



- NOTES:
1. WORKMANSHIP STANDARD PER: IPC-J-STD-001D, IPC-A-610, SOLDERING AND ELECTRICAL CONNECTIONS: IPC-S-815B.
 2. MASKED AREA WILL HAVE NO CONFORMAL COATING ON THESE AREAS.
 3. APPLY RTV SILICONE FOR MECHANICAL STRENGTH ON BOTH SIDES OF CAPACITORS, EXCEPT BETWEEN POWER LUGS J7 AND J11.
 4. TORQUE SCREWS FOR HEAT SINK TO MIN 0.4519-5084 Nm [63.99-71.99 OZ. INCH, 4.0-4.5 IN-LBS].
 5. LABEL MUST CONTAIN THE FOLLOWING INFORMATION AND BE LOCATED BETWEEN J7 AND J11.
 6. LABEL MUST HAVE MACHINE MODEL LISTED. SEE "PART NAME" CELL BETWEEN () FOR MACHINE MODEL.
 7. NO VOIDS IN BOTTOM SIDE SOLDERMASK IN THIS AREA (HEAT SINK AREA).
8. BUILD USING QPL BILL OF MATERIAL: BOM1076604RevA.XLS.
9. PROGRAM USING FIRMWARE FILE: Q30006-017_PROLOWES081217.OUT

ITEM NO	QTY	PART NUMBER	DESCRIPTION
1	4	1019218	WASHER, FLAT, 0.14B 0.31D, NYL
2	4	6920	SCREW, PAN, M3 X 0.5 X 10, 4.8
3	1	1015127	PLATE, SINK, HEAT
4	1	1016816	PAD, THERMAL, HEAT SINK
5	1	1006450	CONNECTOR, [AMP], 35PIN MALE

MATERIAL SPECIFICATIONS: NOTED		PAINT - COLOR			00		KJM	01/10/2019
OTHER TREATMENTS AND FINISHES NOTED		PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY	DATE
SCALE: :		DO NOT SCALE DWG		TOLERANCES UNLESS OTHERWISE SPECIFIED		GENERAL NOTES		
DWN: DENNIS DEWEERD 09/03/2009		METRIC TOLERANCES		INCH EQUIVALENT				
MDR:		X.X ±1.5 ±.06		X.XX ±0.75 ±.030				
DES: DENNIS DEWEERD 09/03/2009		X.XXX ±0.250 ±.0100		ANGLES ±1.0°		PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.		
PART NAME: CIRCUITBOARD, LOGIC, [DISK T7/SSR-LOWES]		SHEET 1 OF 3				DWG D SIZE	PART NUMBER 1076604	

FUNCTIONAL TEST INSTRUCTIONS

1. Plug in the following connectors; J5, J6, J8, J10, J17
2. Connect power supply ground to J7 (Stud).
3. Connect power supply 24 Volts to J11 (Stud).
4. Perform the five Operation Modes to complete test.

1st Display Software Revision Mode:

To Begin Testing in Display Software Revision

1. CLOSE switch SW 1.
2. CLOSE switch SW 9 (Turn ON Power)
3. Confirm all panel LED's illuminate momentarily after power up. (D1 through D17)
4. Confirm the blinking illumination, either LED D4 or LED D7.
5. OPEN switch SW 1.
6. Open SW9. (Turn OFF Power)

2nd Normal Mode:

To Begin Testing in Normal Mode:

1. Insure all input signals are in start positions.
 - SW10 = CLOSED
 - SW8 = CLOSED
 - SW11 = CLOSED
 - SW12 = OPEN
 - SW13 = CLOSED
 - SW15 = OPEN
 - SW14 = OPEN
 - J6-34 < 0.9v
 - 0.3v < J6-33 < 0.9v

2. SW 9 = CLOSE (Turn on Power)

3. All panel LED's illuminate momentarily after power up. (D1 through D17).

4. Turn OFF D2 if it remains illuminated. Do this by momentarily closing SW2.

5. Momentarily close SW6.

6. Momentarily close SW7. . One of three LEDs (D7, D8, D9) must turn OFF.

7. Momentarily close SW4.

8. Momentarily close SW5. One of three LEDs (D4, D5, D6) must turn OFF.

9. Open SW10.

10. Confirm the beeper is repeating an EIGHT beep sequence.

11. Close SW10. EIGHT beep sequences continue.

12. Turn ON D2. Do this by momentarily closing SW2.

13. Open SW9. (Turn off Power)

3rd Self Test Mode:

To Begin Testing in Self Test Mode:

1. CLOSE switches SW 2 and SW3.
2. SW 9 = CLOSE (Turn on Power)
3. Two seconds after Main contactor turns on, OPEN switches SW 2 and SW 3.
4. Wait, while Self- Test operates automatically. Test takes about 40-sec.
5. After Self- Test has finished, one of two things will happen.
 - a. System OK = D1 williaht also LED's D12 through D16 remain on.
 - b. System NOT OK = Error Codes will be displayed using other panel LEDs.
6. If System NOT OK -See Error Codes below.

1. If System OK, Open SW 9. (Turn off Power)

Error Codes will be displayed with either flashing or solid illuminated LED.

Flash LED = OPEN fault.

Solid LED = SHORT fault

Self Test Error Codes

LED (Flashing = OPEN, Solid = SHORT) System at Fault

1. D2 Fast Pump
2. D3 Vacuum-Fan
3. D4 Right Brush
4. D5 Left Brush
5. D 6 H ead Actu ator
6. D1 Water Valve

1. D8 Squeegee Actuator

8. D9 Brake

9. D11 Beeper/Horn

5th Propel Test Mode:


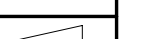
To Begin Testing in Propel Test Mode:

1. CLOSE switches SW2 and SW4.
2. CLOSE SW9 switch.
3. Two seconds after main relay is energized, OPEN switches SW2 and SW4. Verify LED D2 illuminates.
4. Toggle SW15 to closed position, verify D2 extinguishes, D3 illuminates.
5. Momentarily increase voltage on J6-34 for two seconds, from 0.9 volts To 2.0 volts.
6. Observe two led's illuminate, (D15 & D16). Observe LP10 (Horn lamp) illuminate at 1Hz. Power supply amp draw must measure 5 and 10 amps of current. (while the power supply is at 2.0V per step 5) toggle SW15 (direction switch) to closed position. Verify D15 & D16 remain illuminated and LP10 remains illuminated at 1Hz.
7. Toggle SW15 to the open position and return J6-34 to 0.9 volts.
8. Return voltage on J6-34 to 0.9 volts.
9. Momentarily increase voltage on J6-33 for 3 seconds, from 0.9 volts To 3.0 volts.
10. Observe LED's illuminate in sequence (D6, D5, D4) No LED's indicates the pedal is released. 3 LED's indicates that the pedal is fully depressed.
11. Return voltage on J6-33 back to 0.9 volts and observe LED's turn off in sequence (D4, D5, and D6).
12. Open SW9. (Turn off Power)
13. End of Test.

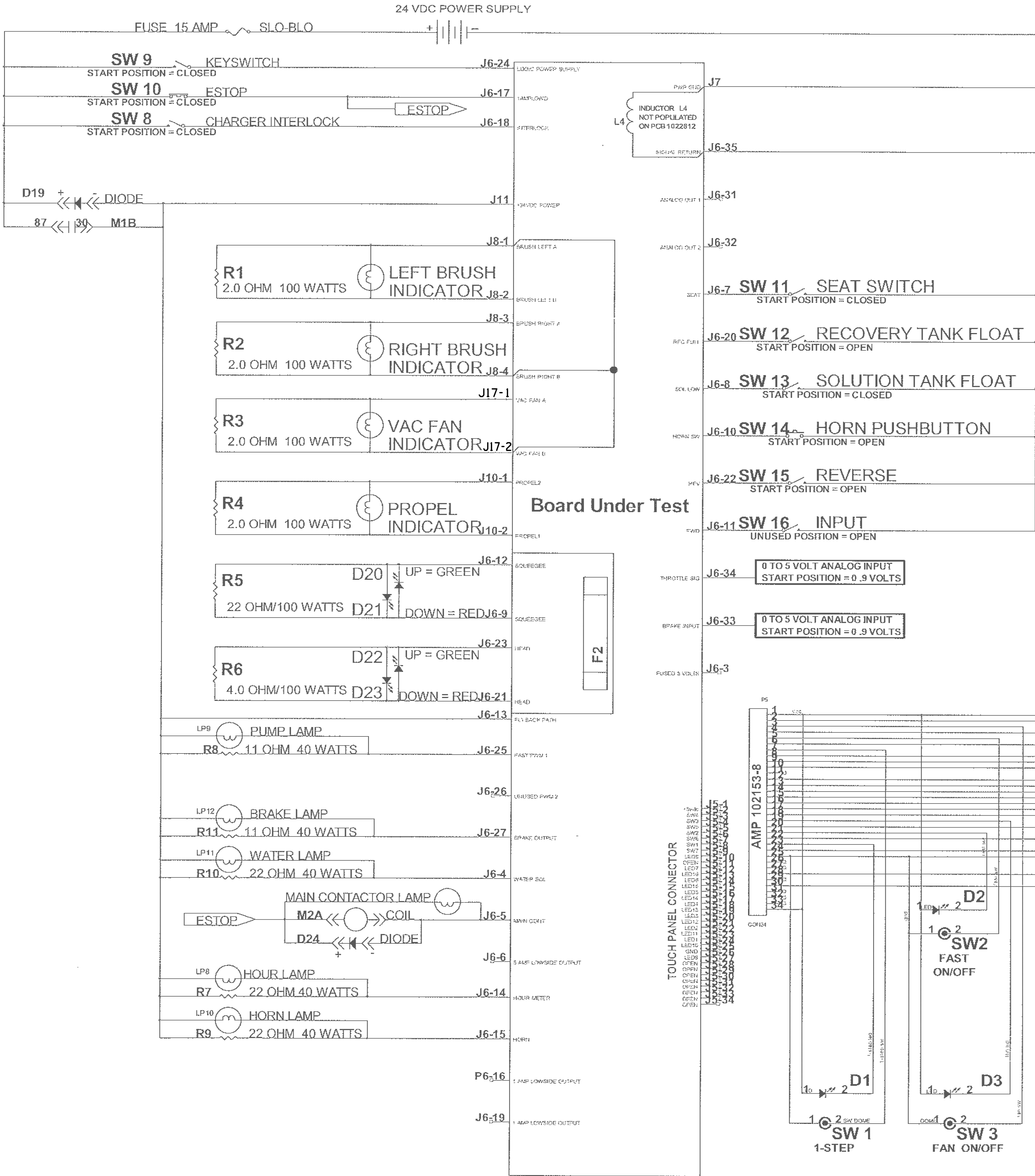
4th Input Display Mode:

To Begin Testing in Input Display Mode:

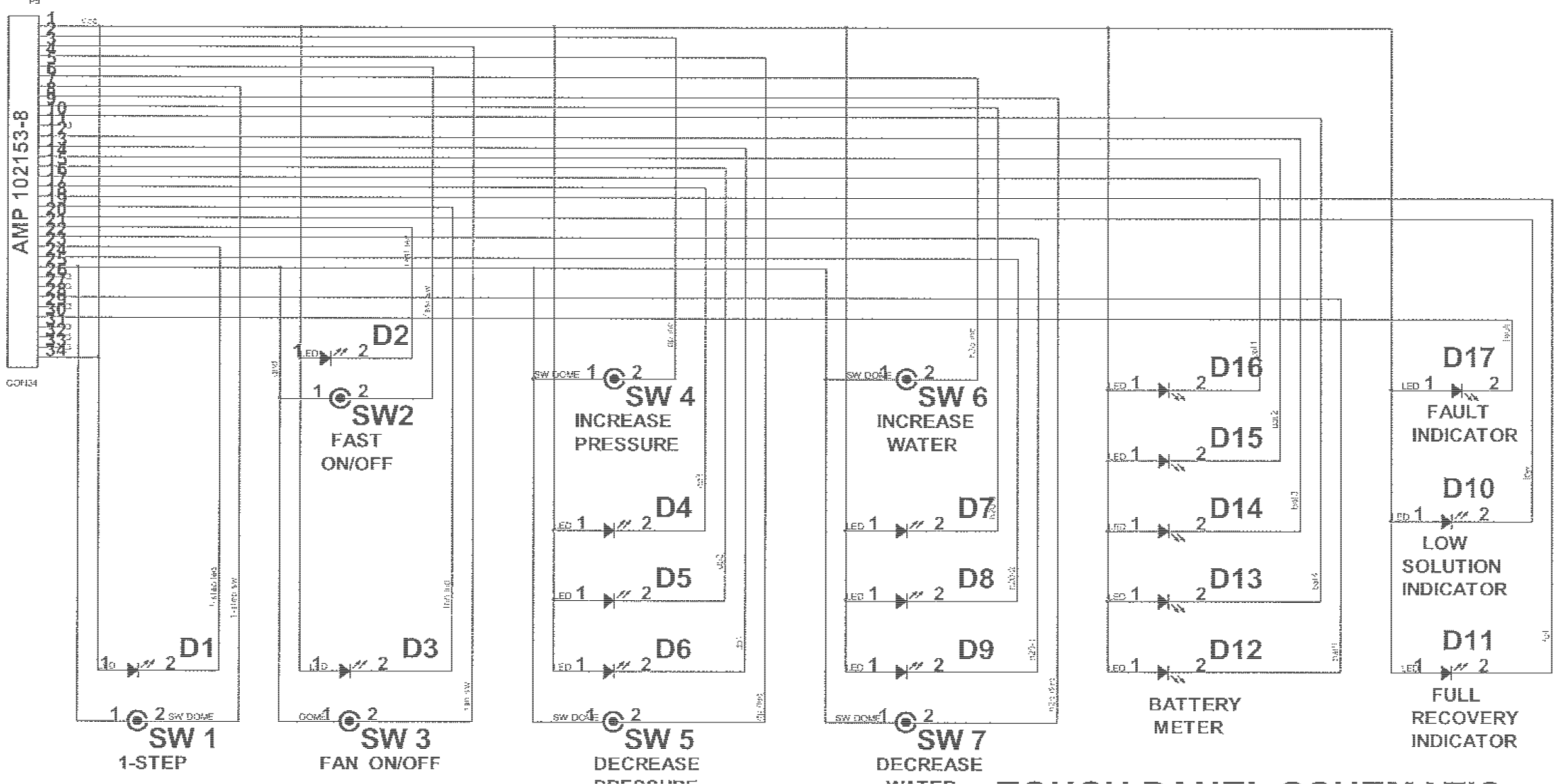
1. CLOSE switch SW 7.
2. CLOSE SW 9 switch.
3. Open switch SW 7 after LED D13 starts to blink.
4. Confirm that HOUR METER light turns on momentarily after power up.
5. OPEN SW 11 = LED D12 is ON
6. CLOSE SW 11 = LED D12 is OFF
7. CLOSE SW 12 for 5 – 7 seconds. = LED D11 latches ON
8. OPEN SW 12 = LED D11 remains ON
9. OPEN SW 13 for 5 – 7 seconds. = LED D10 latches ON
10. CLOSE SW 13 = LED D10 remains ON
11. CLOSE SW 14 = Beeper ON (sounds)
12. OPEN SW 14 = Beeper OFF (silent)
- 13.
- 14.
- 15.
16. OPEN Forward Switch = NOT USED
17. CLOSE Forward Switch = NOT USED
18. Confirm that SW 8 is CLOSED and LED D2 is ON.
19. OPEN SW 8 = LED D2 must turn OFF and beeper repeats a NINE beep sequence.
20. CLOSE SW 8 = LED D2 remains off and beeper continues.
21. Open SW 9. (Turn off Power)

MATERIAL SPECIFICATIONS: NOTED			PAINT - COLOR			00		KJM	01/10/2019
OTHER TREATMENTS AND FINISHES NOTED			PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY	DATE
SCALE:	DO NOT SCALE DWG	TOLERANCES UNLESS OTHERWISE SPECIFIED			GENERAL NOTES				
DWN: DENNIS DEWEERD 09/03/2009		METRIC TOLERANCES	INCH EQUIVALENT	PRIMARY DIMENSIONS ARE METRIC. SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.					
MDR:		LINEAR	±.015	±.030	PROPRIETARY INFORMATION MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.				
		SLOT WIDTH	±0.25	±.010					
		HOLE DIA	±0.25	±.010					
DES: DENNIS DEWEERD 09/03/2009		ANGULAR	±2°						
		MATCH SURFACES	3.2 RMS	125 RMS					
PART NAME:	CIRCUITBOARD, LOGIC, [DISK T7/SSR-LOWES]				SHEET 2 OF 3		DWG D SIZE	PART NUMBER 1076604	


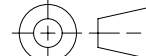
PENDING RELEASE



TOUCH PANEL CONNECTOR



TOUCH PANEL SCHEMATIC

MATERIAL SPECIFICATIONS: NOTED		PAINT - COLOR			00		KJM	01/10/2019																							
OTHER TREATMENTS AND FINISHES NOTED		PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY	DATE																							
SCALE: NONE	DO NOT SCALE DWG	<div>TOLERANCES UNLESS OTHERWISE SPECIFIED</div> <table><tr><th colspan="2">METRIC TOLERANCES</th><th colspan="2">INCH EQUIVALENT</th></tr><tr><td>LINEAR</td><td>±.075</td><td colspan="2">±.030</td></tr><tr><td>SLOT WIDTH</td><td>±0.25</td><td colspan="2">±.010</td></tr><tr><td>HOLE DIA</td><td>±0.25</td><td colspan="2">±.010</td></tr><tr><td>ANGULAR</td><td>±2°</td><td colspan="2"></td></tr><tr><td>MACH SURFACES</td><td>3.2 RMS</td><td colspan="2">125 RMS</td></tr></table>		METRIC TOLERANCES		INCH EQUIVALENT		LINEAR	±.075	±.030		SLOT WIDTH	±0.25	±.010		HOLE DIA	±0.25	±.010		ANGULAR	±2°			MACH SURFACES	3.2 RMS	125 RMS		GENERAL NOTES PRIMARY DIMENSIONS ARE METRIC. SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.		<div></div>	
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DES: DENNIS DEWEERD 09/03/2009																															
PART NAME: CIRCUITBOARD, LOGIC, [DISK T7/SSR-LOWES]		SHEET 3 OF 3		<div></div>		DWG D SIZE	PART NUMBER 1076604																								

PENDING RELEASE