TDK-Lambda

HWS3000GT

A292-01-01B

SPECIFICATIONS (1/3)

ITEMS \ MODEL				HWS3000GT -24	HWS3000GT -48	HWS3000GT -60	HWS3000GT -80	HWS3000GT -130	HWS3000GT -250
INPUT RATING									
Input Voltage Range	(*13)		-	3 phase 170- 265VAC (47-63Hz)					
Efficiency (Typ.)	(*2)	200/230VAC	%	91	92	92	92	93	93
Input Current (Typ.)	(*2)	200/230VAC	A	10.0	9.9	9.9	9.9	9.9	9.9
Power Factor (Typ.)	(*2)	200VAC	-	0.95					
Inrush Current (Typ.)	(*2),(*3)	200VAC	A	60 at 1st Inrush, 80 at 2nd Inrush					
Leakage Current	(*4)		-	LESS THAN 3.0 mA (240VAC , 60Hz)					
OUTPUT RATING									
Nominal Output Voltage			V	24	48	60	80	130	250
Maximum Output Voltage	(*1)		V	28.8	52.8	66.0	96.0	156.0	300.0
Maximum Output Current			A	125	62.6	50	37.5	23.2	12
Maximum Output Power			W	3000	3004.8	3000	3000	3016	3000
CONSTANT VOLTAGE MODE									
Output Voltage Range by adjustment trimmer	(*1)		V	19.2 - 28.8	38.4 - 52.8	48.0 - 66.0	64.0 -96.0	104.0 - 156.0	200.0 - 300.0
Output Voltage Range by Programming	(*1)(*5)		V	0 - 28.8	0 - 52.8	0 - 66.0	0 - 96.0	0 - 156.0	0 - 300.0
Maximum Line Regulation	(*6)		mV	96	192	240	320	520	1000
Maximum Load Regulation	(*7)		mV	192	384	480	640	1040	2000
Temperature Coefficient			-	0.02%/°C					
Maximum Ripple & Noise		0 ≤ Ta ≤ 70°C	mVp-p	300	400	500	600	866	1250
	(*8)	-20 ≤ Ta < 0°C	mVp-p	360	480	600	740	1083	1600
Hold-up Time (Typ.)			-	20ms at 1500W, 10ms at 3000W					
Remote Sensing			-	Possible					
Output Voltage External Control Using CV Terminal			-	Apply external voltage or current : 1 - 5V or 4 - 20mA Output Voltage : 0% - Nominal output voltage					
Output Voltage External Control Using Modbus RTU	(*17)		-	0-4,000 (Output Voltage : 0% - Nominal output voltage)					
CONSTANT CURRENT MODE									
Output Current External Control Range	(*1)(*11)		A	0 - 125.0	0 - 62.6	0 - 50.0	0 - 37.5	0 - 23.2	0 - 12.0
Maximum Line Regulation	(*6)		mA	500	250.4	200	150	92.8	48
Maximum Load Regulation	(*12)		mA	1000	500.8	400	300	185.6	96
Temperature Coefficient			-	0.02%/°C					
Output Current External Control Using CC Terminal			-	Apply external voltage or current : 1 - 5V or 4 - 20mA Output Current : 0% - Maximum output Current					
Output Current External Control Using Modbus RTU	(*17)		-	0-4,000 Output Current : 0% - Maximum output Current					
PROTECTION									
Over Current Protection	(*9)		A	131.2 <	65.7 <	52.5 <	39.3 <	24.3 <	12.6 <
Over Voltage Protection	(*10)		V	30.4 - 31.5	56.1 - 58.1	70.2 - 72.6	101.6 -104.8	165.1 - 170.3	317.5 - 327.5
ANALOG PROGRAMMING AND MONITORING									
Remote ON/OFF Control			-	Possible					
Parallel Operation	(*14)		-	Possible, Current balancing function is provided					
Series Operation	(*15)		-	Possible, Voltage balancing function is provided					
Output Voltage Monitor using VB terminal	(*16)		-	Output Voltage : 0% - Nominal output voltage VB terminal voltage : 1 - 5V					
Output Current Monitor using CB terminal	(*16)		-	Output Current : 0% - Maximum output Current CB terminal voltage : 1 - 5V					
Monitoring Signal			-	Power Fail(VPF, CPF), AC Fail(ACF) (Open Collector Output)					

HWS3000GT

SPECIFICATIONS (2/3)

ITEMS \ MODEL			HWS3000GT -24	HWS3000GT -48	HWS3000GT -60	HWS3000GT -80	HWS3000GT -130	HWS3000GT -250
COMMUNICATION								
Digital Communication	(*17)	-	Modbus RTU (RS-485)					
AUXILIARY OUTPUT								
Output Voltage (Typ.)		V	5					
Maximum Output Current		A	2					
ENVIRONMENT								
Operating Temperature	(*18)	-	-20 to +70°C, Guarantee Start up : -40 to -20°C					
Storage Temperature		-	-40°C to +85°C					
Operating Humidity		-	20 to 90%RH (Non Condensing)					
Storage Humidity		-	10 to 95%RH (Non Condensing)					
Vibration	(*19)(*20)	-	At no operating, 10 - 55Hz (Sweep for 1min) 19.6m/s^2 Constant, X,Y,Z 1hour each.					
Shock	(*19)(*20)	-	Less than 196m/s^2					
Cooling	(*21)	-	Forced air cooling (Internal FAN)					
ISOLATION								
Withstand Voltage		-	Input-FG : 2.0kVAC (20mA) for 1min. Input-Output : 3.0kVAC (20mA) for 1min. Input-Signal, AUX : 3.0kVAC (20mA) for 1min. Output-Signal, AUX : 2.0kVAC (20mA) for 1min. Output-FG : 1.5kVAC (20mA) for 1min.					
Isolation Resistance		-	More than 100MΩ at 25°C and 70%RH, Output - FG 500VDC					
STANDARD AND COMPLIANCE								
Safety	(*13)	-	Approved by IEC/EN/UL/CSA 62368-1 (Altitude ≤ 5,000m) Approved by IEC/EN62477-1 (OVC III) (Altitude ≤ 2,000m) Designed to meet Den-an Appendix 12 (J62368-1)					
Conducted Emission	(*19)	-	Designed to meet EN55011/EN55032-A, FCC-ClassA, VCCI-A					
Radiated Emission	(*19)	-	Designed to meet EN55011/EN55032-A, FCC-ClassA, VCCI-A					
Immunity	(*19)(*22)	-	Designed to meet IEC61000-6-2 (IEC61000-4-2, -3, -4, -5, -6, -8, -11)					
Line DIP	(*19)	-	Designed to meet SEMI-F47 (at 200VAC)					
MECHANICAL								
Weight (Typ.)		kg	2.3					
Size (W x H x D)		mm	150x 61 x 270 (Refer to Outline Drawing)					

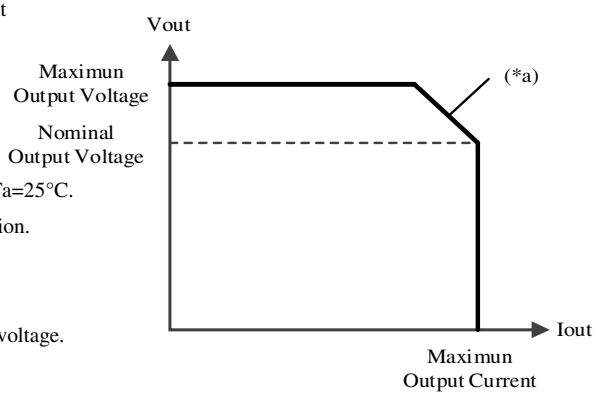
HWS3000GT

SPECIFICATIONS (3/3)

*Read Instruction Manual (A292-04-01_) carefully, before using the power supply unit.

=NOTES=

Fig.A



*1. When using the product above the nominal output voltage, derate the output current so that the maximum output power is not exceeded. Please refer to Fig. A.
(*a) Limited by maximum output power value

*2. Ta=25°C, nominal output voltage and maximum output power.

*3. Not applicable for the inrush current to Noise Filter for less than 0.2ms.

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

*5. Output voltage external control range using CV terminal and communication function.

*6. 170-265VAC, constant load

*7. No load - Full load, constant input voltage.

*8. Please refer to Instruction Manual (A292-04-01_) for measurement of ripple noise voltage.

*9. Constant current limit with automatic recovery.
If the overcurrent condition continues for more than 30 seconds, the output will shut down.
A dynamic overload, such as an output short circuit, will cause the output to shut down.

*10. OVP circuit will shut the output down, manual reset.

*11. Output voltage external control range using CC terminal and communication function.

*12. Minimum output voltage - Nominal output voltage, constant input voltage, maximum output current operation.

*13. For cases where conformance to various safety specs (UL, CSA, EN) are required,
to be described as 200 - 240VAC(50-60Hz).

*14. Up to 10 units

*15. Up to 3 units (250V : Up to 2 units)

*16. Use a measuring instrument whose input impedance is 500kΩ or more.

*17. <Communication function example>
- Control of output voltage and output current. - Remote ON/OFF control.
- Product status including product life can be monitored.
- Operation history can be obtained.(OCP,OVP,AC Fail, etc.) etc.
Refer to instruction manual (A292-04-01_) and communication manual (A291-04-02_).

*18. Output Derating
- Refer to OUTPUT CURRENT vs. AMBIENT TEMPERATURE (A292-01-02_).
At -40 to -20°C, the electrical characteristics are not guaranteed.

*19. The specifications are based on TDK-Lambda standard measurement conditions.
The power supply is considered a component which will be installed into a final equipment.
The final equipment should be re-evaluated that it meets EMC, vibration and shock requirement.

*20. Mounting A only.

*21. Variable speed fan. Fan noise is 45dB (typ) at 25°C and 70% load.

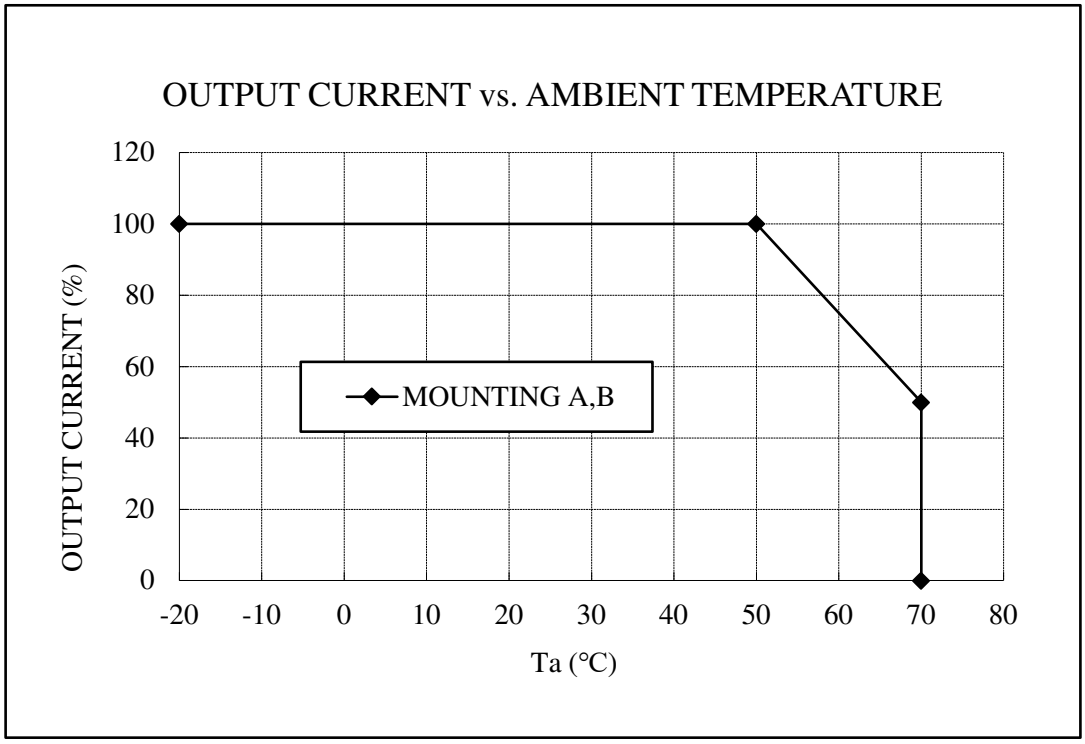
*22. Signal and control ports interface cables length: Less than 3m, DC output power port cables length: Less than 30m.

HWS3000GT

OUTPUT DERATING

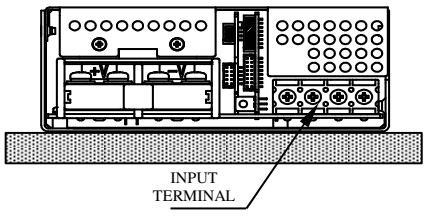
A292-01-02

Ta (°C)	OUTPUT CURRENT (%)
	MOUNTING A,B
-20 to +50	100
70	50



MOUNTING A

(STANDARD MOUNTING)



MOUNTING B