

CST1800AT SERIES M-CRPS POWER SUPPLY

12 V 1800 W Distributed Power System



Advanced Energy's CST1800AT front end series is designed to provide a flexible power conversion solution for compute, storage, and networking equipment in the modular hardware common redundant power supply (M-CRPS). The 1800 W model is in the smaller form factor of 1 U x 60 mm x 185 mm. The CST1800AT series can cover cost-sensitive entry level systems, or power hungry applications where there are space constraints.

DATA SHEET

Front-end Bulk Power

Total Output Power

1800 W at High Line

Input Voltage

90 to 127 VAC, 180 to 264 VAC,
240 VDC

SPECIAL FEATURES

- Ultra-high density
- 1U power supply
- Active power factor correction
- EN61000-3-2 harmonic compliance
- Inrush current control
- 80PLUS® Titanium efficiency
- N+N, N+1 redundant
- Hot-pluggable
- Active current sharing
- PMBus® compliant
- Closed loop throttle
- Cold redundancy
- Two-year warranty

COMPLIANCE

- Conducted/Radiated EMI Class A Limits
- RoHS
- IEC 62368

SAFETY

- UL/cUL
- CB Test Certificate
- CE Mark
- KC
- EAC
- BIS
- CQC
- BSMI



M-CRPS TITANIUM CST1800AT SERIES

ELECTRICAL SPECIFICATIONS

Input						
Input Voltage Range and Output Power	90 to 127 VAC 180 to 264 VAC	TBD 1800 W				
Max Input Current	100 VAC 200 VAC	TBD 10 A				
Frequency	47 to 63 Hz					
Efficiency	96.0% peak, titanium efficiency rating					
Inrush Current	35 Apk, cold start					
Conducted EMI	Class A					
Radiated EMI	Class A					
Power Factor	>0.9 beginning at 10% load					
Hold-up Time	11 ms at full load					
Leakage Current	<0.583 mA					
Output						
	Main DC Output			Standby DC Output		
	MIN	NOM	MAX	MIN	NOM	MAX
Nominal Setting	-0.20%	12.2 V	0.20%	-3.5%	12.0 V	+3.5%
Total Output Regulation Range	-5%	-	+5%	-5%	-	+5%
Dynamic Load Regulation Range	-5%	-	+5%	-5%	-	+5%
Output Ripple	-	-	1%	-	-	1%
Output Current	1.0 A ¹	-	147.5 A	0.1 A	-	3.5 A
Current Sharing Error (CSE) ²	±4% of rated current			-		
Capacitive Loading	3,000 µF ³	-	70,000 µF	270 µF	-	4,700 µF
Output Rise Time	10 ms	-	70 ms	10 ms	-	70 ms

1 Minimum current for transient load response testing only. Unit is designed to operate and be within output regulation range at zero load.

2. From 5% to 100% of rated current.

3. 2,000µF of external capacitance is required for cold redundancy.

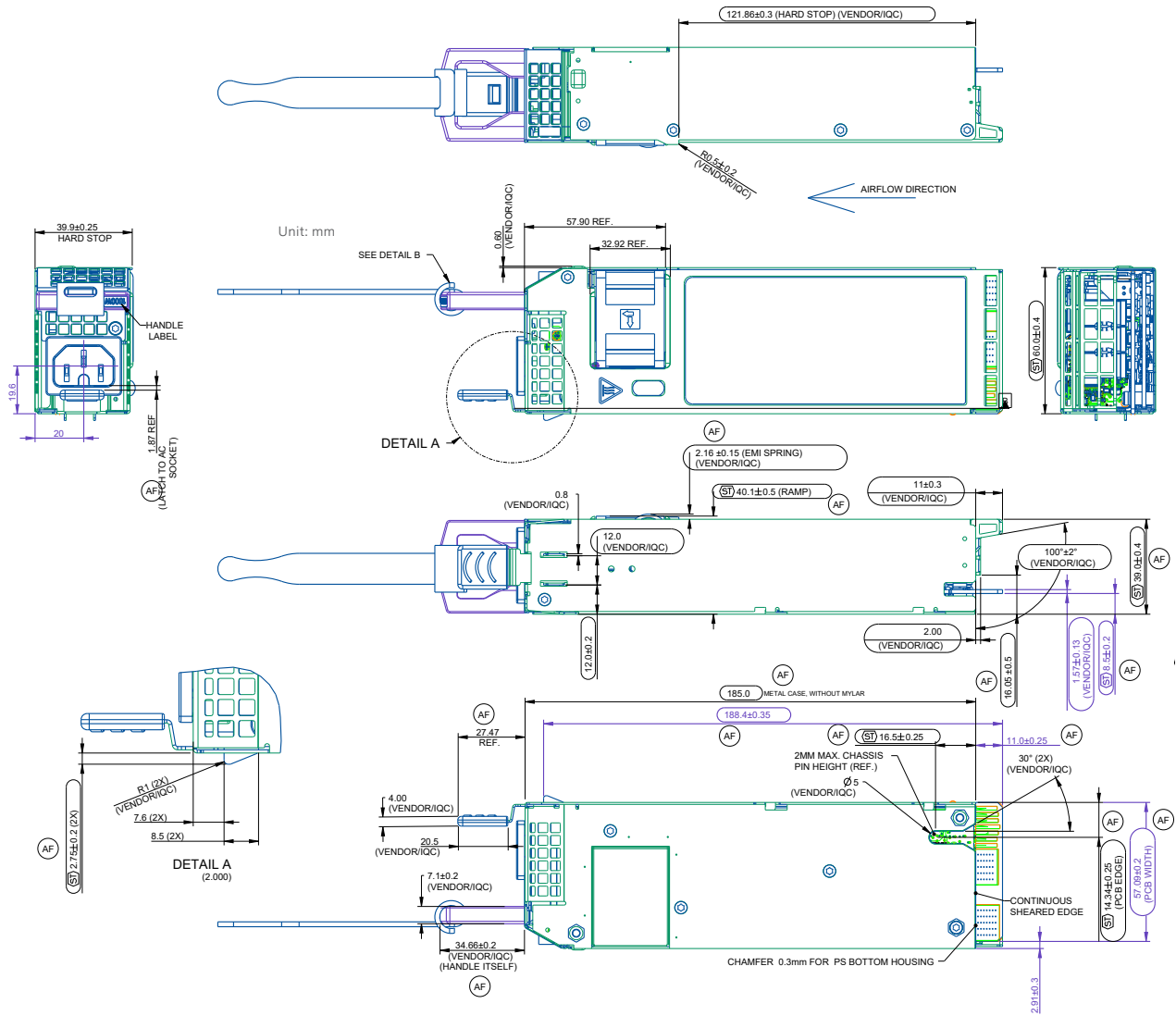
ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-5 to 55°C full rated power
Operating Altitude	Up to 10,000 feet ¹
Operating Relative Humidity	+5% to 95%, non-condensing
Non-operating Temperature	-40 to +70°C
Shipping and Storage Relative Humidity	+5% to 95%, non-condensing
Non-operating Altitude	Up to 50,000 feet
Vibration and Shock	Standard operating/non-operating random shock and vibration
RoHS Compliance	Yes
MTBF	>400 k hours at 40°C
Operating Life	Minimum of 5 years at 55°C, 80% load, nominal input

1 Safety creepage/clearance rated for 5,000 m altitude for CQC.

MECHANICAL OUTLINE

Unit: mm



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ORDERING INFORMATION

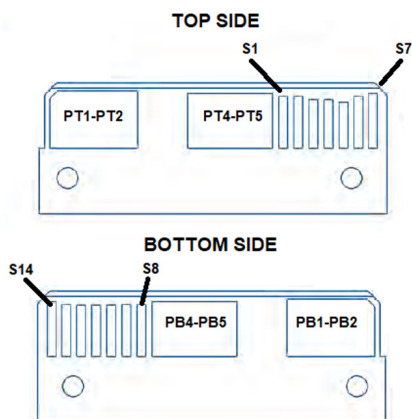
Model Number	Description	Outputs		Airflow Direction
CST1800AT-3-3M0	1U x 60 x 185 mm 1800 W Titanium efficiency	12.2 V/147.5 A	12.0 V/3.5 A	Forward

CONNECTOR DEFINITION

Connector Type	On Power Supply	Recommended Mating Connector
AC Input Connector	IEC320-C16	IEC320-C15
Output Connector	Card-edge	HPG24P14SRT021T-xx / 2407781-8 Or any approved equivalent

Output Connector Pin Configuration			
PT1-PT2	POWER GND	PB1-PB2	POWER GND
PT4-PT5	+12V	PB4-PB5	+12V
S1	SDA	S8	A0 (digital or analog addressing)
S2	SCL	S9	A1 (addressing)/DSSI
S3	PSON#	S10	12VSB
S4	SMBAlert#	S11	CR_BUS
S5	RETURN_SENSE/PS_KILL	S12	ISHARE
S6	+12V REMOTE SENSE ¹	S13	IMON
S7	PWOK	S14	VINOK

1. Remote sense is not enabled in the current CST1800AT-3-3M0. Will be enabled in a future model. Contact AE for any details.



ADDRESSING

PMBUS			
A1	A0	Write Address	Read Address
0	0	B0h	B1h
0	1	B2h	B3h
1	0	B4h	B5h
1	1	B6h	B7h

IPMI FRU			
A1	A0	Write Address	Read Address
0	0	A0h	A1h
0	1	A2h	A3h
1	0	A4h	A5h
1	1	A6h	A7h



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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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