

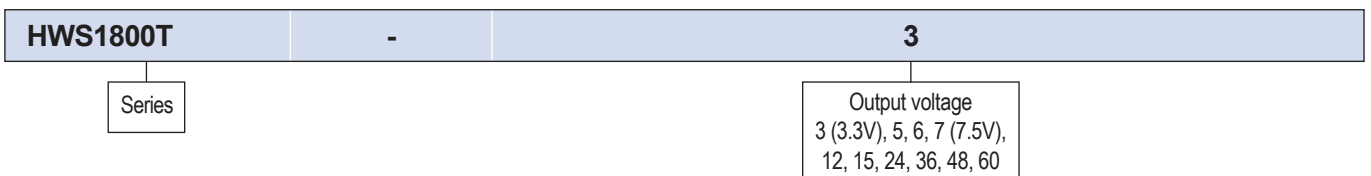
1800W 208Vac 3-Phase Industrial Power Supplies



The ultra reliable, conservatively rated HWS1800T series of 1800W AC-DC power supplies has a limited lifetime warranty, unique to the industry. The series accepts a 3-phase 170 - 265Vac input with output voltages from 3.3V to 60V. The products are certified to IEC 62368-1 and are SEMI F47 compliant. They also meet conducted and radiated emission standards without additional filtering or shielding. Up to five units may be connected in parallel to support high power requirements. A remote programming function allows the output voltage to be adjusted by up to 20% to 120% of nominal using an external voltage or resistor. Peak power capability is available on output voltages 6V and higher.

Features	Benefits
• Limited Lifetime Warranty	• Low Cost of Ownership
• Very Conservative Electrolytic Capacitor Ratings	• Long Service Life
• Output Voltage Programming	• Enables Remote Voltage Adjustment
• Peak Power Capability	• Size and Cost Reductions Compared to Continuously Rated Products

Model Selector								
Model	Voltage (V)	Adjustmet Range (V) ⁽¹⁾	Maximum Current (A)	Peak Current (A) ⁽²⁾	Load Reg (mV)	Line Reg (mV)	Overvoltage (V)	Efficiency (200Vac) (%)
HWS1800T-3	3.3	2.64 - 3.96	300	-	60	36	4.12 - 4.62	75
HWS1800T-5	5	4.0 - 6.0	300	-	60	36	6.25 - 7.0	81
HWS1800T-6	6	4.8 - 7.2	250	300	60	36	7.5 - 8.4	82
HWS1800T-7	7.5	6.0 - 9.0	200	240	60	40	9.37 - 10.5	84
HWS1800T-12	12	9.6 - 14.4	125	150	72	48	15.0 - 17.4	84
HWS1800T-15	15	12.0 - 18.0	100	120	90	60	18.7 - 21.8	84
HWS1800T-24	24	19.2 - 28.8	75	105	144	96	30.0 - 34.8	88
HWS1800T-36	36	28.8 - 43.2	50	70	216	144	45.0 - 49.7	88
HWS1800T-48	48	38.4 - 52.8	37.5	52.5	288	192	55.2 - 60.0	90
HWS1800T-60	60	48.0 - 66.0	30	42	360	240	69.0 - 75.0	90



Specifications		
Model		HWS1800T
Input		
AC Input Voltage Range	Vac	3-phase 170 - 265
Input Frequency	Hz	47 - 63
Input Current (200Vac)	A	HWS1800T-3: 4.5, HWS1800T-5 to -15: 6.0, HWS1800T-24 to -60: 7.0
Inrush Current (200Vac)	A	40
Leakage Current (240Vac, 60Hz)	mA	<2.6
Power Factor (200Vac)	-	0.94
Hold Up Time (typ)	ms	HWS1800T-3 to -15: 20, HWS1800T-24 to -60: 18
Efficiency	-	See model selector table
Conducted & Radiated EMI	-	EN55011 / EN55032-A, FCC-A, VCCI-A
Immunity	-	See immunity table
Safety Certifications and Markings	-	IEC/EN/UL/CSA62368-1, 60950-1, CE Mark and UKCA Mark

Immunity				
Test	Standard	Test Level	Criteria	Notes:
ESD	EN61000-4-2	Air \pm 8kV and contact \pm 4kV 80M -1GHz: 10V/m	A	See IEC61000 immunity test report on website
Radiated Susceptibility	EN61000-4-3	1.4 - 2.0GHz: 3V/m 2.0 - 2.7GHz: 1V/m	A	
Electrical Fast Transient Burst	EN61000-4-4	\pm 2kV	A	
Surge	EN61000-4-5	Normal \pm 2kV Common \pm 4kV	A	
Conducted Susceptibility	EN61000-4-6	10Vrms	A	
Magnetic Fields	EN61000-4-8	30A/m 30% 10ms	A A	
Voltage Dips	EN61000-4-11	60% 100ms 100% 5000ms	A A	
SEMI F47 Line Dip	SEMI-F47	-	-	

Specifications		
Model	HWS1800T	
Output		
Switching Frequency	kHz	HWS1800T-3 to -6: 36, HWS1800T-7: 55, HWS1800T-12 to -60: 70
Line Regulation	-	See Model Selector Table
Load Regulation	-	See Model Selector Table
Ripple & Noise (0°C)	mV	HWS1800T-3 to -15: 200, HWS1800T-24 to -36: 250, HWS1800T-48 to -60: 400
Temperature Coefficient	%/°C	0.02
Minimum Load	-	No minimum load required
Overcurrent Protection	%	>105. Constant current limit with automatic recovery. Shutdown if overcurrent lasts greater than 5s
Overvoltage Protection	-	See model selector table. Latching (unit shutdown), cycle AC input to reset
Remote Sense	-	Yes
Remote On/Off	-	Yes
DC Good	-	Yes
Remote Output Adjust (PV)	-	External voltage or resistance adjusts output voltage. See Instruction Manual
Indicators	-	Green LED indicates DC is OK
Parallel Operation	-	Single wire connection (up to 5 units). See instruction manual
Environmental		
Operating Temperature	-	See derating curves
Storage Temperature	°C	-30 to +85
Humidity (non condensing)	%RH	Operating: 10 - 90, Non operating 10 - 95
Cooling	-	Internal fan
Altitude	m	2,000
Withstand Voltage (For 1 minute)	Vac	Input to ground 2,000, Input to output 3,000, Output to ground 500 (HWS1800T-60 model 651) for 1 minute
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & 500Vdc
Vibration (Non-operating)	-	10-55Hz (Sweep for 1min.), 19.6m/s ² Constant X,Y,Z 1 hour each
Shock (Non-operating)	-	Less than 196m/s ²
Other		
Weight (Typ)	g	HWS1800T-3 to -7: 4000, HWS1800T-12 to HWS1800T-60: 3800
Size (WxHxD)	mm	126.5 x 82 x 280
Size (WxHxD)	Inches	4.98 x 3.23 x 11
Connectors	-	Screw terminals and busbars
Case Material	-	Steel
MTBF -JEITA RCR-9102A*	Hours	38,559
Warranty	Years	Limited lifetime warranty (See website for terms & conditions)

Notes:

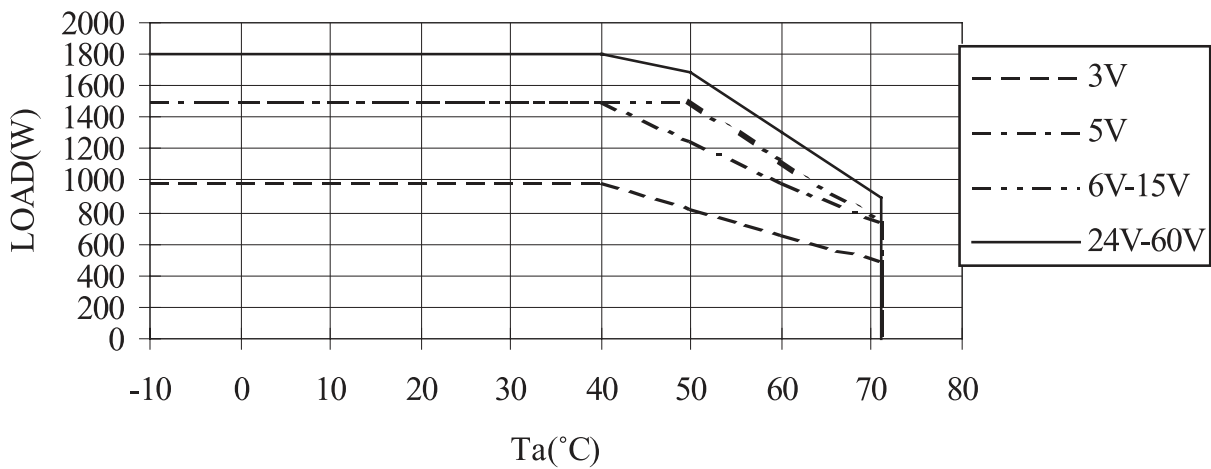
See website for detailed specifications, test methods and installation manual

(1) Use program input (PV) to adjust from 20-120% of nominal (20-110% for 48V & 60V models)

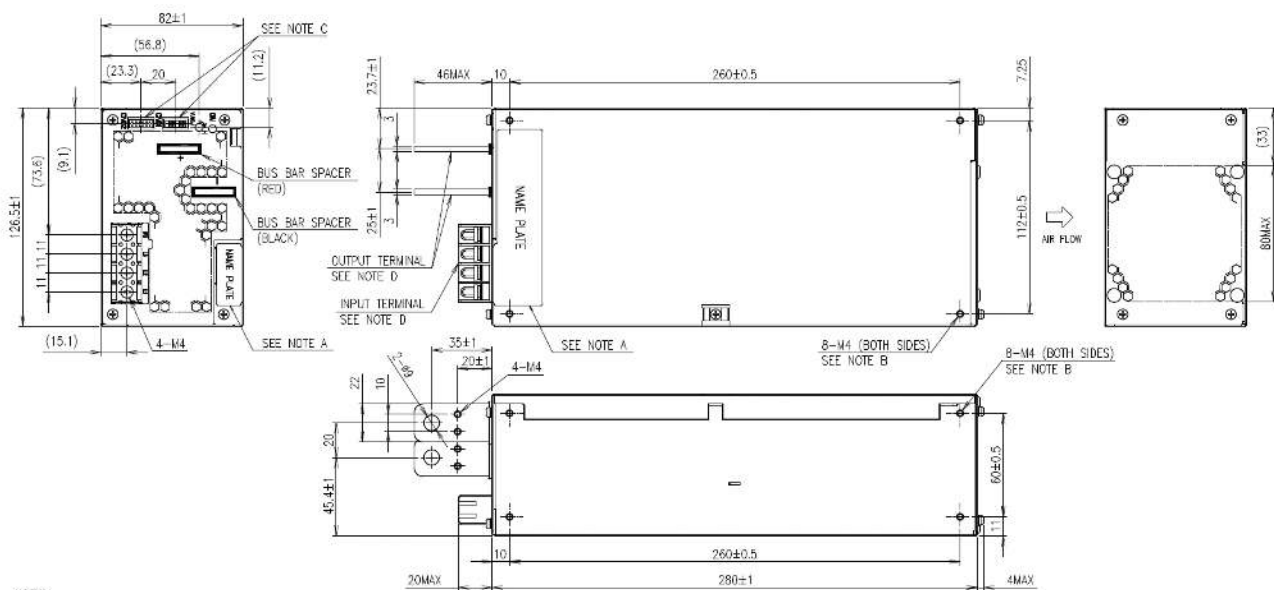
(2) 10s maximum on time with 35% duty cycle

*Ground fixed. The JEITA RCR-9102B calculation method produces figures significantly lower than Telcordia

Output Derating Curve



Outline Drawing HWS1800T



NOTES

- A : MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT, COUNTRY OF MANUFACTURE AND SAFETY MARKING (FOR ONLY APPROVED PRODUCTS) ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- B : M4 TAPPED HOLES (16) FOR CUSTOMER CHASSIS MOUNTING. (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6m/m.)
RECOMMENDED M4 SCREWS TORQUE : 1.27N·m
- C : I/O SIGNAL CONNECTOR
CONNECTOR : S12B-PHDS(LF)(SN) (JST)
MATCHING HOUSING : PHDR-12VS (JST)
MATCHING CONTACT : SPHD-002T-P0.5(AWK28~24) (JST) OR
SPHD-001T-P0.5(AWK26~22) (JST) OR
BPHD-001T-P0.5(AWK26~22) (JST)
HAND CRIMPING TOOL : YRS-620(SPHD-002T-P0.5) (JST)
YC-610R(SPHD-001T-P0.5) (JST)
YC-610R(BPHD-001T-P0.5) (JST)

- D : RECOMMENDED TORQUE FOR THE TERMINAL PIECE.
INPUT TERMINAL (M4 SCREW) : 1.27N·m
OUTPUT TERMINAL (M8 BOLT & NUT) : 10.8N·m
OUTPUT TERMINAL (M4 SCREW) : 1.27N·m

SIGNAL CONNECTOR INFORMATION

CN01, CN02 PIN ASSIGN	
S12B-PHDS (JST)	1. +V 7. PV
	2. +S 8. REF
	3. -V 9. CNT
	4. -S 10. TOG
	5. PC 11. PF
	6. COM 12. TOG

ACCESSORIES

- * ATTACHED CONNECTOR (3~7V)
SHORTING +S(+), -S(-), PV~REF & CNT~TOG
ATTACHED ON CN01 AT SHIPMENT
- * ATTACHED CONNECTOR (12~60V)
SHORTING +S~+V, -S~-V, PV~REF & CNT~TOG
ATTACHED ON CN01 AT SHIPMENT

OPTIONAL MODELS

MODEL	COATING
HWS1800T-*	—
HWS1800T-*/CO	○
HWS1800T-*/HD	○



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