

HWS300 Specifications (Read instruction manual carefully, before using the power supply unit.)

ITEMS/UNITS		MODEL	HWS300-3	HWS300-5	HWS300-12	HWS300-15	HWS300-24	HWS300-48	
Input	Voltage Range (*2)	V	AC85 - 265 or DC120 - 330						
	Frequency (*2)	Hz	47 - 63						
	Power Factor (100/200VAC)(typ) (*1)		0.99 / 0.95						
	Efficiency (100/200VAC)(typ) (*1)	%	74 / 77	79 / 82	80 / 83		82 / 85		
	Current (100/200VAC)(typ) (*1)	A	2.7 / 1.4	3.8 / 1.9	4.1 / 2.1				
	Inrush Current (100/200VAC)(typ) (*3)	A	20 / 40						
	Leakage Current (*10)	mA	Less than 0.75. (0.2 (typ) at 100VAC / 0.44 (typ) at 230VAC)						
Output	Nominal Voltage	VDC	3.3	5	12	15	24	48	
	Maximum Current (*13)	A	60		27	22	14 (16.5)		7
	Maximum Power	W	198	300	324	330	336		
	Maximum Line Regulation (*5)	mV	20		48	60	96	192	
	Maximum Load Regulation (*6)	mV	30		72	90	144	288	
	Temperature Coefficient		Less than 0.02% / °C						
	Maximum Ripple & Noise (0≤Ta≤70°C) (*4)	mVp-p	120		150		350		
	Maximum Ripple & Noise (-10≤Ta<0°C) (*4)	mVp-p	180		200		400		
	Hold-up Time (typ) (*9)	ms	20						
	Voltage Adjustable Range	VDC	2.64 - 3.96	4.0 - 6.0	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8	38.4 - 52.8	
Function	Over Current Protection (*7)	A	>63		> 28.4	>23.1	>16.7	>7.4	
	Over Voltage Protection (*8)	V	4.13 - 4.95	6.25 - 7.25	15.0 - 17.4	18.8 - 21.8	30.0 - 34.8	55.2 - 64.8	
	Remote Sensing		Possible						
	Remote ON/OFF Control		Possible						
	Parallel Operation		Possible						
	Series Operation		Possible						
	Monitoring Signal		PF (Open collector output)						
	Line DIP		Designed to meet SEMI-F47 (200VAC Line only)						
	Environment	Operating Temperature (*11)	°C	-10 to +70 (-10 to +50: 100%, +70: 50%)					
		Storage Temperature	°C	-30 to +85					
Operating Humidity		%RH	10 - 90 (No dewdrop)						
Storage Humidity		%RH	10 - 95 (No dewdrop)						
Vibration			At no operating, 10 - 55Hz (sweep for 1min) 19.6m/s ² constant, X, Y, Z 1hour each.						
Shock (In package)			Less than 196.1m/s ²						
Cooling			Forced air by blower fan						
Isolation	Withstand Voltage		Input - FG : 2.5kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG: 500VAC (100mA), Output-CNT: 100VAC(100mA) for 1min						
	Isolation Resistance		More than 100MΩ Output - FG : 500VDC More than 10MΩ Output -CNT : 100VDC at 25°C and 70%RH						
Standards	Safety Standards (*12)		Approved by UL60950-1, UL508 (24V model only), CSA C22.2 No.60950-1, CSA C22.2 No.14-M95 (24V model only), EN60950-1, EN50178 Designed to meet DENAN						
	PFHC		Designed to meet IEC61000-3-2						
	EMI		Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B						
	Immunity		Designed to meet IEC61000-4-2(Level 2,3), -3(Level 3), -4(Level3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11						
Mechanical	Weight (typ)	g	1000						
	Size (W x H x D)	mm	61 x 82 x 165 (Refer to outline drawing)						

- (*1) At 100/200VAC, Ta=25°C and maximum output power.
- (*2) For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100-240VAC (50/60Hz).
- (*3) Not applicable for the inrush current to noise filter for less than 0.2ms.
- (*4) Measure with JEITA RC-9131A probe, bandwidth of scope :100MHz.
- (*5) 85 - 265VAC, constant load.
- (*6) No load-full load, constant input voltage.
- (*7) 3.3, 5V model: Constant current limit and hiccup with automatic recovery.
12 - 48V model: Constant current limit with automatic recovery.
Avoid to operate at over load or short circuit condition for more than 30 seconds.
- (*8) OVP circuit will shut the output down, manual reset (CNT reset or Re power on).
- (*9) At 100/200VAC, nominal output voltage and maximum output current.
- (*10) Measured by the each measuring method of UL, CSA, EN and DENAN (at 60Hz), Ta=25°C.
- (*11) Ratings - Derating at standard mounting. Refer to output derating curve.
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.
- (*12) As for DENAN, designed to meet at 100VAC.
- (*13) () : Peak output current at 200VAC. Operating time at peak output is less than 10 sec, duty is less than 35%.

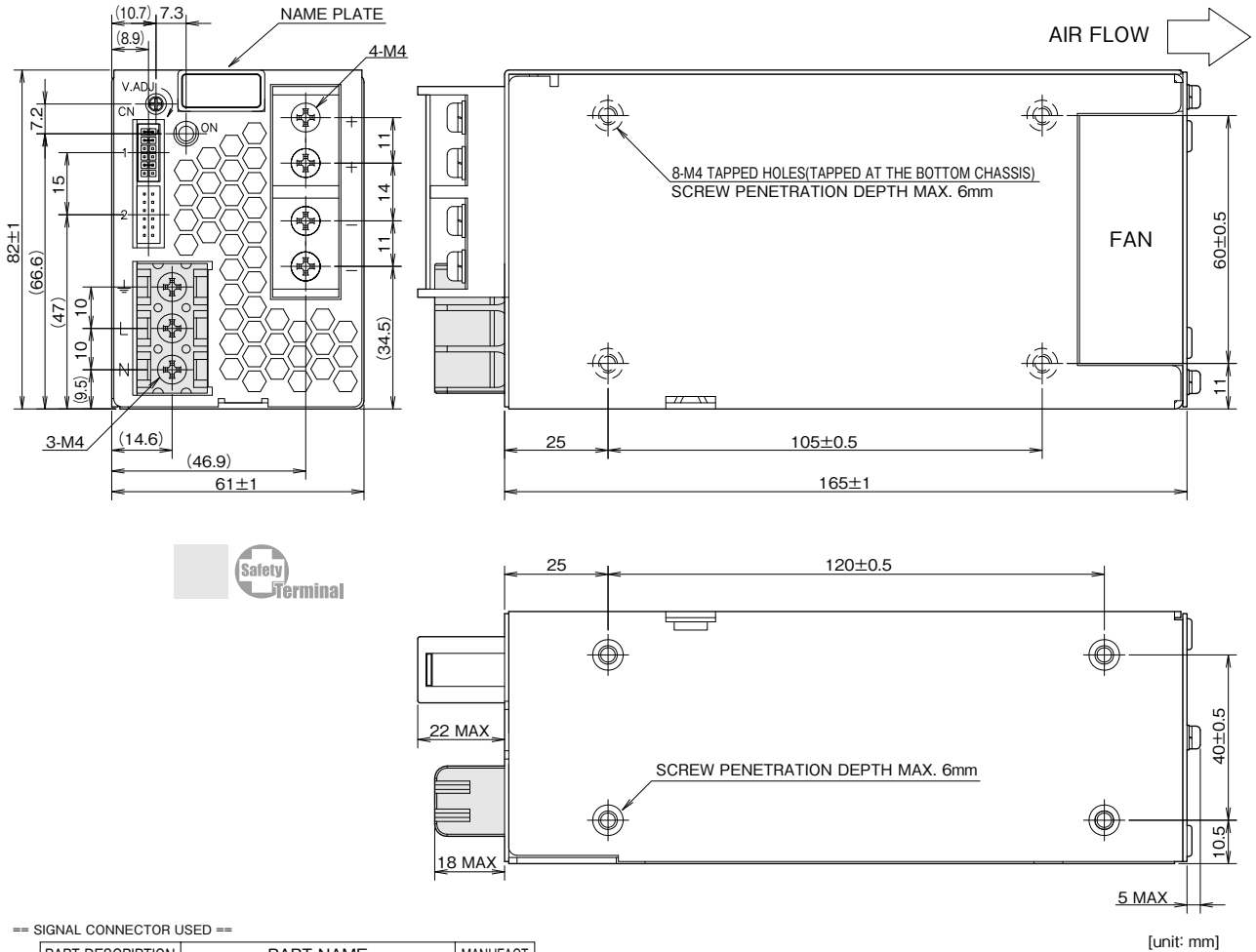
● Recommended EMC Filter



RSEN-2006
Please refer to "TDK-Lambda EMC Filters" catalog.

Outline Drawing

[HWS300]



== SIGNAL CONNECTOR USED ==

PART DESCRIPTION	PART NAME	MANUFACT
PIN HEADER	S12B-PHDSS	JST

== MATCHING HOUSINGS, PINS & TOOL ==

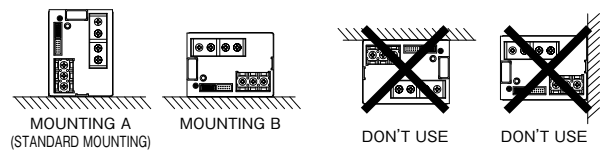
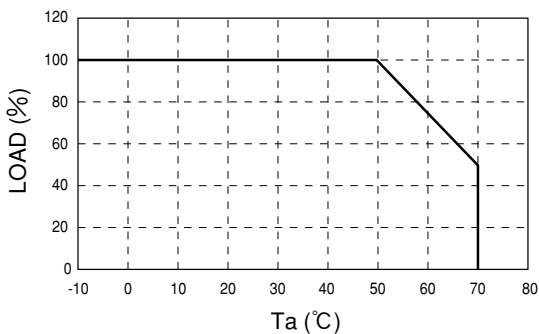
PART DESCRIPTION	PART NAME	MANUFACT
SOCKET HOUSING	PHDR-12VS	JST
TERMINAL PINS	SPHD-002T-P0.5 (AWG28 - 24) SPHD-001T-P0.5 (AWG26 - 22)	JST
HAND CRIMPING TOOL	YRS-620 (SPHD-002T-P0.5) YC-610R (SPHD-001T-P0.5)	JST

== ACCESSORIES ==

- *COVER FOR BARRIER TERMINAL STRIP -----1 (ATTACHED ON TERMINAL AT SHIPMENT)
- *SHORT PIECE -----1
SHORTING +Vm---+S, -Vm---S, CNT---TOG (ATTACHED ON CN1 AT SHIPMENT)

[unit: mm]

Output Derating



HWS600 Specifications (Read instruction manual carefully, before using the power supply unit.)

ITEMS/UNITS	MODEL	HWS600-3	HWS600-5	HWS600-12	HWS600-15	HWS600-24	HWS600-48	
Input	Voltage Range (*2)	V AC85 - 265 or DC120 - 330						
	Frequency (*2)	Hz 47 - 63						
	Power Factor (100/200VAC)(typ) (*1)	0.99 / 0.95						
	Efficiency (100/200VAC)(typ) (*1)	% 75 / 78	80 / 83		81 / 84		82 / 85	83 / 86
	Current (100/200VAC)(typ) (*1)	A 5.4 / 2.6	7.5 / 3.6		8.1 / 3.9			
	Inrush Current (100/200VAC)(typ) (*3)	A 20 / 40						
	Leakage Current (*10)	mA Less than 0.75. (0.2 (typ) at 100VAC / 0.44 (typ) at 230VAC)						
Output	Nominal Voltage	VDC 3.3	5	12	15	24	48	
	Maximum Current (*13)	A 120		53	43	27(31)		13
	Maximum Power	W 396	600	636	645	648	624	
	Maximum Line Regulation (*5)	mV 20		48	60	96	192	
	Maximum Load Regulation (*6)	mV 30		72	90	144	288	
	Temperature Coefficient	Less than 0.02% / °C						
	Maximum Ripple & Noise (0≤Ta≤70°C) (*4)	mVp-p 120		150		350		
	Maximum Ripple & Noise (-10≤Ta≤ 0°C) (*4)	mVp-p 180		200		400		
	Hold-up Time (typ) (*9)	ms 20ms						
	Voltage Adjustable Range	VDC 2.64 - 3.96	4.0 - 6.0	9.6 - 14.4	12.0 - 18.0	19.2 - 28.8	38.4 - 52.8	
Function	Over Current Protection (*7)	A >126		>55.7	>45.2	>31.4	>13.7	
	Over Voltage Protection (*8)	VDC 4.13 - 4.95	6.25 - 7.25	15.0 - 17.4	18.8 - 21.8	30.0 - 34.8	55.2 - 64.8	
	Remote Sensing	Possible						
	Remote ON/OFF Control	Possible						
	Parallel Operation	Possible						
	Series Operation	Possible						
	Monitoring Signal	PF (Open collector output)						
Line DIP	Designed to meet SEMI-F47 (200VAC Line only)							
Environment	Operating Temperature (*11)	°C -10 to +70 (-10 to +50: 100%, +70: 50%)						
	Storage Temperature	°C -30 to +85						
	Operating Humidity	%RH 10 - 90 (No dewdrop)						
	Storage Humidity	%RH 10 - 95 (No dewdrop)						
	Vibration	At no operating, 10 - 55Hz (sweep for 1min) 19.6m/s ² constant, X, Y, Z 1hour each.						
	Shock (In package)	Less than 196.1m/s ²						
Isolation	Withstand Voltage	Input - FG : 2.5kVAC (20mA), Input - Output : 3kVAC (20mA) Output - FG : 500VAC (100mA), Output - CNT : 100VAC (100mA) for 1min						
	Isolation Resistance	More than 100MΩ Output - FG : 500VDC More than 10MΩ Output - CNT: 100VDC at 25°C and 70%RH						
Standards	Safety Standards (*12)	Approved by UL60950-1, UL508 (24V model only), CSA C22.2 No.60950-1, CSA C22.2 No.14-M95 (24V model only), EN60950-1, EN50178, Designed to meet DENAN						
	PFHC	Designed to meet IEC61000-3-2						
	EMI	Designed to meet EN55011/EN55022-B, FCC-B, VCCI-B						
Mechanical	Immunity	Designed to meet IEC61000-4-2(Level 2,3), -3(Level 3), -4(Level 3), -5(Level 3,4), -6(Level 3), -8(Level 4), -11						
	Weight (typ)	g 1600						
	Size (W x H x D)	mm 100 x 82 x 165 (Refer to outline drawing)						

(*1) At 100/200VAC, Ta=25°C and maximum output power.

(*2) For cases where conformance to various safety specs (UL, CSA, EN) are required, to be described as 100 - 240VAC (50/60Hz).

(*3) Not applicable for the inrush current to noise filter for less than 0.2ms. Inrush current is 30A (typ) when PFHC start-up.

(*4) Measure with JEITA RC-9131A probe, bandwidth of scope :100MHz.

(*5) 85 - 265VAC, constant load.

(*6) No load - full load, constant input voltage.

(*7) 3V and 5V model: Constant current limit and hiccup with automatic recovery.
12 - 48V model: Constant current limit with automatic recovery.
Avoid to operate at over load or short circuit condition for more than 30 seconds.

(*8) OVP circuit will shut the output down, manual reset (CNT reset or re-power on).

(*9) At 100/200VAC, nominal output voltage and maximum output current.

(*10) Measured by the each measuring method of UL, CSA, EN and DENAN (at 60Hz), Ta=25°C.

(*11) Ratings - Derating at standard mounting. Refer to output derating curve.
- Load (%) is percent of maximum output power or maximum output current, whichever is greater.

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(*13) () : Peak output current at 200VAC. Operating time at peak output is less than 10 sec, duty is less than 35%.

● Recommended EMC Filter

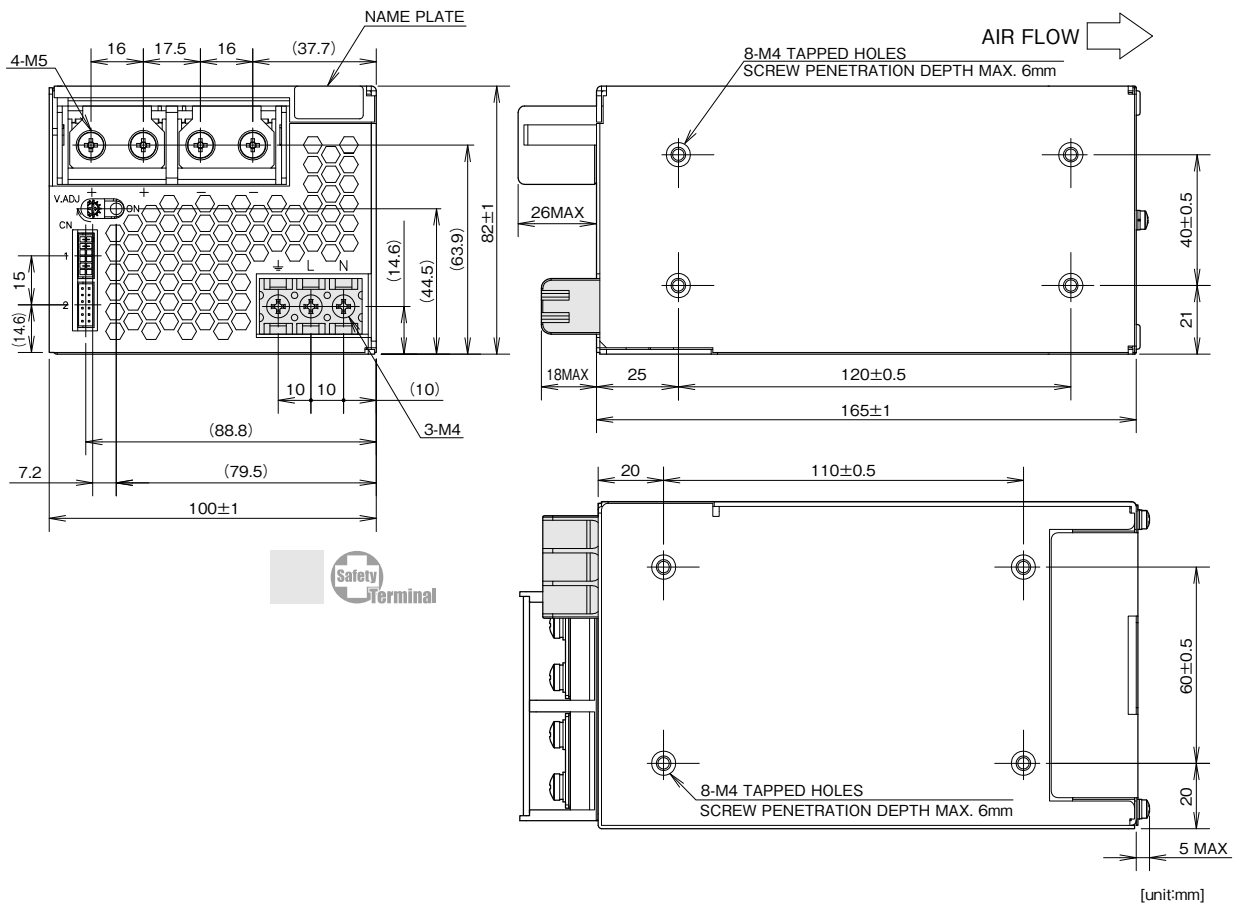


RSEN-2016

Please refer to "TDK-Lambda EMC Filters" catalog.

Outline Drawing

[HWS600]



== SIGNAL CONNECTOR USED ==

PART DESCRIPTION	PART NAME	MANUFACT
PIN HEADER	S12B-PHDSS	JST

== MATCHING HOUSINGS, PINS & TOOL ==

PART DESCRIPTION	PART NAME	MANUFACT
SOCKET HOUSING	PHDR-12VS	JST
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HAND CRIMPING TOOL	YRS-620 (SPHD-002T-P0.5) YC-610R (SPHD-001T-P0.5)	JST

== ACCESSORIES ==

- *COVER FOR BARRIER TERMINAL STRIP ----1
(ATTACHED ON TERMINAL AT SHIPMENT)
- *SHORT PIECE -----1
SHORTING +Vm—+S, -Vm—S, CNT—TOG
(ATTACHED ON CN1 AT SHIPMENT)

Output Derating

