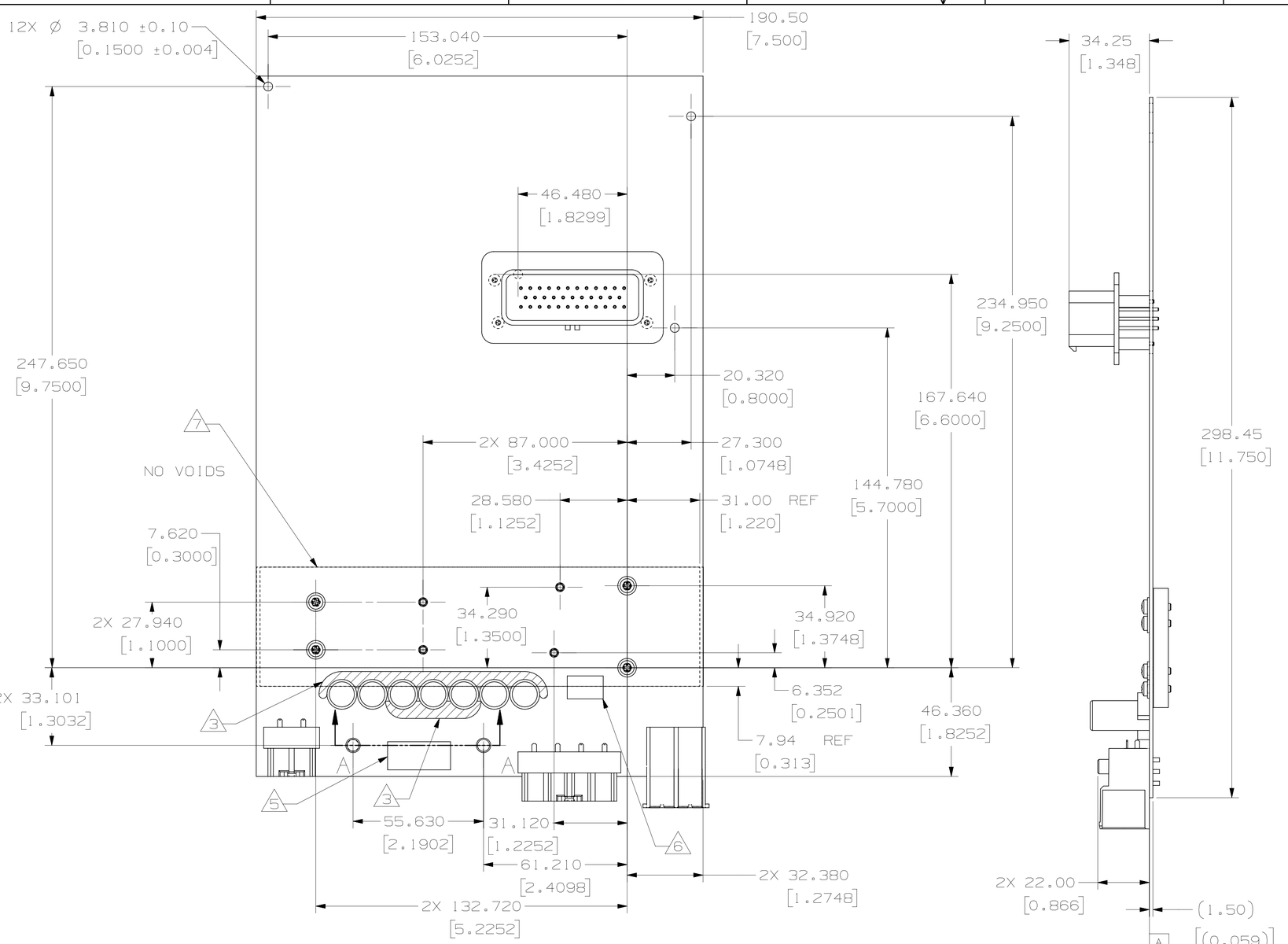
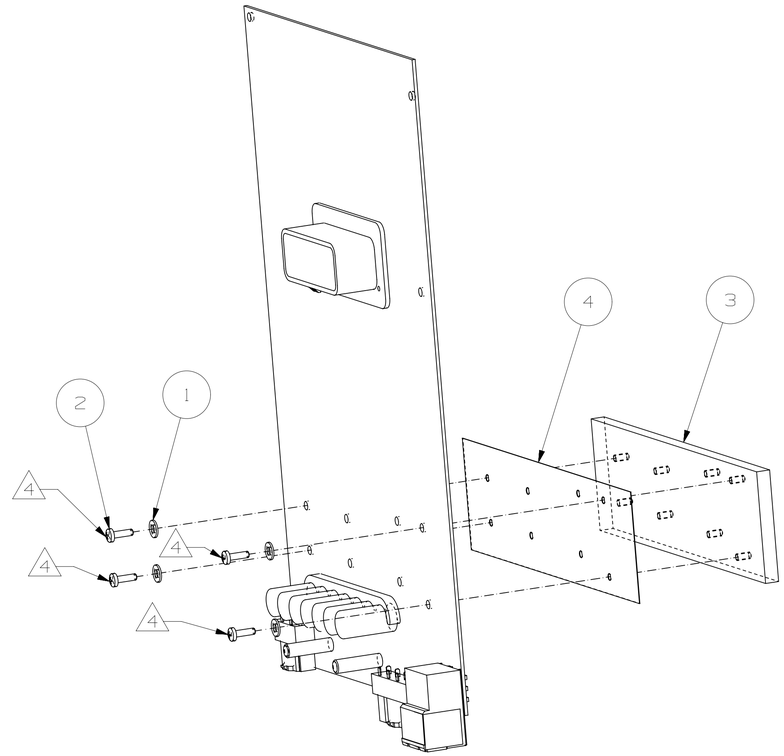
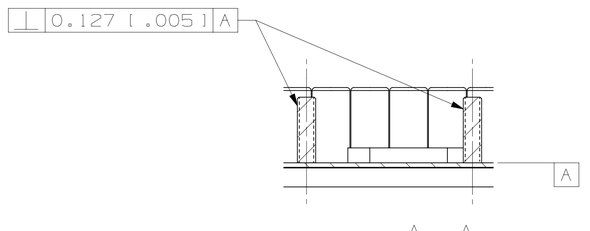




ITEM NO	QTY	PART NUMBER	DESCRIPTION
1	4	1019218	WASHER, FLAT, 0.14B 0.31D, NYL
2	4	6920	SCREW, PAN, M3 X 0.5 X 10, 4.8
3	1	1015127	PLATE, SINK, HEAT
4	1	1016816	PAD, THERMAL, HEAT SINK
5	1	1006450	CONNECTOR, [AMP], 35PIN MALE

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.
   a - COMPONENTS: J2, J5, J6, J8, J9, J10,J11, J15, J16, CR2, F2, J7.
   b - (12) MOUNTING HOLES AND UNDER SCREW HEADS AND WASHERS.
   c - AREA UNDER HEAT SINK SIL PAD ON BOTTOM OF PCB.
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.
   a - TENNANT'S ASSEMBLY PART NUMBER WITH CURRENT DRAWING REVISION (1076606-00).
   b - TENNANT'S OPL BOM PART NUMBER WITH CURRENT ALPHA REVISION (BOM1076606revA).
   c - MANUFACTURER PART NUMBER.
   d - MANUFACTURER SERIAL NUMBER.
   e - TO BE IN A POSITION WHERE RTV DOES NOT MASK THE PRINT ON THIS LABEL.
   f - MANUFACTURERS PART NUMBER MUST FACILITATE TRACEABILITY OF PARTS USED TO CREATE THE POPULATED BOARD.
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 OPL BUILD OF MATERIALS: BOM1076606revA.XLS .
9. PROGRAM USING FIRMWARE FILE: Q30017-006_PROWCYL08[1]7.OUT



SECTION A - A

PENDING RELEASE

MATERIAL SPECIFICATIONS: NOTED	PAINT - COLOR		
OTHER TREATMENTS AND FINISHES NOTED	PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE

REV	ECO	BY	DATE
00		KJM	01/07/2019

SCALE: 1:1 — DO NOT SCALE DWG

DWN: RICK ELUSHIK 08/13/2009

MDR:

DES: STACEY CLEMENS 10/28/2008

PART NAME: CIRCUITBOARD, LOGIC, [CYL T7/SSR-REV 17]

TOLERANCES UNLESS OTHERWISE SPECIFIED

METRIC TOLERANCES	INCH EQUIVALENT
X.X ±1.5	±.06
X.XX ±0.75	±.030
X.XXX ±0.250	±.0100
ANGLES ±1.0°	

GENERAL NOTES
PRIMARY DIMENSIONS ARE METRIC, SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.

SHEET 1 OF 3

TENNANT

DWG SIZE: D

PART NUMBER: 1076606

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 willliaht 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.
l. 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. Dl Water Valve
l. 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.
4. Momentarily increase voltage on J6-34 for two seconds, from 0.9 volts To 2.0 volts.
5. OBSERVE TWO LEDS ILLUMINATE, (D15 AND D16). POWER SUPPLY AMP DRAW MUST MEASURE BETWEEN, 5 & 10 AMPS OF CURRENT
6. Return voltage on J6-34 to 0.9 volts.
7 .Momentarily increase voltage on J6-33 for 3 seconds, from 0.9 volts To 3.0 volts.
8. 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.
9. Return voltage on J6-33 back to 0.9 volts and observe LED's turn off in sequence (D4, D5, and D6).
10. Open SW9. (Turn off Power)
11. End ofTest.

4th **Input Display Mode:**

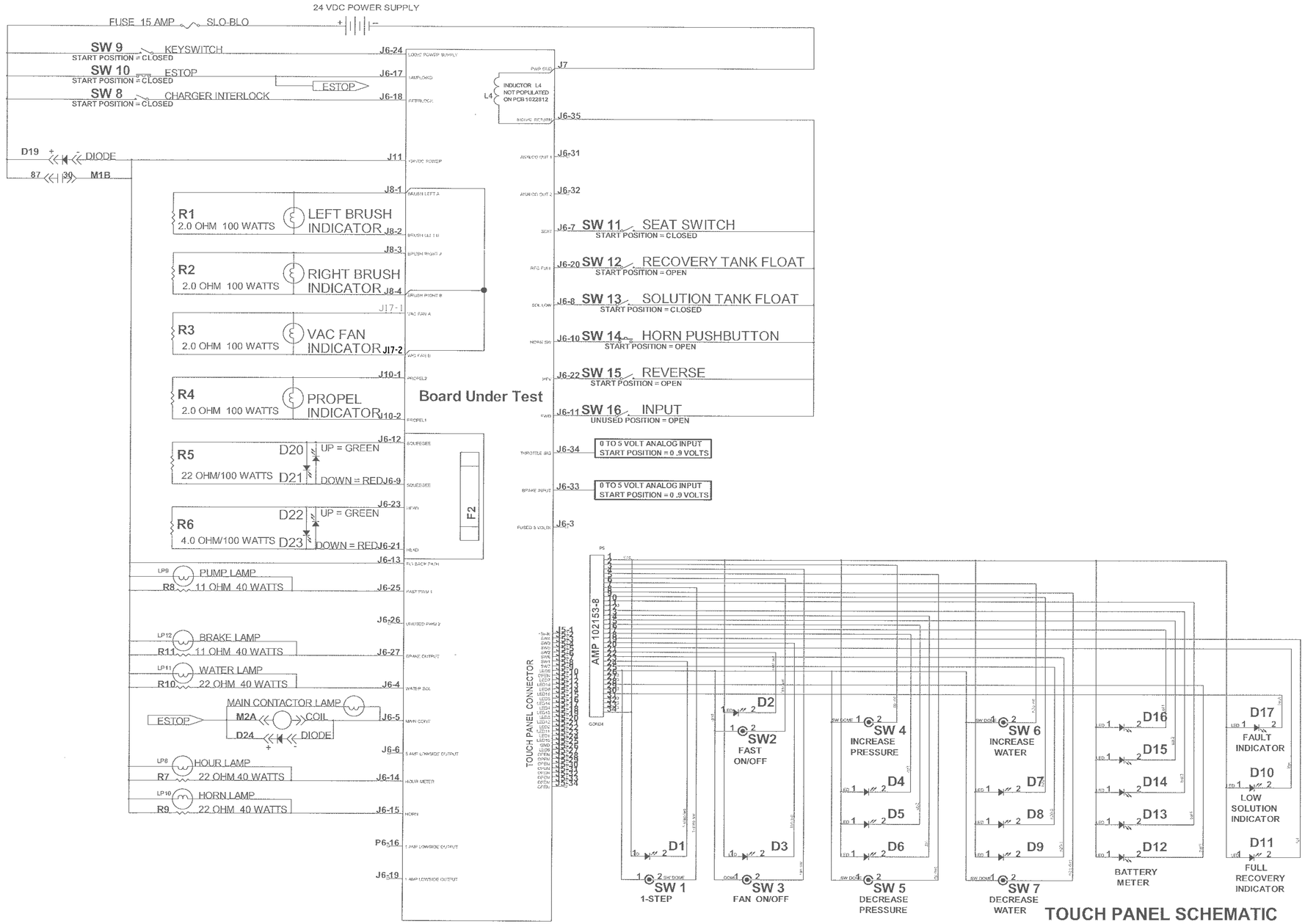
To Begin Testing in Input Display Mode:
1. CLOSE switch SW 7.
2. CLOSE SW 9 switch.
3. Open switch SW 7 after LED D13 starts to blink.
4. Confirm that HOUR METER light turns on momentarily after power up.
5. OPEN SW 11 = LED D12 is ON
6. CLOSE SW 11 = LED D12 is OFF
7. CLOSE SW 12 for 5 – 7 seconds. = 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. CLOSE SW 15 = Beeper ON (One second on and one off.)
14. If silent. Jump to: (Enable Reverse Alarm) and then restart Input Display Mode.
15. OPEN SW 15 = Beeper OFF (silent)
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)

Enable Reverse Alarm

1. Power up machine in REVERSE while holding the HORN button.
2. Continue to hold the HORN button:
   If HORN sounds, reverse alarm is enabled.
   If HORN is silent, reverse alarm is disabled.
3. Shut off machine, setting is stored.

PENDING RELEASE

MATERIAL SPECIFICATIONS: NOTED		PAINT - COLOR			00		KJM 01/07/2019
OTHER TREATMENTS AND FINISHES NOTED		PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO	BY DATE
SCALE: NONE DO NOT SCALE DWG	TOLERANCES UNLESS OTHERWISE SPECIFIED			GENERAL NOTES: PRIMARY DIMENSIONS ARE METRIC, SECONDARY DIMENSIONS WITH BRACKETS ARE INCH. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE AFTER TREATMENTS AND FINISHES.	TENNANT		
DWN: RICK ELUSHIK 08/13/2009	METRIC TOLERANCES	INCH EQUIVALENT					
MDR:	LINEAR ±0.75	±.030					
DES: STACEY CLEMENS 10/28/2008	SLOT WIDTH ±0.25	±.010		PROPRIETARY INFORMATION: MAY NOT BE REPRODUCED OR DISCLOSED TO OTHERS WITHOUT WRITTEN PERMISSION OF TENNANT COMPANY.			
	HOLE DIA ±0.25	±.010					
	ANGULAR ±2°						
	MACH SURFACES 3.2 RMS	125 RMS					
PART NAME: CIRCUITBOARD, LOGIC, [CYL T7/SSR-REV 17]				SHEET 2 OF 3	DWG SIZE D	PART NUMBER 1076606	



MATERIAL SPECIFICATIONS: NOTED	PAINT - COLOR			00	KJM 01/07/2019
OTHER TREATMENTS AND FINISHES NOTED	PAINT - GLOSS	PAINT - PERFORMANCE	PAINT - ACCEPTANCE	REV	ECO BY DATE

SCALE: NONE — DO NOT SCALE DWG

DWN: RICK ELUSHIK 08/13/2009

MDR:

DES: STACEY CLEMENS 10/28/2008

PART NAME: CIRCUITBOARD, LOGIC, [CYL T7/SSR-REV 17]

TOLERANCES UNLESS OTHERWISE SPECIFIED	METRIC TOLERANCES	INCH EQUIVALENT
LINEAR	±0.75	±.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.

TENNANT

SHEET 3 OF 3

DWG SIZE D — PART NUMBER 1076606

PENDING RELEASE