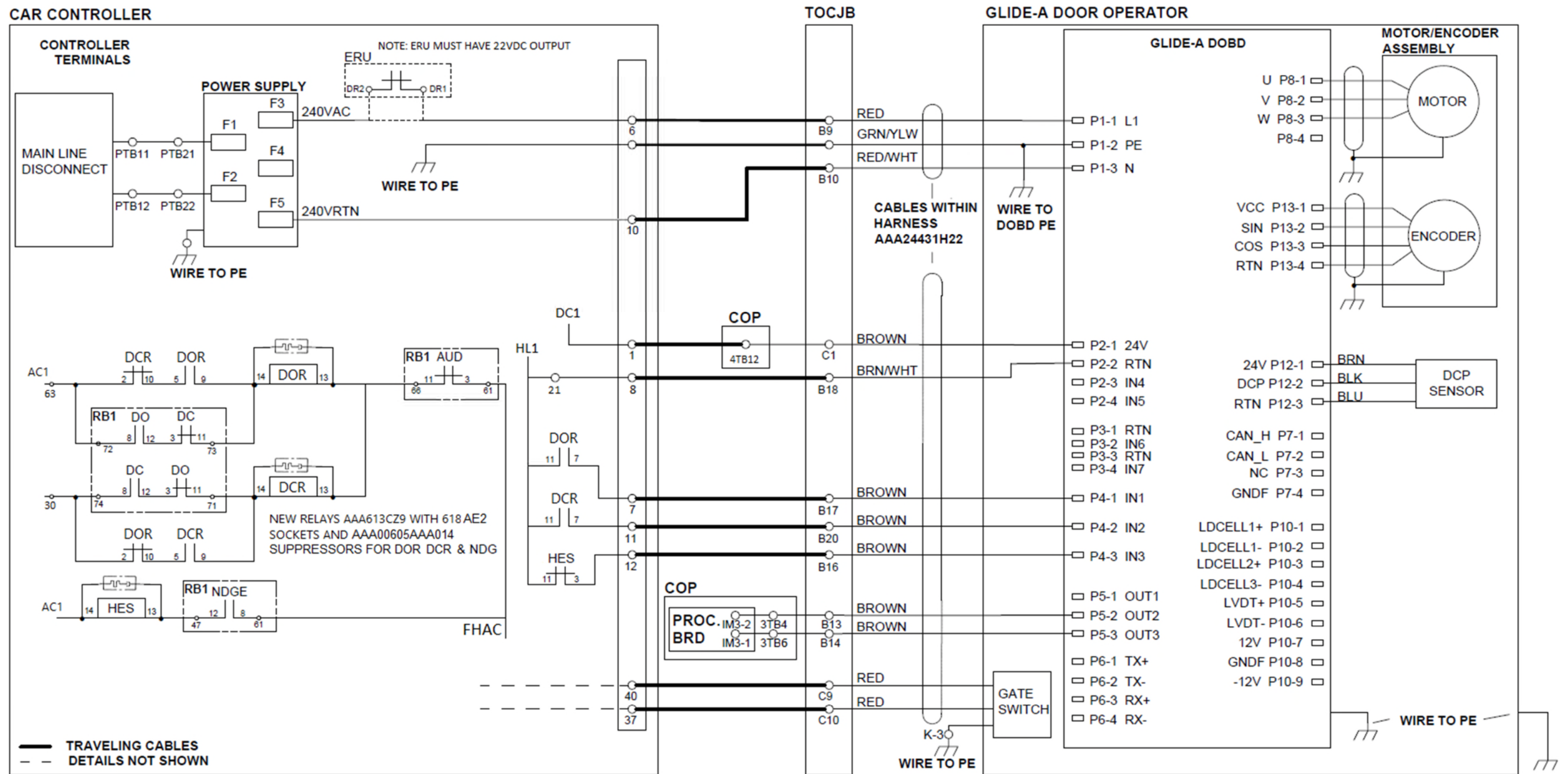
Figure 19: Area 3 of W/D 8-1S7900AR  
Gate switch, DOR and DCR relay replacement





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**Figure 22: Connection Summary for W/D 8-1S7900AR**

## Appendix A: Part Numbers

The following table lists all part numbers this document mentions.

**Table 7: Related Part Numbers**

Description	Part Number
Otis Glide A Electrical Discrete Interface Kit w/24VDC IO	AAA24430AP8
Otis Glide A Power Supply For 208–240 VAC Primary	AAA24430AE1
Otis Glide A Power Supply For 340–416 VAC Primary	AAA24430AE2
Otis Glide A Power Supply For 440–600 VAC Primary	AAA24430AE3
Relay, 24VDC Coil, 4NO 4NC	AAA613CZ8
Diode, 1000V, 1A, 1N4007 (for relay coil suppression)	AAA612T7
DIN rail, 13.5 in. long	401B14
Relay sockets	618AE2
Emergency Return Unit (ERU) 110VDC	ABA7900BH1
Emergency Return Unit (ERU) 220VDC	ABA7900BH2
Enclosure, for AAA24430AE Power Supply	AAA308UD2
Glide-A Controller for MOD and OO	KAA24360ABX1
Fuse, Slo-Blo, 3 A, 600 V	AAA375BK26
Fuse, Slo-Blo, 3.5 A, 600 V	AAA375BK28



## Appendix B: Related Documents

The following table lists all documents this document mentions, as well as documents that contain further information on the topics in this UT-ID which can be found on Unitec's web site at <https://www.unitecparts.com/elevators/products/door-operators/>.

**Table 8: Related Documents**

Document ID	Title
UT-ID 22.17.1-1	<i>Otis Glide A-Specification and Ordering Guide for Unitec Parts Co.</i>
UT-ID 22.17.1-2	<i>Otis Glide A Mechanical Installation Guide</i>
UT-ID 22.17.1-3	<i>Otis Glide A Startup Manual</i>
UT-ID 22.17.1-4	<i>Otis Glide A-Electrical Setup Manual</i>