Single Output Industrial Power Supplies

Features

- Limited Lifetime Warranty
- -10 to +71°C Operation (-40°C start up)
- Universal Input (85 - 265VAC)
- Conformally coated pcbs
- Class 1 Div 2 option (/RYHD suffix)
- Wide range AC Input



Key Market Segments & Applications

Industrial COTS Test COMM LED Broadcast

RoHS

Specifications

Model		HWS50	HWS100	HWS150	HWS300	HWS600	HWS1000	HWS1500
Input Voltage range (47-63Hz)	-	85-265VAC or 120-370VDC**			85-265VAC or 120-330VDC** (No DC input for HWS1500)			
Input Current (Typ) (1)	A	0.7 / 0.35	1.3 / 0.65	1.9 / 0.95	4.1 / 2.1	8.1 / 3.9	13.5 / 7	19 / 10
Inrush Current (1)	A	14 / 2			20 / 4			
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			
Remote Adjust (PV)	-	No					Yes (3)	
Operating Temperature and Derating (operation to +74°C - contact factory)	°C	HWS50-150: -10°C to +71°C, (-10 ~+50°C: 100%, +60°C: 60%, +71°C: 20%) HWS300-1500: -10°C to +71°C, (-10 ~+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	°C	-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 (HWS1500 Cat 4, figure 514.5C-1)						
Shock (in packaging)	-	MIL-STD-810F 516.5 Category I, VI (HWS1500 <196.1m/s^2)						
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 (HWS1500 Class A)						
Immunity	-	IEC61000-4-2 (Level 2,3), -3, -4, -6, (Level 3), -5, -8 (Level 4), -11						
Weight (Typ)	g	280	450	500	1000	1600	3200	3800
Size (WxHxD)	in	1.04x3.23x4.72	1.1x3.23x6.3	1.46x3.23x6.3	2.4x3.23x6.5	3.94x3.23x6.5	5x3.2x9.5	5x3.25x11
Warranty	yrs	Limited lifetime warranty (See TDK-Lambda's terms & conditions)						

(1) 100/200VAC input
(2) HWS300-600 2.5kVAC Input to ground
(3) 1-6V program voltage input to adjust output 20-120% (typical) of nominal. See instruction manual for details & models with this feature.
(*) Class 1 Div 2 option (/RYHD suffix)
(**) Safety certified for AC input only

HWS50-150/HD Not recommended for new designs, see HWS-A webpage

Output Ratings

Model	Voltage	Adjust Range	Max Curr(A)	Peak Curr(A)[4]	Max Power(W)	Load Reg(mV)	Line Reg(mV)	Ripple Noise(mV)	Overvoltage (V)	Efficiency (typ)%[1]
HWS50-3/HD	3.3V	2.97 - 3.96	10	-	33	40	20	120	4.13-4.95	76/78
HWS100-3/HD	3.3V	2.97 - 3.96	20	-	66	40	20	120	4.13-4.95	78/81
HWS150-3/HD	3.3V	2.97 - 3.96	30	-	99	40	20	120	4.13-4.95	78/81
HWS300-3/HD	3.3V	2.64 - 3.96	60	-	198	30	20	120	4.13-4.95	74/77
HWS600-3/HD	3.3V	2.64 - 3.96	120	-	396	30	20	120	4.13-4.95	75/78
HWS1000-3/HD	3.3V	2.64 - 3.96	200	-	660	40	20	120	4.12-4.62	71/73
HWS1500-3/HD	3.3V	2.64 - 3.96	300	-	990	60	36	150	4.12-4.62	72/75
HWS50-5/HD	5V	4.0 - 6.0	10	-	50	40	20	120	6.25-7.25	82/84
HWS100-5/HD	5V	4.0 - 6.0	20	-	100	40	20	120	6.25-7.25	83/86
HWS150-5/HD	5V	4.0 - 6.0	30	-	150	40	20	120	6.25-7.25	83/86
HWS300-5/HD	5V	4.0 - 6.0	60	-	300	30	20	120	6.25-7.25	79/82
HWS600-5/HD	5V	4.0 - 6.0	120	-	600	30	20	120	6.25-7.25	80/83
HWS1000-5/HD	5V	4.0 - 6.0	200	-	1000	40	20	120	6.25-7	76/78
HWS1500-5/HD	5V	4.0 - 6.0	300	-	1500	60	36	150	6.25-7	77/81
HWS1000-6/HD	6V	4.8 - 7.2	167	-	1002	60	36	150	7.5-8.4	79/81
HWS1000-7/HD	7.5V	6.0 - 9.0	134	160	1005	60	36	150	9.37-10.5	80/82
HWS50-12/HD	12V	9.6 - 14.4	4.3	-	51.6	96	48	150	15-17.4	81/83
HWS100-12/HD	12V	9.6 - 14.4	8.5	-	102	96	48	150	15-17.4	83/86
HWS150-12/HD	12V	9.6 - 14.4	13	-	156	96	48	150	15-17.4	83/86
HWS300-12/HD	12V	9.6 - 14.4	27	-	324	72	48	150	15-17.4	80/83
HWS600-12/HD	12V	9.6 - 14.4	53	-	636	72	48	150	15-17.4	80/83
HWS1000-12/HD	12V	9.6 - 14.4	88	100	1056	100	48	150	15-17.4	82/85
HWS1500-12/HD	12V	9.6 - 14.4	125	-	1500	72	48	150	15-17.4	82/85
HWS50-15/HD	15V	12.0 - 18.0	3.5	-	52.5	120	60	150	18.8-21.8	81/83
HWS100-15/HD	15V	12.0 - 18.0	7	-	105	120	60	150	18.8-21.8	83/86
HWS150-15/HD	15V	12.0 - 18.0	10	-	150	120	60	150	18.8-21.8	83/86
HWS300-15/HD	15V	12.0 - 18.0	22	-	330	90	60	150	18.8-21.8	80/83
HWS600-15/HD	15V	12.0 - 18.0	43	-	645	90	60	150	18.8-21.8	81/84
HWS1000-15/HD	15V	12.0 - 18.0	70	80	1500	120	60	150	18.7-21.8	83/85
HWS1500-15/HD	15V	12.0 - 18.0	100	-	1500	90	60	150	18.7-21.8	83/87
HWS50-24/HD	24V	19.2 - 28.8	2.2	-	52.8	192	96	150	30-34.8	82/84
HWS100-24/HD	24V	19.2 - 28.8	4.5	-	108	192	96	150	30-34.8	84/87
HWS150-24/HD	24V	19.2 - 28.8	6.5	-	156	192	96	150	30-34.8	85/88
HWS300-24/HD	24V	19.2 - 28.8	14	16.5	336	144	96	150	30-34.8	82/85
HWS600-24/HD	24V	19.2 - 28.8	27	31	648	144	96	150	30-34.8	82/85
HWS1000-24/HD	24V	19.2 - 28.8	46	58.5	1104	150	96	150	30-34.8	85/87
HWS1500-24/HD	24V	19.2 - 28.8	65/70 (1)	105	1560	144	96	200	30-34.8	84/88
HWS1000-36/HD	36V	28.8 - 43.2	30.7	39	1104	150	144	200	45-49.7	85/88
HWS1500-36/HD	36V	28.8 - 43.2	42/46.5(2)	70	1512	150	144	200	45-49.7	84/88
HWS50-48/HD	48V	38.4 - 52.8	1.1	-	52.8	384	192	200	55.2-64.8	83/85
HWS100-48/HD	48V	38.4 - 52.8	2.1	-	100.8	384	192	200	55.2-64.8	84/87
HWS150-48/HD	48V	38.4 - 52.8	3.3	-	158.4	384	192	200	55.2-64.8	85/88
HWS300-48/HD	48V	38.4 - 52.8	7	-	336	288	192	350	55.2-64.8	82/85
HWS600-48/HD	48V	38.4 - 52.8	13	-	624	288	192	350	55.2-64.8	83/86
HWS1000-48/HD	48V	38.4 - 52.8	28	29.2	1104	300	192	200	55.2-60	86/88
HWS1500-48/HD	48V	38.4 - 52.8	32	-	1536	288	192	200	55.2-64.8	86/90
HWS1000-60/HD	60V	48.0 - 66.0	18.4	23.4	1104	360	240	400	69-75	85/88

(4) 200-265VAC Input, 10s maximum on time, 35% duty cycle

Options

Suffix	Description
Blank	No Cover (HWS50-150 Only) HWS300-1500 the cover is fitted as standard
/HDA	The cover option for HWS50-150 is special order only HWS300-1500 the cover is fitted as standard
/RYHD	ISA 12.12.01 (UL1604) - Class 1 Div 2 with dry contact relay DC Good signal (300W, 600W and 1500W 24V output models only, no remote on/off function.)

Other Industrial Products

LZSA	500W to 1500W Single output
DPP, DLP, DSP	10W to 960W DIN Rail Mount
PFE	300 to 1000W AC-DC Power Models

For Additional Information, please visit
us.tdk-lambda.com/lp/products/hws-series.htm

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