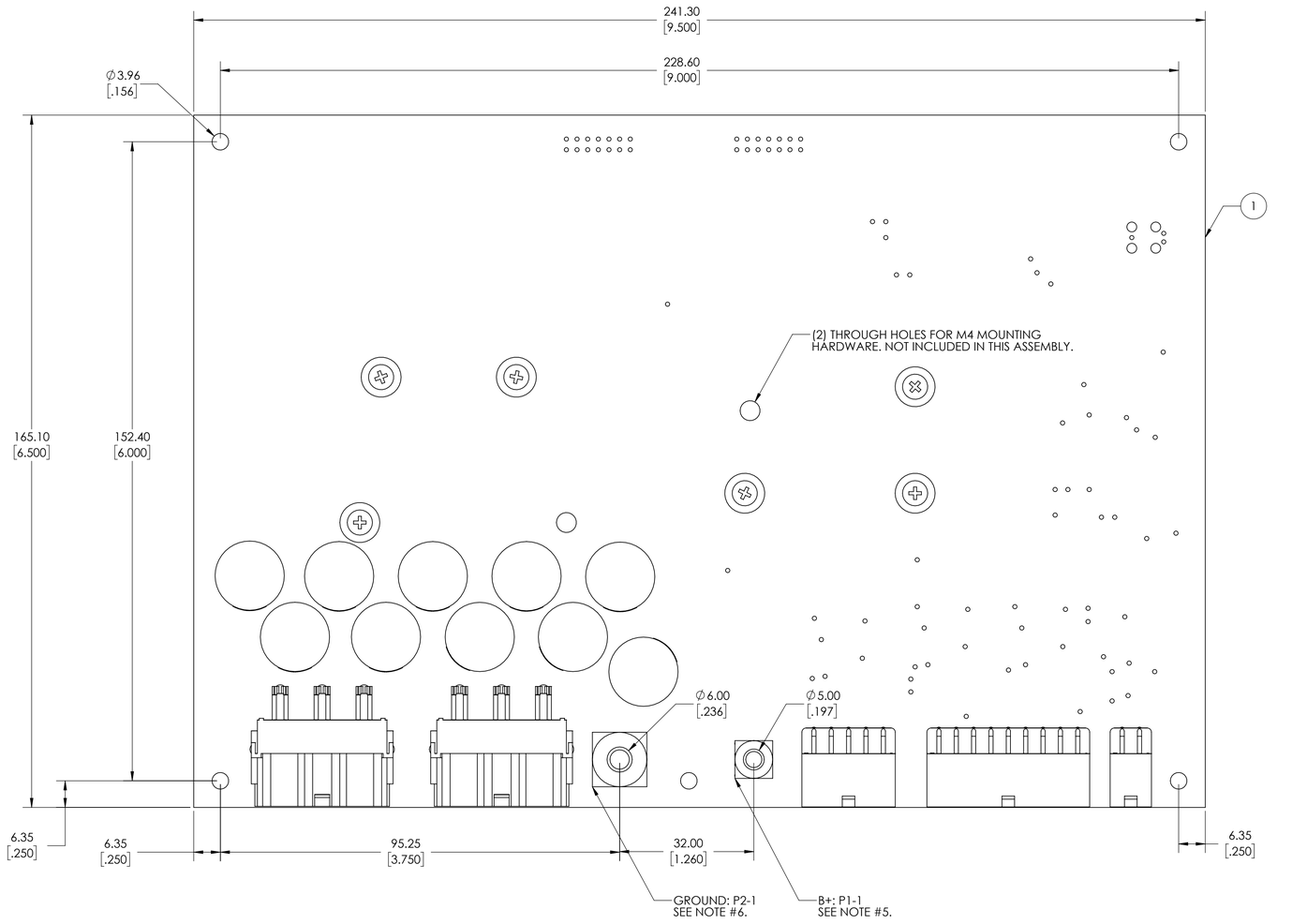
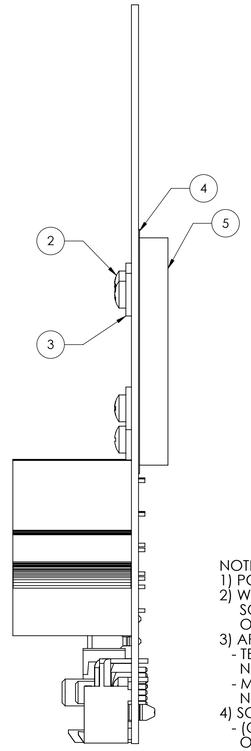
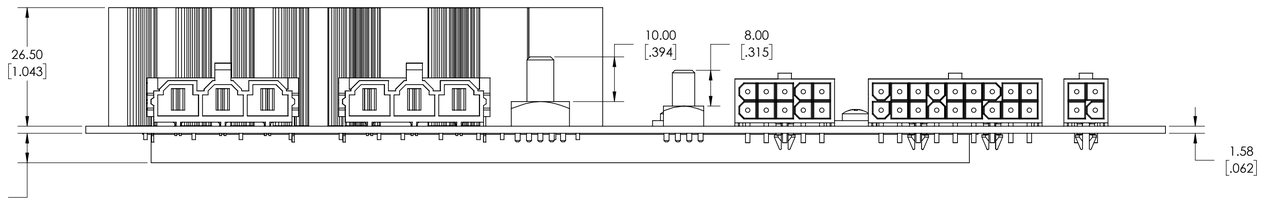
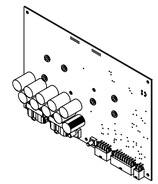
ITEM #	QTY.	PART #	DESCRIPTION
1	1	REFERENCE QPL BILL OF MATERIAL. SEE NOTE #1	PCB ASSEMBLY
2	6	McMASTER CARR #92005A118 OR EQUIVALENT	SCREW, M3. REFER TO NOTE #4.
3	6	KEYSTONE #3349 OR EQUIVALENT	WASHER, M3. REFER TO NOTE #4.
4	1	1207443-00	SIL PAD
5	1	1207360-00	HEAT SINK







NOTES:
1) PCB ASSEMBLY TO BE BUILT USING QPL BILL OF MATERIAL: **BOM1243629revE** (01)
2) WORKMANSHIP STANDARD PER: IPC-J-STD-001E, IPC-A-610E-CLASS 2
   SOLDERING AND ELECTRICAL CONNECTIONS : IPC-S-815B
   OR MORE CURRENT VERSIONS OF THESE STANDARDS
3) APPLY LABEL OR LABELS WITH THE FOLLOWING INFORMATION:
   - TENNANT PART NUMBER AND REVISION
     NOTE: THIS NUMBER AND REVISION SHOULD MATCH THE TENNANT DRAWING REVISION.
   - MANUFACTURER'S LABEL WITH SERIAL NUMBER
     NOTE: PLACE LABEL(S) SO THEY DO NOT GET COVERED UP BY THE HEATSINK
4) SCREWS AND WASHERS HOLDING THE HEATSINK (ITEM #5) AND SIL-PAD (ITEM #4):
   - (QTY. 6) SCREW, PAN HEAD, PHILLIPS, M3 X O.5, 8.0MM LONG, DIN 7985. McMASTER CARR #92005A118 OR EQUIVALENT. (ITEM #2)
   - (QTY. 6) WASHER, NYLON, FLAT, #6, 0.14B 0.31D .03. KEYSTONE #3349 OR EQUIVALENT, (ITEM #3)
   - TO BE APPLIED IN SIX LOCATIONS AS SHOWN
   - SCREW HEAD TO BE ON THE TOP SIDE OF THE PCB AS SHOWN
   - NYLON WASHERS (ITEM #3) TO BE LOCATED BETWEEN THE SCREW HEAD AND THE PCB (ITEM #1)
   - SCREWS (ITEM #2) TO BE TORQUED TO 0.50 Nm
5) P1 (B+) POWER CONNECTION (FLUSH PRESS FIT). REF. QPL BOM
6) P2 (B-, GROUND) POWER CONNECTION (FLUSH PRESS FIT). REF. QPL BOM
7) EACH ASSEMBLY TO HAVE CONTINUITY TEST BETWEEN THE "P1-1" STUD(= B+) AND THE METAL HEATSINK. NO CONTINUITY = PASS. CONTINUITY = IMPROPERLY INSTALLED SIL-PAD
8) CONFORMAL COATING APPLIED AS PER NOTES ON SHEET 2 OF 2
9) EACH ASSEMBLY TO BE ICT TESTED AND FUNCTIONALLY TESTED
10) ASSEMBLY TO BE MANUFACTURED PER RoHS/LEAD FREE STANDARDS
11) AREA BENEATH THE HEATSHINK (BACK SIDE) TO BE FREE OF SOLDER BUMPS. MASK OFF OR PROGRAM WAVE SOLDER SYSTEM TO PREVENT SOLDER BUILD UP IN THIS AREA
12) REFER TO THE NOTES ON SHEET 2 OF 2 FOR DETAILED INSTRUCTIONS FOR APPLYING RTV AROUND COMPONENTS
13) ADDS DRY VAC. REQUIRES DIFFERENT HARNESS WIRING
14) ALL DIMENSIONS FOR REFERENCE ONLY
15) SOFTWARE CODE:
   A) Q30060-002 (BOOT_LOADER_TM4C.BIN) . (U5)
   B) Q30110-001 (CIRRUS_MSCRUB_PRODUCTION_1_06.BIN). (U5)
   C) Q30064-001 (MOTOR_CONTROLLER_V25_1.HEX). (U51, U58)



REV-01 CHANGES:
1) REMOVE U4 FROM QPL BOM

REV-02 CHANGES:
1) CHANGE QPL BILL OF MATERIAL TO: BOM1243629revE, CHANGED TO NON-USB MICRO.

REV	ECO
02	37291

CHANGED BY: PAUL HENDERSON	DATE: 09/09/2022	
MDR: STACY GAHLON	07/22/2019	
DES: JOHN HAEG	12/28/2015	

MATERIAL SPECIFICATIONS:	OTHER TREATMENTS AND FINISHES	PAINT - COLOR		
NOTED	NONE	GLOSS	PERFORMANCE	ACCEPTANCE
PART NAME: CIRCUITBOARD ASSY [SCRUB, DRYVAC, M/T17]				

WELDING NOTATION IN ACCORDANCE WITH AWS A2.4-98

UNLESS OTHERWISE SPECIFIED DIMENSION TOLERANCING IN ACCORDANCE WITH ASME Y14.5M-2009 ALL UNTOLERANCED DIMENSIONS ARE BASIC AND CONTROLLED BY:

X.X	±0.8	±[.03]
X.XX	±0.25	±[.010]
X.XXX	±0.125	±[.0049]
ANGLES	±0.5°	

GENERAL NOTES

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

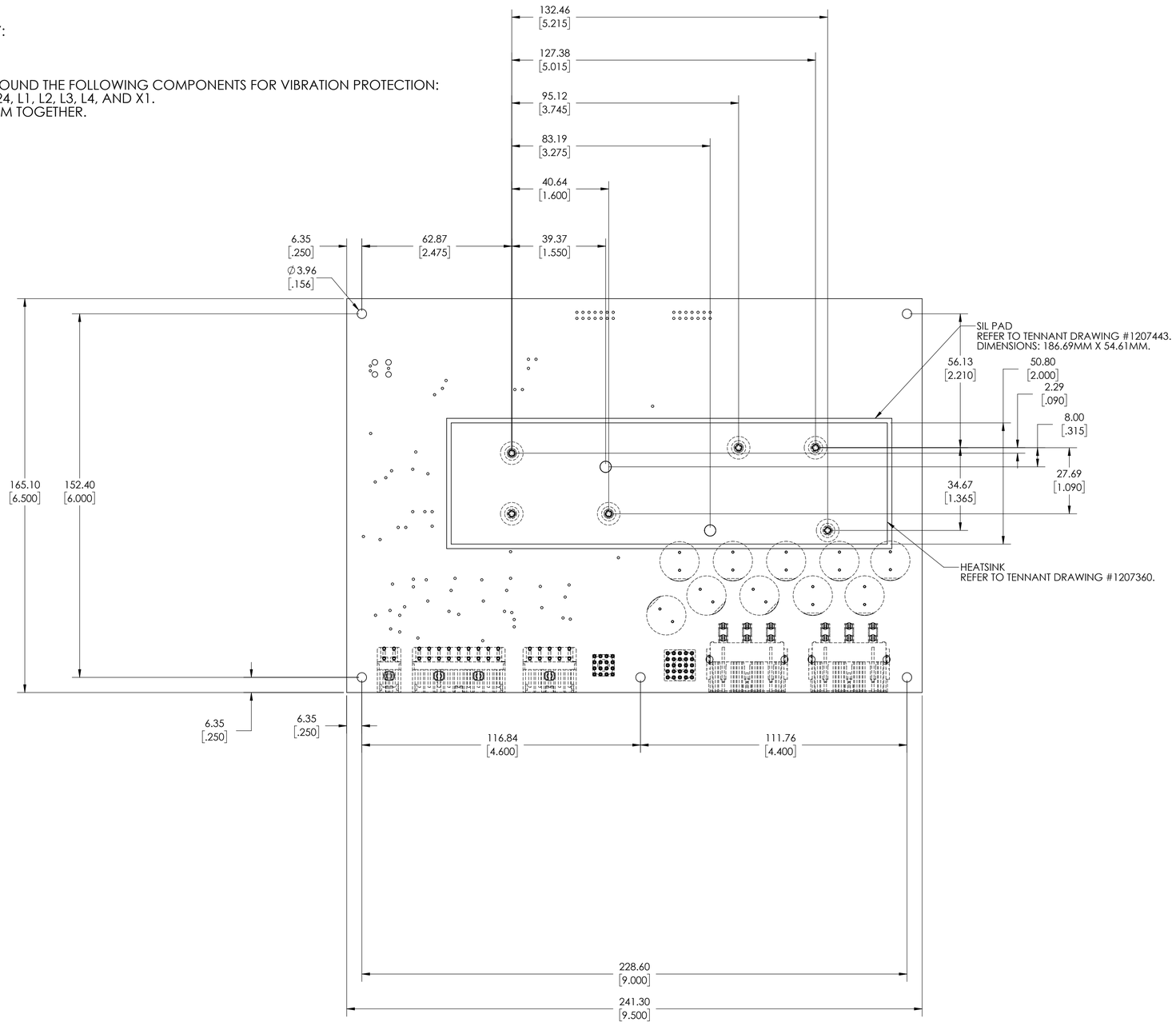
SHEET 1 OF 2

TENNANT

DWG D SIZE

PART NUMBER 1243629

CONFORMAL COATING AND RTV NOTES:
1) CONFORMAL COATING MATERIAL:
DYMAX CORP. #9-20557.
APPLIED COATING TO BE 91-112(MIC) THICK.
2) MASK OFF THE FOLLOWING AREAS ON THE TOP SIDE OF THE ASSEMBLY:
- CONNECTORS J1, J2, J3, J3A, J4, J7, J8, J9, J10 AND J11.
- PADS FOR THE POWER AND GROUND STAND-OFFS P1 AND P2.
- THE 4 PCB ASSEMBLY MOUNTING HOLES IN THE CORNERS.
3) MASK OFF THE FOLLOWING AREAS ON THE BOTTOM SIDE OF THE ASSEMBLY:
- PADS FOR THE POWER AND GROUND STAND-OFFS P1-1 AND P2-1.
- THE COMPLETE AREA BELOW THE HEATSINK AND SIL-PAD.
- THE 4 PCB ASSEMBLY MOUNTING HOLES IN THE CORNERS.
4) APPLY NON-CORROSIVE PCB SAFE RTV (LOCTITE 5145 OR EQUIVALENT) AROUND THE FOLLOWING COMPONENTS FOR VIBRATION PROTECTION:
C28, C65, C66, CB15, CB16, CB17, CB18, CB19, CB20, CB21, CB22, CB23, CB24, L1, L2, L3, L4, AND X1.
ALSO APPLY RTV BEADS BETWEEN THE 10 LARGE CAPACITORS TO SECURE THEM TOGETHER.
5) MINIMUM RTV BEAD DIAMETER TO BE 3MM.



REV	ECO
02	37291

CHANGED BY:	PAUL HENDERSON	09/09/2022
MDR:	STACY GAHLON	07/22/2019
DES:	JOHN HAEG	12/28/2015

WELDING NOTATION IN ACCORDANCE WITH AWS A2.4-98

UNLESS OTHERWISE SPECIFIED DIMENSION TOLERANCING IN ACCORDANCE WITH ASME Y14.5M-2009 ALL UNTOLERANCED DIMENSIONS ARE BASIC AND CONTROLLED BY:

X.X	±0.8	±[.03]
X.XX	±0.25	±[.010]
X.XXX	±0.125	±[.0049]
ANGLES	±0.5°	

SHEET 2 OF 2

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

TENNANT

MATERIAL SPECIFICATIONS:	OTHER TREATMENTS AND FINISHES	PAINT - COLOR		
NOTED	NONE	GLOSS	PERFORMANCE	ACCEPTANCE
PART NAME:				
CIRCUITBOARD ASSY [SCRUB, DRYVAC, M/T17]				

DWG SIZE	PART NUMBER
D	1243629