



- Limited Lifetime Warranty
- Medical Approvals
- Universal Input (85 - 265VAC)
- High Efficiency
- Broad 30W to 1500W product range
- RoHS Compliant Design

HWS-/ME Series

Single Output
Medical Power Supplies

Key Market Segments & Applications



Medical



Industrial



Test



Broadcast



Comm



LED



Cots

HWS-/ME Features and Benefits

Features

- Limited Lifetime Warranty
- Medical Approvals
- Wide Range AC Input

Benefits

- Lower Cost of Ownership
- Reduces System Approval Times
- Supports Global Use

Specifications

MODELS		HWS30A HWS50A	HWS100A HWS150A	HWS300	HWS600	HWS1000	HWS1500
ITEM							
Input Voltage range		85-265VAC (47-63Hz)		85-265VAC (47-63Hz)		85-265VAC (47-63Hz)	
Input Current (Typ)	(1)	A	0.65 / 0.4 0.65 / 0.35	1.3 / 0.65 1.9 / 0.95	4.1 / 2.1	8.1 / 3.9	13.5/7.0 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)	(2)	mA	<0.5mA				
Remote Sense			No		Yes		
Indicator		-	Green LED = ON				
Remote On/Off		-	No		Yes (Isolated from output)		
Parallel operation		-	No		Single wire conn. (5 units max)		
DC Good		-	No		Yes		
Voltage Programming			No				Yes
Operating Temperature and Derating		-	HWS30A-150A: -10°C to +70°C, (derating applies above 50°C please refer to individual model specification for derating graph) HWS300-1500: -10°C to +70°C, (-10 to +50°C: 100%, derate linearly to 50% load from +50°C to +70°C)				
Storage Temperature		°C	-30°C 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)	-	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, >10MΩ Output to remote on/off 100VDC				
Vibration (non operating)		-	10 - 55Hz (1 min sweep), 19.6m/s² constant, X, Y, Z axis, one hour each				
Shock (in packaging)		-	< 196.1m/s²				
Safety Agency Approvals	(2)	-	ES60601-1, EN60601-1, CSA-C22.2 No6011-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, -3, -4, -6, -8, -11, IEC61000-6-2				
Weight (Typ)		g	220 280	450 500	1000	1600	3200 3800
Size (WxHxD)			26 x 82 x 95	33 x 82 x 160			
(with cover except 30 & 50W)		mm	26 x 82 x 120	42 x 82 x 160	61 x 82 x 165	100 x 82 x 165	126.5 x 82 x 240 280 x 82 x 126.5
Warranty			Limited Lifetime Warranty (See TDK-Lambda terms & conditions)				

Notes: (1) 100/200VAC input (2) See clause 19.5DV.2 of UL60601 for equipment in proximity of patient (3) HWS300-600 2.5kVAC Input to ground

Model Selector									
Model	Voltage	Adjust Range	Max Curr(A) ⁴	Max Power(W)	Load Reg(mV)	Line Reg(mV)	Ripple Noise(mV)	Overvoltage (V)	Efficiency (typ)% ¹
HWS30A-5/ME	5V	4.0 - 6.0	6	30	40	20	120	6.25-7.25	77/80
HWS50A-5/ME	5V	4.0 - 6.0	10	50	40	20	120	6.25-7.25	82/84
HWS100A-5/ME	5V	4.0 - 6.0	20	100	40	20	120	6.25-7.25	83/86
HWS150A-5/ME	5V	4.0 - 6.0	30	150	40	20	120	6.25-7.25	83/86
HWS600-5/ME	5V	4.0 - 6.0	120	600	30	20	120	6.25-7.25	80/83
HWS30A-12/ME	12V	9.6 - 14.4	2.5	30	96	48	150	15-17.4	81/83
HWS50A-12/ME	12V	9.6 - 14.4	4.3	51.6	96	48	150	15-17.4	81/83
HWS100A-12/ME	12V	9.6 - 14.4	8.5	102	96	48	150	15-17.4	83/86
HWS150A-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
HWS600-12/ME	12V	9.6 - 14.4	53	636	72	48	150	15-17.4	80/83
HWS30A-15/ME	15V	12.0 - 18.0	2	30	120	60	150	18.8-21.8	81/83
HWS50A-15/ME	15V	12.0 - 18.0	3.5	52.5	120	60	150	18.8-21.8	81/83
HWS100A-15/ME	15V	12.0 - 18.0	7	105	120	60	150	18.8-21.8	83/86
HWS150A-15/ME	15V	12.0 - 18.0	10	150	120	60	150	18.8-21.8	83/86
HWS300-15/ME	15V	12.0 - 18.0	22	330	90	60	150	18.8-21.8	82/85
HWS600-15/ME	15V	12.0 - 18.0	43	645	90	60	150	18.8-21.8	81/84
HWS30A-24/ME	24V	19.2 - 28.8	1.3	31.2	192	96	200	30-34.8	83/86
HWS50A-24/ME	24V	19.2 - 28.8	2.2	52.8	192	96	150	30-34.8	82/84
HWS100A-24/ME	24V	19.2 - 28.8	4.5	108	192	96	150	30-34.8	84/87
HWS150A-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)	336	144	96	150	30-34.8	82/85
HWS600-24/ME	24V	19.2 - 28.8	27 (31 pk)	648	144	96	150	30-34.8	82/85
HWS1000-24/ME	24V	19.2 - 28.8	46 (58.5 pk)	1104	150	96	150	30-34.8	85/87
HWS1500-24/ME	24V	4.8 - 28.8 ⁽⁷⁾	65/70 ⁽¹⁾ (105pk ⁽⁵⁾)	1560/1680 ⁽¹⁾ (2520 pk ⁽⁵⁾)	144	96	200	30-34.8	84/88
HWS1000-36/ME	36V	28.8 - 43.2	30.7 (39 pk)	1104	150	144	200	45-49.7	85/88
HWS1500-36/ME	36V	7.2 - 43.2 ⁽⁶⁾	42/46.5 ⁽¹⁾ (70 pk) ⁽⁵⁾	1512/1674 ⁽¹⁾ (2520 pk ⁽⁵⁾)	150	144	200	34-49.7	84/88
HWS30A-48/ME	48V	38.4 - 52.8	0.65	31.2	384	192	200	55.2-64.8	82/83
HWS50A-48/ME	48V	38.4 - 52.8	1.1	52.8	384	192	200	55.2-64.8	83/85
HWS100A-48/ME	48V	38.4 - 52.8	2.1	100.8	384	192	200	55.2-64.8	84/87
HWS150A-48/ME	48V	38.4 - 52.8	3.3	158.4	384	192	200	55.2-64.8	85/88
HWS300-48/ME	48V	38.4 - 52.8	7	336	288	192	350	55.2-64.8	82/85
HWS600-48/ME	48V	38.4 - 52.8	13	624	288	192	350	55.2-64.8	83/86
HWS1000-48/ME	48V	38.4 - 52.8	23	1104	300	192	200	55.2-60	86/88
HWS1500-48/ME	48V	9.6 - 52.8 ⁽⁶⁾	32	1536	288	192	200	55.2-64.8	86/90

(4) Peak load for 10s maximum on time, 35% duty cycle (5) 200-265AC Input

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

Options	
Suffix	Description
Blank	No cover (except HWS300-1500 cover fitted) as standard
/A	Cover fitted (egHWSA100-24/MEA) option available for HWSA100 & HWSA150 only

NOTES

A : MODEL NAME, OPTION CODE, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT AND COUNTRY OF MANUFACTURE ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.

B : M3 EMBOSSED, TAPPED AND COUNTERSUNK HOLES (4) FOR CUSTOMER CHASSIS MOUNTING. SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.

ACCESSORIES

- SHORT PIECE (NET 2) FOR SHORTING PURPOSE (+S→+V, -S→-V) : MOUNTED AT TIME OF SHIPMENT.

[illegible]

Technical Drawing Details:

- Top View:** Dimensions include 126.5±1 (total width), 82±1 (top width), 56.8 (top width), 20 (top width), 23.3 (top width), 11.2 (top width), 73.6 (left height), 8.1 (left height), 11.1 (left height), 15.1 (bottom width), 4-M4 (bottom mounting), NAME PLATE (bottom), SEE NOTE D (top right), BUS BAR SPACER (RED) (top), BUS BAR SPACER (BLACK) (top), OUTPUT TERMINAL (SEE NOTE E) (right), INPUT TERMINAL (SEE NOTE C) (right), 25±1 (right height), 46MAX (right height), 260±0.5 (right length), 7.25 (right length), 112±0.5 (right length), AIR FLOW (right), 8-M4 (BOTH SIDES) (SEE NOTE C) (right), 8-M4 (BOTH SIDES) (SEE NOTE C) (right), 60±0.5 (right length), 11 (right length), 4MAX (right length), 20MAX (bottom length), 20 (bottom length), 45.4±1 (bottom length), 35±1 (bottom length), 20±1 (bottom length), 4-M4 (bottom mounting), NAME PLATE (bottom), SEE NOTE A (bottom left), SEE NOTE B (bottom left), SEE NOTE A (bottom left).
- Side View:** Dimensions include 20 (height), 22 (height), 10 (height), 35±1 (height), 20±1 (height), 4-M4 (mounting), NAME PLATE (mounting), SEE NOTE C (mounting), 8-M4 (BOTH SIDES) (SEE NOTE C) (mounting), 8-M4 (BOTH SIDES) (SEE NOTE C) (mounting), 60±0.5 (length), 11 (length), 4MAX (length), 20MAX (length), 20 (length), 45.4±1 (length), 35±1 (length), 20±1 (length), 4-M4 (mounting), NAME PLATE (mounting), SEE NOTE A (mounting), SEE NOTE B (mounting), SEE NOTE A (mounting).
- Front View:** Dimensions include 126.5±1 (width), 82±1 (width), 56.8 (width), 20 (width), 23.3 (width), 11.2 (width), 73.6 (height), 8.1 (height), 11.1 (height), 15.1 (width), 4-M4 (mounting), NAME PLATE (mounting), SEE NOTE D (mounting), BUS BAR SPACER (RED) (mounting), BUS BAR SPACER (BLACK) (mounting), OUTPUT TERMINAL (SEE NOTE E) (mounting), INPUT TERMINAL (SEE NOTE C) (mounting), 25±1 (height), 46MAX (height), 260±0.5 (length), 7.25 (length), 112±0.5 (length), AIR FLOW (mounting), 8-M4 (BOTH SIDES) (SEE NOTE C) (mounting), 8-M4 (BOTH SIDES) (SEE NOTE C) (mounting), 60±0.5 (length), 11 (length), 4MAX (length), 20MAX (length), 20 (length), 45.4±1 (length), 35±1 (length), 20±1 (length), 4-M4 (mounting), NAME PLATE (mounting), SEE NOTE A (mounting), SEE NOTE B (mounting), SEE NOTE A (mounting).

Accessories:

- ATTACHED CONNECTOR
- SHORTING +5-V, -V, -5-V, PV-REF & CNT-TOG ATTACHED ON CN01 AT SHIPMENT

Notes:

- MODEL NAME, OPTION, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- COUNTRY OF MANUFACTURE IS SHOWN HERE.
- M4 TAPPED HOLES (16) FOR CUSTOMER CHASSIS MOUNTING. (SCREWS MUST NOT PROTRUDE INTO POWER SUPPLY BY MORE THAN 6mm.)
- RECOMMENDED M4 SCREWS TORQUE : 1.27N·m
- I/O SIGNAL CONNECTOR CONNECTOR : S12B-PHDS5(LF)(SN) (JST) MATCHING HOUSING : PHDR-12VS (JST) MATCHING CONTACT : SPHD-002T-P0.5(AWG28-24) (JST) OR SPHD-001T-P0.5(AWG26-22) (JST) OR BPHD-001T-P0.5(AWG26-22) (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)
- 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-PHDS5 (JST)	1. +V	7. PV
	2. +S	8. REF
	3. -V	9. CNT
	4. -S	10. TOG
	5. PG	11. PF
	6. COM	12. TOG

Dimensions:

1210.6 ± 0.4

11975.3 ± 1



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