

Linear	Desktop
Enclosed or L Bracket	Open Frame
PCB Mount	Rack Mount Hot Swap

# AC-DC Selector

Applications	# of Outputs	Output Power (W)											
		5	10	15	30	50	100	300	500	1000	1500	2500	
High Reliability Industrial (Five Year Warranty)	Single				NNS								
					HWS								
							JWS						
									LZSA				
	Dual			NND									
	Triple					JWT							
Industrial (Three Year Warranty)	Single & Multiple			HK-A (Single Output, 115VAC input)									
								NV					
					MTW								
									Vega				
											Alpha		
Datacom Commercial (One - Two Year Warranty)	Single		KW, KPS, KM										
			ZWS, ZWSAF, ZWSPAF										
					DT								
					H								
					SC, SC120, ZP								
							SWS						
								PFE					
									FPS (1U)				
									TH (1U)				
		Multiple		KW, KM									
					LWD, LWT								
					H								
					DT								
				SC, ZP									
						ZWD, ZWQ							
Programmable	Single							ZUP					
DIN Rail Mount	Single				DSP, DPP, DLP-PU*								
							DLP						

\* See website

## 1800W 3ph Industrial Power Supplies



- ◆ Limited Lifetime Warranty
- ◆ 208VAC Three Phase Input
- ◆ High Efficiency
- ◆ SEMI F47 Compliant

**RoHS**

### Key Market Segments & Applications

Factory Automation  
 Test & Measurement  
 Semiconductor Fabrication

### Features and Benefits

Feature	Benefit
◆ Limited Lifetime Warranty	◆ Lower Cost of Ownership
◆ High Efficiency	◆ Easier System Cooling
◆ Compact Size	◆ Less space used in system

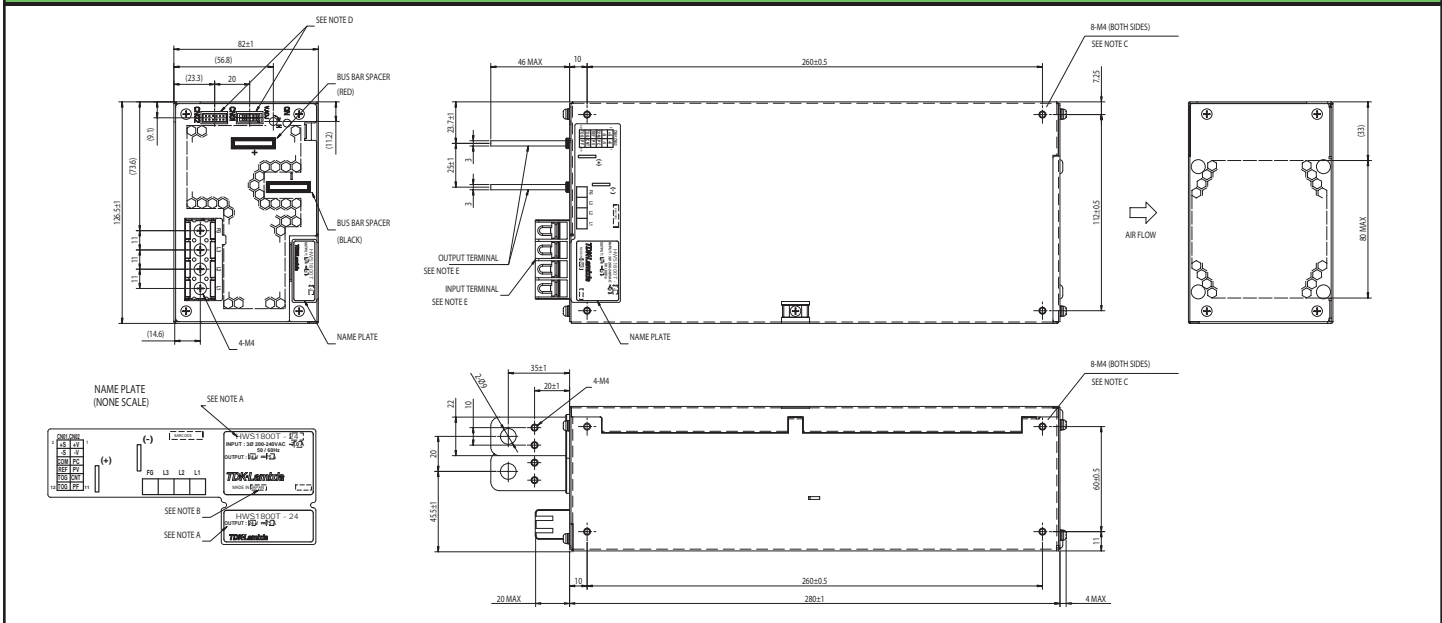
### Specifications

MODEL		HWS1800
ITEMS		
Input Voltage Range	-	208VAC, Three phase 170 - 265VAC (47 - 63Hz)
Input Current (Typical)	A	3.3V: 4.5A, 5V to 15V: 6A, 24 to 60V: 7A
Inrush Current (200VAC)	A	40A
Power Factor	-	Typically 0.94
Temperature Coefficient	-	<0.02%/°C
Overcurrent Protection	-	>105% of maximum / peak current rating
Overvoltage Protection	V	See table on page 2. Cycle input to reset or use remote on/off function
Hold Up Time (Typ)	ms	3.3V to 15V: 20ms, 24 to 60V: 18ms at 200VAC
Leakage Current (max)	mA	<2.6mA at 240VAC 60Hz
Remote Sense	-	Yes
Indicator	-	Green LED = ON
Remote on/off	-	Yes
Parallel operation	-	Single wire connection
DC Good	-	Yes
Remote Adjust (PV)	-	External voltage adjusts output voltage. See Instruction Manual
Operating Temperature	-	-10°C to +71°C, see output derating curves, -20°C start up
Storage Temperature	-	-30 to +85°C
Humidity (non condensing)	-	Operating: 10 - 90%RH, Non operating 10 - 95%RH
Cooling	-	Internal fan
Withstand Voltage	-	I/P to Grnd 2kVAC, I/P to O/P 3kVAC, O/P to Grnd 500VAC (1), O/P to CNT 100VAC for 1 min
Isolation Resistance	-	>100M at 25C & 70%RH, Output to Ground 500VDC
Vibration (non operating)	-	10 - 55Hz (1 minute sweep), 19.6m/s <sup>2</sup> constant X, Y, Z 1 hour
Shock (In package)	-	< 196.1 m/s <sup>2</sup>
Safety Agency Approvals	-	UL60950-1, CSA60950-1, EN60950-1, EN50178
Line Dip	-	Complies with SEMI F47
Conducted & Radiated EMI	-	EN55011 / EN55022-A, FCC-A, VCCI-A
Immunity	-	IEC61000-4-2, -3, -4, -5, -6, -8
Weight (Typ)	g	3800
Size (WxHxD)	in	4.98 x 3.23 x 11"
Warranty	yrs	Limited lifetime warranty (See Lambda's terms & conditions)

Notes:

(1) HWS1800T-60V: 651VAC

## Outline Drawing



## Output Ratings

Model	Voltage V	Adjust Range V	Max Curr. A	Peak Curr. A(2)	Max Power W	Peak Power W <sup>2</sup>	Load Reg mV	Line Reg mV(3)	Ripple Noise mV	Overshoot V	Efficiency (typ) %
HWS1800T-3	3.3	2.64 - 3.96	300	-	990	-	60	36	120	4.12 - 4.62	75
HWS1800T-5	5	4 - 6	300	-	1500	-	60	36	120	6.25 - 7.0	81
HWS1800T-6	6	4.8 - 7.2	250	300	1500	1800	60	40	150	7.5 - 8.4	82
HWS1800T-7	7.5	6 - 9	200	240	1500	1800	60	40	150	9.37 - 10.5	84
HWS1800T-12	12	9.6 - 14.4	125	150	1500	1800	72	48	200	15 - 17.4	84
HWS1800T-15	15	12 - 18	100	120	1500	1800	90	60	200	18.7 - 21.8	84
HWS1800T-24	24	19.2 - 28.8	75	105	1800	2520	144	96	250	30 - 34.8	88
HWS1800T-36	36	28.8 - 43.2	50	70	1800	2520	216	144	250	45 - 49.7	88
HWS1800T-48	48	38.4 - 52.8	37.5	52.5	1800	2520	288	192	300	55.2 - 60	90
HWS1800T-60	60	48 - 66	30	42	1800	2520	360	240	400	69 - 75	90

Notes

- (2) 10s maximum on time with 35% duty cycle
- (3) 180 - 265VAC

## Other Lambda Industrial Products

HWS	15W to 1500W single output, single phase
LZSA	500W to 1500W single output
SWS	50W to 1000W, low cost
DPP, DLP & DSP	10W to 480W DIN Rail mount

## Output Derating Curves

