

Single Output Industrial Power Supplies

Features

- ◆ Limited Lifetime Warranty
- ◆ Medical Approvals²
- ◆ Universal Input (85 - 265VAC)
- ◆ High Efficiency
- ◆ Broad 30W to 1500W product range
- ◆ Wide range AC Input



Key Market Segments & Applications



Medical



RoHS

Specifications

Model		HWS30 HWS50	HWS100 HWS150	HWS300	HWS600	HWS1500
Input Voltage range (47-63Hz) (2)	-	85 - 265VAC or 120 - 370VDC		85 - 265VAC or 120 - 330VDC		85 - 265VAC
Input Current (Typ) (1)	A	0.8 / 0.4 0.7 / 0.35	1.3 / 0.65 1.9 / 0.95	4.1 / 2.1	8.1 / 3.9	19 / 10
Inrush Current (1)	A	14 / 28		20 / 40		
Power Factor / Flicker	-	Meets EN61000-3-2, EN61000-3-3				
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				
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		
Voltage Programming	-	No				Yes
Operating Temperature & Derating	°C	HWS30-150: -10°C to +70°C, (-10 - +50°C: 100%, +60°C: 60%, +70°C: 20%) HWS300-1500: -10°C to +70°C, (-10 - +50°C: 100%, derate linearly to 50% load from +50 to +70°C)				
Storage Temperature	°C	-30 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 (3)	-	I/P to Gnd 2kVAC, I/P to O/P 3kVAC, O/P to Gnd 500VAC, O/P to Remote On/Off 100VAC for 1 min.				
Isolation Resistance	-	>100M at 25C & 70%RH, Output to Ground 500VDC, >10M Output to remote on/off 100VDC				
Vibration (non operating)	-	10 - 55Hz (1 min sweep), 19.6m/s ² constant, X, Y, Z axis, one hour each				
Shock (in packaging)	-	< 196.1m/s ²				
Safety Agency Approvals (2)	-	UL60601-1, EN60601, CSA-C22.2 No601.1-M90 (C-UL) (basic insulation), CE Mark				
Line Dip	-	Complies with SEMI F47 (200VAC line only)				
Conducted & Radiated EMI	-	EN55011 / EN55022-B, FCC-B, VCCI-B (HWS600 & 1500 Class A)				
Immunity	-	IEC61000-4-2 (Level 2,3), -3, -4, -6, (Level 3), -5 (Level 3,4), -8 (Level 4), -11				
Weight (Typ)	g	220 280	450 500	1000	1600	3800
Size (WxHxD)	in	1.04x3.23x3.74 1.04x3.23x4.72	1.1x3.23x6.3 1.46x3.23x6.3	2.4x3.23x6.5	3.94x3.23x6.5	4.98x3.23x11.02
Warranty	yrs	Limited lifetime warranty (See TDK-Lambda's terms & conditions)				

(1) 100/200VAC input

(2) See conditions of acceptability and clause 19.5DV.2 of UL60601 for equipment in proximity of patient

(3) HWS300-600 2.5kVAC Input to ground

HWS30-150/ME Not recommended for new designs, see HWS-A webpage

Output Ratings

Model	Voltage	Adjust Range	Max Curr(A) ⁴	Max Power(W)	Load Reg(mV)	Line Reg(mV)	Ripple Noise(mV)	Overshoot (V)	Efficiency (typ)% ¹
HWS30-5/ME	5V	4.0 - 6.0	6	30	40	20	120	6.25-7.25	77/80
HWS50-5/ME	5V	4.0 - 6.0	10	50	40	20	120	6.25-7.25	82/84
HWS100-5/ME	5V	4.0 - 6.0	20	100	40	20	120	6.25-7.25	83/86
HWS150-5/ME	5V	4.0 - 6.0	30	150	40	20	120	6.25-7.25	83/86
HWS30-12/ME	12V	9.6 - 14.4	2.5	30	96	48	150	15-17.4	81/83
HWS50-12/ME	12V	9.6 - 14.4	4.3	51.6	96	48	150	15-17.4	81/83
HWS100-12/ME	12V	9.6 - 14.4	8.5	102	96	48	150	15-17.4	83/86
HWS150-12/ME	12V	9.6 - 14.4	13	156	96	48	150	15-17.4	83/86
HWS300-12/ME	12V	9.6 - 14.4	27	324	72	48	150	15-17.4	80/83
HWS30-15/ME	15V	12.0 - 18.0	2	30	120	60	150	18.8-21.8	81/83
HWS50-15/ME	15V	12.0 - 18.0	3.5	52.5	120	60	150	18.8-21.8	81/83
HWS100-15/ME	15V	12.0 - 18.0	7	105	120	60	150	18.8-21.8	83/86
HWS150-15/ME	15V	12.0 - 18.0	10	150	120	60	150	18.8-21.8	83/86
HWS300-15/ME ⁽⁵⁾	15V	12.0 - 18.0	22	330	90	60	150	18.8-21.8	82/85
HWS30-24/ME	24V	19.2 - 28.8	1.3	31.2	192	96	200	30-34.8	83/86
HWS50-24/ME	24V	19.2 - 28.8	2.2	52.8	192	96	150	30-34.8	82/84
HWS100-24/ME	24V	19.2 - 28.8	4.5	108	192	96	150	30-34.8	84/87
HWS150-24/ME	24V	19.2 - 28.8	6.5	156	192	96	150	30-34.8	85/88
HWS300-24/ME	24V	19.2 - 28.8	14 (16.5 pk) ⁽⁶⁾	336	144	96	150	30-34.8	82/85
HWS600-24/ME	24V	19.2 - 28.8	27 (31 pk) ⁽⁶⁾	648	144	96	150	30-34.8	82/85
HWS1500-24/ME	24V	19.2 - 28.8, 4.8 - 28.8 ⁽⁷⁾	65 (105 pk) ⁽⁶⁾	1560(2520 pk) ⁽⁶⁾	144	96	200	30-34.8	84/88
HWS1500-36/ME	36V	28.8 - 43.2, 7.2 - 43.2 ⁽⁷⁾	42 (70 pk) ⁽⁶⁾	1512(2520 pk) ⁽⁶⁾	150	144	200	34-49.7	84/88
HWS30-48/ME	48V	38.4 - 52.8	0.65	31.2	384	192	200	55.2-64.8	82/83
HWS50-48/ME	48V	38.4 - 52.8	1.1	52.8	384	192	200	55.2-64.8	83/85
HWS100-48/ME	48V	38.4 - 52.8	2.1	100.8	384	192	200	55.2-64.8	84/87
HWS150-48/ME	48V	38.4 - 52.8	3.3	158.4	384	192	200	55.2-64.8	85/88
HWS300-48/ME ⁽⁵⁾	48V	38.4 - 52.8	7	336	288	192	350	55.2-64.8	82/85
HWS1500-48/ME	48V	38.4 - 52.8, 9.6 - 52.8 ⁽⁷⁾	32	1536	288	192	200	55.2-64.8	86/90

(4) Peak load for 10s maximum on time, 35% duty cycle

(5) Safety agency in progress - contact factory for status.

(6) 200-265AC Input

(7) Using voltage programming input - see installation manual for details

Options	
Suffix	Description
Blank	No Cover (HWS30-150/ME Only) HWS300-1500/ME the cover is always fitted
/MEA	The cover option for the HWS30-150/ME is special order only. HWS300-1500/ME the cover is always fitted

Other Medical Products	
KM Series	15 to 40W, PCB mount
CS Series	40 to 500W
EFE-M	300 to 400M
CFE	400W
MWS65	55 to 67W
NV Series	175 to 700W single & multiple output
Vega Series	450 to 900W single & multiple output
Alpha Series	1000W single and multiple output

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



HWS30-150/ME Not recommended for new designs, see HWS-A webpage