



- Lifetime Warranty
- -10 to +71°C Operation (-40°C start up)
- Universal Input (85 - 265VAC)
- Conformally coated PCB's
- RoHS Compliant Design

# HWS 30-1500/HD Series

Single Output Industrial Power Supplies

## Key Market Segments & Applications

- Factory Automation
- Test & Measurement
- LED Displays

### HWS/HD Features and Benefits

#### Features

- Lifetime Warranty
- Conformally coated PCB's
- Wide Range AC Input

#### Benefits

- Lower Cost of Ownership
- Operates in Harsh Environments
- Supports Global Use

### Specifications

ITEMS	MODELS	HWS30	HWS100	HWS300	HWS600	HWS1000	HWS1500
		HWS50	HWS150				
Input Voltage range (47-63Hz)		85 - 265VAC or 120 - 370VDC			85 - 265VAC or 120 - 330VDC		
Input Current (Typ) (1)	A	0.8 / 0.4	1.3 / 0.65	4.1 / 2.1	8.1 / 3.9	13.5 / 7.0	19 / 10
	-	0.7 / 0.35	1.9 / 0.95				
Inrush Current (1)	A	14 / 28		20 / 40			
Power Factor	-	Meets EN61000-3-2					
Temperature Coefficient	-	<0.02%/°C					
Overcurrent Protection	-	>104%					
Overvoltage Protection	V	Yes (See table on page 2)					
Hold Up Time (Typ)	ms	20					
Leakage Current (60Hz)	mA	<0.5mA		<0.75mA		<1.2mA	≤1.5mA
Remote Sense	-	No		Yes			
Indicator	-	Green LED = ON					
Remote On/Off	-	No	Yes (Isolated from output)				
Parallel operation	-	No	Single wire connection (5 units max)				
DC Good	-	No	Yes				
Operating Temperature +71°C: 20%) and Derating (operation to +74°C - contact factory)		HWS30-150: -10°C to +71°C, (-10 - +50°C: 100%, +60°C: 60%, HWS300-1500: -10°C to +71°C, (-10 to +50°C: 100%, derate linearly to 50% load from +50 to +71°C) Guaranteed start up at -40°C (see specification sheets on website for details and derating)					
Storage Temperature		-40 to +85°C					
Humidity (non condensing)	-	Operating: 30 - 90%RH (10 -90% on HWS300-1500), Non operating 10 - 95%RH					
Cooling	-	Convection		Internal fan			
Withstand Voltage (2)	-	Input to Ground 2kVAC, Input to Output 3kVAC, Output to Ground 500VAC for 1 min.					
Isolation Resistance	-	>100MΩ at 25°C & 70%RH, Output to Ground 500VDC, >10M Output to remote on/off 100VDC					
Vibration (non operating)	-	MIL-STD-810F 514.5 Category 4, 10					
Shock (in packaging)	-	MIL-STD-810F 516.5 Procedure I, VI (<196.1m/s <sup>2</sup> )					
Safety Agency Approvals	-	UL60950-1, CSA60950-1, EN60950-1, EN50178, CE Mark					
Line Dip	-	Complies with SEMI F47 (200VAC line only)					
Conducted & Radiated EMI	-	EN55011 / EN55022-B, FCC-B, VCCI-B (Curve A for HWS1500)					
Immunity	-	IEC61000-4-2 (Level 2,3), -3, -4, -6, (Level 3), -5, -8 (Level 4), -11					
Weight (Typ)	g	220	450	1000	1600	3200	3800
		280	500				
Size (WxHxD)	mm	26.5 x 82 x 95	28 x 82 x 160	61 X 82 X 165	100 X 82 X 165	126.5 X 82 X 240	126.5 X 82 X 280
		26 x 82 x 120	37 x 82 x 160				
Warranty		Lifetime Warranty (See Lambda's terms & conditions)					

Notes: (1) 100/200VAC input. (2) HWS300-600 2.5kVAC Input to ground



Output Ratings

Model	Voltage (V)	Adjust Range (V)	Max Curr. (A)	Peak Curr. (A)	Max. Power (W)	Peak Power (W)	Load Reg (mV)	Line Reg (mV)	Ripple Noise (mV)	Over voltage (V)	Efficiency typ %
HWS50-3/HD	3.3	2.97 - 3.96	6		20		40	20	120	4.13 - 4.95	70/73
HWS50-3/HD	3.3	2.97 - 3.96	10		33		40	20	120	4.13 - 4.95	76/78
HWS100-3/HD	3.3	2.97 - 3.96	20		66		40	20	120	4.13 - 4.95	78/81
HWS150-3/HD	3.3	2.97 - 3.96	30		99		40	20	120	4.13 - 4.95	78/81
HWS300-3/HD	3.3	2.64 - 3.96	60		198		30	20	120	4.13 - 4.95	74/77
HWS600-3/HD	3.3	2.64 - 3.96	120		396		30	20	120	4.13 - 4.95	75/78
HWS1000-3/HD	3.3	2.64 - 3.96	200		660		40	20	120	4.12 - 4.62	71/73
HWS1500-3/HD	3.3	2.64 - 3.96	300		990		60	36	200	4.12 - 4.62	72/75
HWS30-5/HD	5	4.0 - 6.0	6		30		40	20	120	6.25 - 7.25	77/80
HWS50-5/HD	5	4.0 - 6.0	10		50		40	20	120	6.25 - 7.25	82/84
HWS100-5/HD	5	4.0 - 6.0	20		100		40	20	120	6.25 - 7.25	83/86
HWS150-5/HD	5	4.0 - 6.0	30		150		40	20	120	6.25 - 7.25	83/86
HWS300-5/HD	5	4.0 - 6.0	60		300		30	20	120	6.25 - 7.25	79/82
HWS600-5/HD	5	4.0 - 6.0	120		600		30	20	120	6.25 - 7.25	80/83
HWS1000-5/HD	5	4.0 - 6.0	200		1000		30	20	120	6.25 - 7.0	76/78
HWS1500-5/HD	5	4.0 - 6.0	300		1500		60	36	200	6.25 - 7.0	77/81
HWS1000-6/HD	6	4.8 - 7.2	167		1002		30	20	150	7.5 - 8.4	79/81
HWS1500-6/HD	6	4.8 - 7.2	250	300	1500	1800	60	36	200	6.25 - 7.0	79/82
HWS1000-7/HD	7.5	6.0 - 9.0	134	160	1005	1200	30	20	150	9.37 - 10.5	80/82
HWS1500-7/HD	7.5	6.0 - 9.0	200	240	1500	1800	60	40	200	9.37 - 10.5	81/83
HWS30-12/HD	12	9.6 - 14.4	2.5		30		96	48	150	15.0 - 17.4	81/83
HWS50-12/HD	12	9.6 - 14.4	4.3		51.6		96	48	150	15 - 17.4	81/83
HWS100-12/HD	12	9.6 - 14.4	8.5		102		96	48	150	15 - 17.4	83/86
HWS150-12/HD	12	9.6 - 14.4	13		156		96	48	150	15 - 17.4	83/86
HWS300-12/HD	12	9.6 - 14.4	27		324		72	48	150	15 - 17.4	80/83
HWS600-12/HD	12	9.6 - 14.4	53		636		72	48	150	15 - 17.4	80/83
HWS1000-12/HD	12	9.6 - 14.4	88	100	1056	1200	72	48	150	15 - 17.4	82/85
HWS1500-12/HD	12	9.6 - 14.4	125		1500		72	48	150	15 - 17.4	82/85
HWS30-15/HD	15	12.0 - 18.0	2		30		120	60	150	18.8 - 21.8	81/84
HWS50-15/HD	15	12.0 - 18.0	3.5		52.5		120	60	150	18.8 - 21.8	81/83
HWS100-15/HD	15	12.0 - 18.0	7		105		120	60	150	18.8 - 21.8	83/86
HWS150-15/HD	15	12.0 - 18.0	10		150		120	60	150	18.8 - 21.8	83/86
HWS300-15/HD	15	12.0 - 18.0	22		330		90	60	150	18.8 - 21.8	80/83
HWS600-15/HD	15	12.0 - 18.0	43		645		90	60	150	18.8 - 21.8	81/84
HWS1000-15/HD	15	12.0 - 18.0	70	80	1050	1200	90	60	150	18.7 - 21.8	83/85
HWS1500-15/HD	15	12.0 - 18.0	100		1500		90	60	150	18.7-21.8	83/87
HWS30-24/HD	24	19.2 - 28.8	1.3		31.2		192	96	200	30 - 34.8	83/86
HWS50-24/HD	24	19.2 - 28.8	2.2		52.8		192	96	150	30 - 34.8	82/84
HWS100-24/HD	24	19.2 - 28.8	4.5		108		192	96	150	30 - 34.8	84/87
HWS150-24/HD	24	19.2 - 28.8	6.5		156		192	96	150	30 - 34.8	85/88
HWS300-24/HD	24	19.2 - 28.8	14	16.5	336	396	144	96	150	30 - 34.8	82/85
HWS600-24/HD	24	19.2 - 28.8	27	31	648	744	144	96	150	30 - 34.8	82/85
HWS1000-24/HD	24	19.2 - 28.8	46	58.5	1104	1404	144	96	150	30 - 34.8	85/87
HWS1500-24/HD	24	19.2 - 28.8	65/70	105	1560	2520 <sup>1</sup>	144	96	200	30 - 34.8	84/88
HWS1000-36/HD	36	28.8 - 43.2	30.7	39	1104	1404	150	144	200	45 - 49.7	85/88
HWS1500-36/HD	36	28.8 - 43.2	42/46.5	70	1512/	2520 <sup>1</sup>	150	144	200	45 - 49.7	84/88
HWS30-48/HD	48	38.4 - 52.8	0.65		31.2		384	192	200	55.2 - 64.8	82/83
HWS50-48/HD	48	38.4 - 52.8	1.1		52.8		384	192	200	55.2 - 64.8	83/85
HWS100-48/HD	48	38.4 - 52.8	2.1		100.8		384	192	200	55.2 - 64.8	84/87
HWS150-48/HD	48	38.4 - 52.8	3.3		158.4		384	192	200	55.2 - 64.8	85/88
HWS300-48/HD	48	38.4 - 52.8	7		336		288	192	350	55.2 - 64.8	82/85
HWS600-48/HD	48	38.4 - 52.8	13		624		288	192	350	55.2 - 64.8	83/86
HWS1000-48/HD	48	38.4 - 52.8	23	29.2	1104	1404	288	192	200	55.2 - 60.0	86/88
HWS1500-48/HD	48	38.4 - 52.8	32		1536		288	192	200	55.2 - 64.8	86/90
HWS1000-60/HD	60	48.0 - 66	18.4	23.4	1104	1404	360	240	400	69.0 - 75.0	85/88
HWS1500-60/HD	60	48.0 - 66	28	42	1536	2520	360	240	400	69.0 - 75.0	86/90

Options

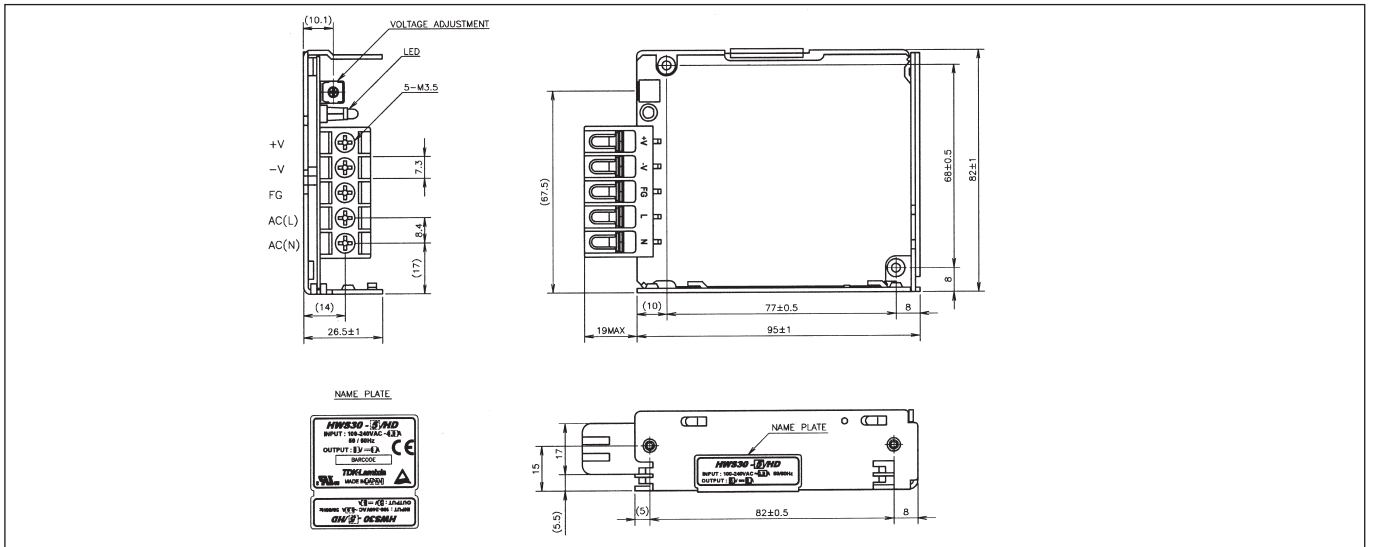
Suffix	Description
Blank	No cover (except HWS300-1500 cover fitted as standard)
/A	Cover fitted (egHWS100-24/HDA) Deratings apply

Notes: (3) Minimum load for maximum stability at -40°C start up  
 (4) Peak load for 10s maximum on time, 35% duty cycle

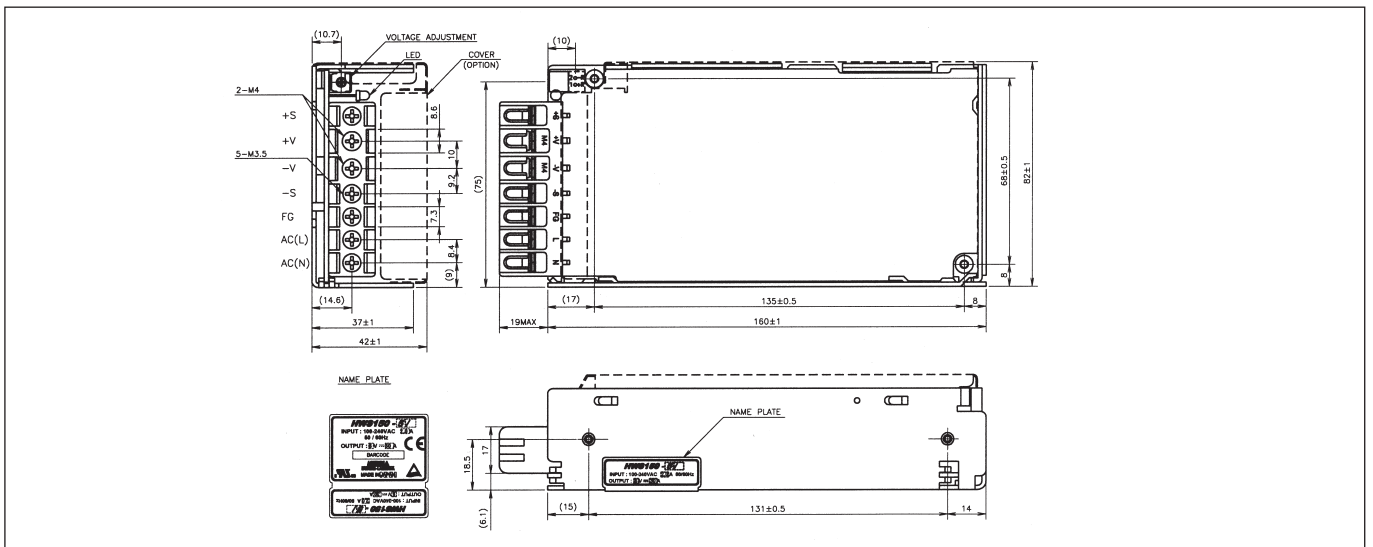
Please refer to website for outline drawings and additional data  
[www.emea.tdk-lambda.com/HWSHD](http://www.emea.tdk-lambda.com/HWSHD)



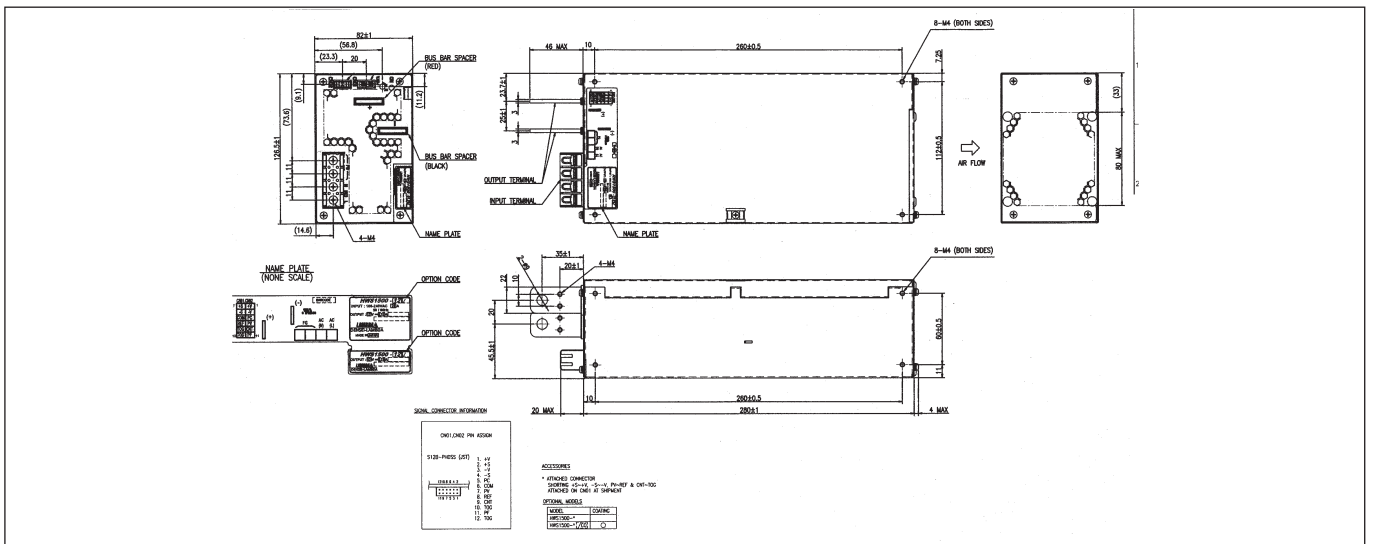
Outline Drawing HWS30 Series



Outline Drawing HWS150 Series



Outline Drawing HWS1500 Series





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