

**JASPER
ELECTRONICS**



POPULAR OPTIONS

- Additional Labeling
- Custom Silkscreening
- Bar Codes



CONTACT

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Model TC2217

AC Input / 120 Watt 24 & 48 VDC Output w/ PFC



GENERAL OVERVIEW

Jasper Electronics Model TC2217 component power supply module is **fully compliant** to the **Advanced Transportation Controller (ATC) Cabinet Standard 5301**, v02.02, March 18, 2019, and designated as ATC 5301 Model 2217. The features and specifications listed here may be revised as a result of ongoing development testing or additional user requested changes, but as of the user acceptance date of the first article production sample model (Revision code A), changes affecting the form, fit, function or other features outlined in this document shall not be permitted without prior notification to and written approval from the user. Specific design requirements are detailed in the ATC 5301 document.

Generally, Model TC2217 is a 2-output switching power supply capable delivering up to 120 Watts DC and intended specifically for use in ATC High Voltage (HV) Cabinets. These are designed for non-redundant "cold pluggable" installation in the end product. AC input, PE, and DC output power connections are through a 7-circuit connector on the rear of the supply as shown. Condition indicator LEDs are all visible on the front panel. Model TC2217 is convection cooled, with an extended operating temperature range. It is designed to be directly interchangeable with 2217 modules from other vendors.



ISO9001:2015
Rev A-October-1-2024

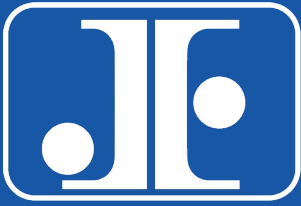
TECHNICAL SPECIFICATIONS

INPUT	
Voltage/ Current Rating	AC 80-270V, 2.1Arms max, 45-65Hz, 1 Phase
Fusing	AC 3.15A, 250V delayed action (slow-blow) 3AG 5 x 20mm line fuse provided
Inrush Current	Soft start (~25°C cold start) 20Apk@ AC 115V
Power Factor	>0.95 line PFC typical at 115VAC, full load
Efficiency	At AC 115V: >80%
Under Voltage Protection	Auto DC output shutdown when AC input falls below safe operating limits. Automatic recovery when input rises to within normal operating range
OUTPUT	
Model TC2217	
Voltage/Current (V/A)	V1 =+48.0VDC 0.0-1.0A V2 = +24.0V DC 0.0-3.0A Total loading on V1 +V2 not to exceed 120 Watts at 74°C DC outputs are electrically isolated from AC Mains, Earth Ground and each other
Output Voltage Setpoint	Factory preset within $\pm 2.0\%$ of nominal voltage
Line Regulation	$\pm 1.0\%$ at the output connection over full AC input range
Load Regulation	$< \pm 2.0V$ at the output connection over the full AC input range and 0 -100% output loading
Output Sense	Outputs internally sensed
Minimum Loading	None required
Output Turn-on Delay	<1.00 Sec from AC turn-on @110V AC
Over/ Under Shoot	<5% at turn-on or turn-off
Stability	$< \pm 0.2\%$ output drift after 20 minute warm-up
Temperature Coefficient	$< \pm 0.02\%/^{\circ}C$, 0° - 50°C, after 20 minute warm-up
Dynamic Response	Output recovers to within 1 % in less than 500 μ sec with a 50% load change at a slew rate of 1N μ sec. $< \pm 5.0\%$ peak transient deviation
Ripple and Noise (PARD)	300mV max peak-to-peak at the output terminal with a 20 MHz bandwidth limit. May be measured with a 0.1 μ F ceramic capacitor in parallel with a 47 μ F tantalum capacitor connected between the measured output and its return
Over Voltage Protection (OVP)	Non-crowbar type. Any output exceeding 130% $\pm 5\%$ of nominal will cause all outputs to latch off. AC input recycle required to reset
Over Current/ Short Circuit Protection	Outputs fuse protected against overload and short-circuit faults
Output Fusing	AC 250V delayed action (slow-blow) 3 AG 5 x 20 mm cartridge type external fuses provided in the (+) output V1, 48V DC: 2.0A. V2, 24V DC: 4.0A.
Hold-Up Time	Outputs remain in regulation for 50mSec minimum following loss of input power at low line, full load
Output Transient Protection	Minimum 1500W voltage transient suppressor
SIGNALS, INDICATORS AND CONTROLS	
AC Power Indicator	Front panel mounted, single-color LED. Green indicates AC power ON. Off indicates an input or fuse fault
DC Power Indicator	Front panel mounted, single-color LED, 1 per output. Green indicates DC power ON. Off indicates an output or fuse fault

*Specifications subject to change without notice.

MECHANICAL	
(Refer to JE Outline Configuration Dwg, P/N 04185-000-G.)	
Weight	0.59 Kg [1.30 lbs]
SAFETY, REGULATORY AND EMC	
Designed to comply with the relevant industry standards of the authorities having jurisdiction	
Touch Current	1.2mA max @ 50/60Hz, 115V AC per UL 60950 test procedures (Sec. 5.0)
Routine Factory Tests	Di-electric strength (hi-pot) to 2121V DC input-to-chassis and input-to-outputs; MegOhm to 500V output-to-chassis
OPERATING ENVIRONMENT	
Operating Temperature	-34.6° -+165.2°F [-37 .0° -+ 7 4.0°C] ambient at full load
Cooling	Convection only
Relative Humidity	Up to 95% RH, non-condensing
Conformal Coating	All printed circuit board surfaces are fully conformal coated with a UL94V-0 rated material to eliminate moisture absorption that includes a UV tracer
Operational Vibration	0.75G peak, 5 -500Hz along three orthogonal axis
Storage Temperature	-40° to +185°F (-40° to +85°C)
Altitude	Operating to 10,000 ft. Storage to 30,000 ft.
MTBF	Designed for 150,000 hrs at 25°C
Service Life	7 years, typical, before replacement should be considered
Calibration	Modules will maintain the output voltage and load capacity over the life of the equipment. Annual re-calibration or routine maintenance service is not specified or required

**Specifications subject to change without notice.*



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CUSTOM CONFIGURATION CODE

-MXXX: Indicates a Modified model, where XXXX is a factory assigned 4-digit number to identify a unique, user specified configuration. Such models may include special or non-standard features and/or options, or be in a configuration differing sufficiently from the design of the approved similar standard model to require reevaluation of all or part of the design to ensure continuing compliance with all safety requirements. Please consult the factory for details.

STANDARD DOCUMENTATION

A Certificate of Conformance and a Test Certificate shall be included with each lot shipped. Unit serial numbers within the lot shall be listed on the certificates.

Following user acceptance of the production released configuration (Revision A), changes that affect the final (end) assembly revision shall not be incorporated unless and until the user has been notified and has submitted written approval for the change to JE engineering. This requirement applies to both JE and user requested design changes

ENVIRONMENTAL CONSIDERATIONS

The model TC2217 is fully compliant with the requirements of EC Directive 2015/863/EU Restrictions of Hazardous Substances (RoHS-10). RoHS compliant models are identified with the letter code "G" suffix added to the JE internal part number on the unit labels and related documents (sales orders, etc). All materials, processes and packaging used in the assembly and shipping of RoHS versions comply.

A Certificate of Compliance is available on request. Contact the factory.

PACKAGING AND SHIPPING

JE ships FOB Origin from the Anaheim, CA factory or our other subsidiary facilities.

LIMITED WARRANTY POLICY

All Jasper Electronics (JE) standard model power supplies and products are guaranteed to be free of defects in workmanship and materials for a minimum of two (2) years from the date of original shipment, when operated within specification. Non-standard (custom) power supplies and products may be warranted on an individual basis. The unused portion of this warranty is fully transferable with the original equipment in which the power supply is installed. Please see our website for full warranty statement.

NEMA TEST REPORT

SPECIFICATIONS USED FOR TEST: ATC5301 SEC 11 REV V02.02

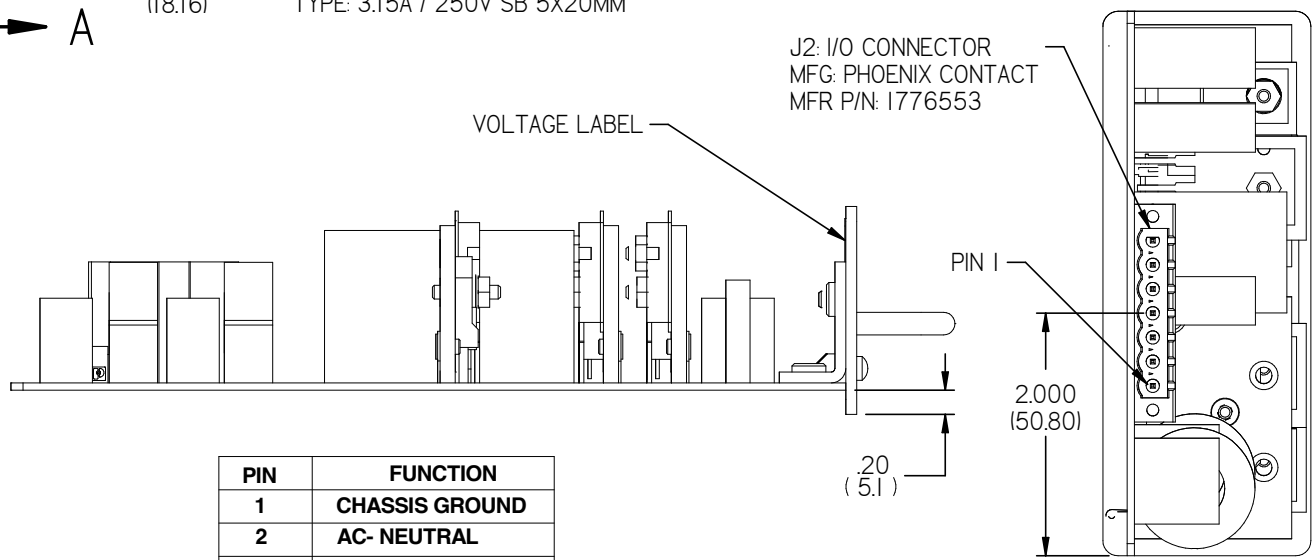
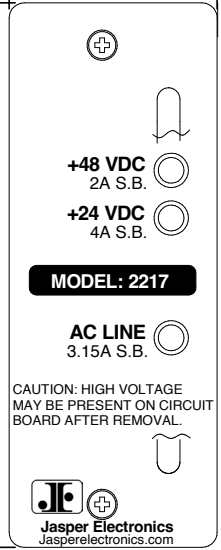
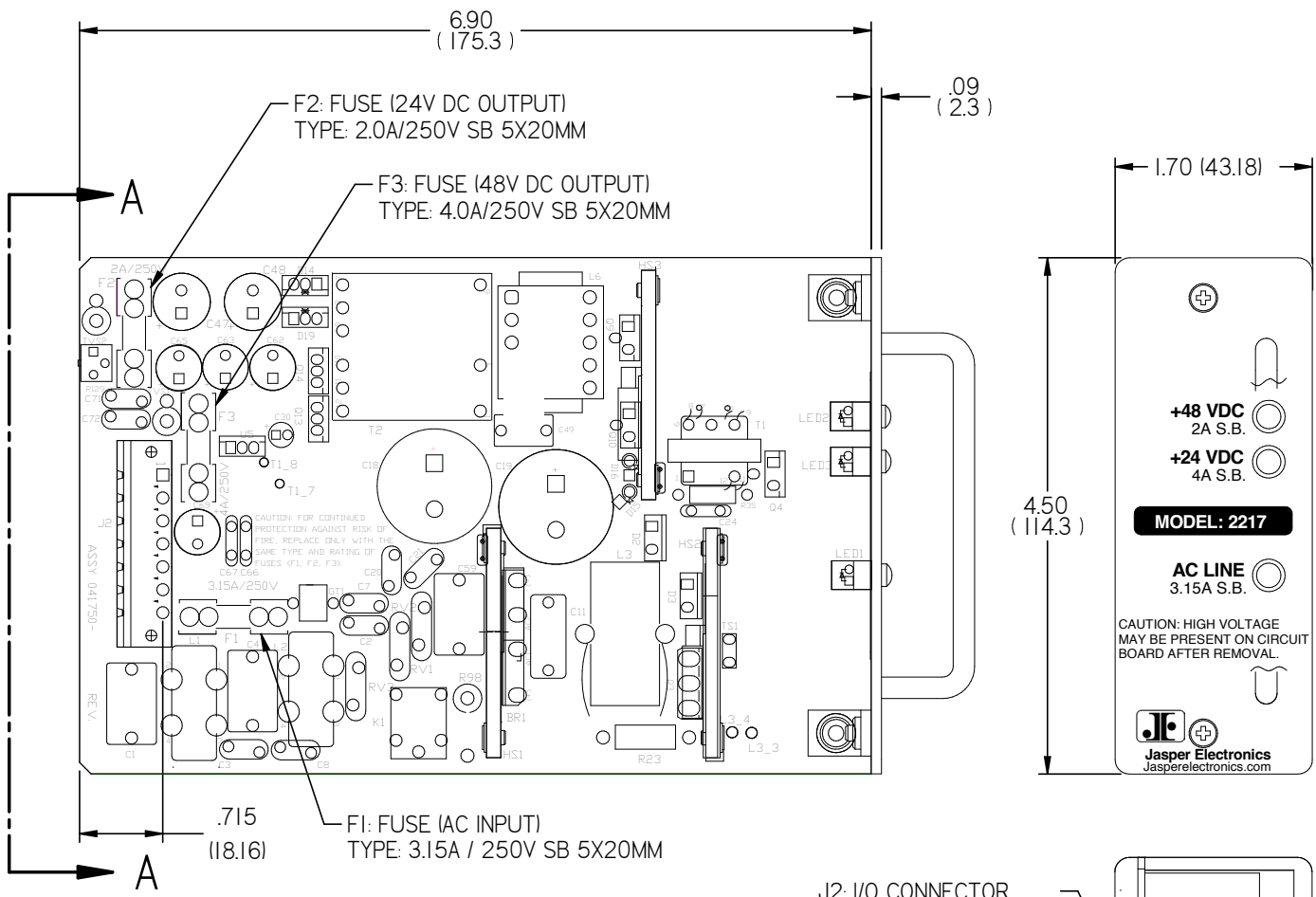
ATC 5301 SEC 11 tests referred to herein were performed at A2Z Test Labs Company. Tests included:

- High Temperature with low and high input voltage applied
- Low Temperature with low and high input voltage applied
- Power interruption tests of 500 and 1000 milliseconds applied
- Various transients and non-destruct transients were applied
- Vibration survey and endurance vibration were performed in all three axes
- Mechanical shock tests were applied in all three axes

The units performed with no failures when subjected to the tests called out in ATC 5301 V02.02 SEC11. Jasper Electronics is not associated with A2Z Test Labs Company in any way.



TC2217 OUTLINE DRAWING



PIN	FUNCTION
1	CHASSIS GROUND
2	AC- NEUTRAL
3	AC+ POWER
4	24VDC GROUND
5	+24VDC OUTPUT
6	48VDC GROUND
7	+48VDC OUTPUT

SECTION A-A

INNOVATIVE SPECIALTY DC POWER SYSTEMS

Standard and Custom Power Supplies from 5W to 10KW

TRAFFIC CONTROL POWER SUPPLIES



- 70-400+ Watts / 120 and 220 VAC Models Available
- CALTRANS TEES, NYSDOT, CDOT, GDOT Compliant for 332, 334, 336, 342, 344, and 346 Series cabinets
- RoHS and NEMA Compliant
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

CUSTOM POWER DISTRIBUTION ASSEMBLIES (PDAs)



- Compliant with TEES 2020
- 1U smaller than the PDA2-LX and PDA3-LX
- User accessible slots as specified
- Custom labeling and barcoding available
- Ruggedization against shock / vibration / humidity available

COMPACT PCI



- AC or DC input, 175W - 500W DC output, active PFC
- 3U x 8HP, 6U x 8HP sizes
- PICMG 2.11 compliant, UL/CSA, NEMKO/TUV/CE certified, ROHS compliant
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Industrial Computing, Military, Satellite Comm, Test, Transportation, Telecom, Aerospace

SPECIALTY HOT-SWAPPABLE POWER SUPPLIES



- 200-1500W, Universal Input, 5-54VDC Output
- Hot Swap. N+1, 90+% Efficiency
- 1U Form Factors
- 30+ Variations for Various Applications Including Nuclear
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

RACK POWER SYSTEMS



- 200W-1500W, 2-8 slots, single or mixed output voltages, up to 10KW total
- Single, dual, or individual unit AC or DC input
- Internally or externally redundant DC outputs
- Standard 19" and 23" size or user-specified configurations also available
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

CUSTOMS & MODIFIED STANDARDS



- 75W-2KW
- Single to 7 outputs
- Designed and built to custom or semi-custom specifications
- Ruggedization against shock/ vibration/ humidity optional
- Custom electrical specs, chassis, paint, labeling, connectors, interface all available

Primary Applications: Medical Equipment, Military, Test, Automotive, Computing, Audio, Sensitive Electronics

LOW NOISE CONVECTION / CONDUCTION COOLED POWER SUPPLIES



- 200W-500W, 90—264VAC full range input with 12-54 VDC Output
- Wide operating temperature range / high efficiency
- Small form factors
- Ruggedization against shock/ vibration/ humidity optional

Primary Applications: Medical Equipment, Military, IT, Sensitive Electronics

MEDICAL ADAPTERS



- 6W-250W, Efficiency levels V & VI
- Desktop, Wall-mount, and Interchangeable AC plug types
- Large selection of output connectors – additional cable lengths available
- UL60601 (medical) approved adapters available
- Ruggedization against shock/ vibration/ humidity optional

