Digital Power Solutions

(877) 634-0982 <u>www</u>.digipwr.com

HDM500 SERIES

AC-DC ITE AND MEDICAL SWITCHING PSU 500 WATT



KEY FEATURES

Digital Power's HDM500 Series are switching power supplies that produce superior output wattages with natural convection. The series include enclosed, open fame and U bracket format with output voltage options of 12V, 15V, 24V and 48V. Featured with compact, low profile footprint, and best-in-class performance, HDM500 Series are optimal for ITE and Medical Applications.

Designed with energy saving in mind, Digital Power's HDM500 Series boasts not only high operating efficiency up to 93%, but also high-power density with full input range of 90-264Vac.

HDM500 operates over wide temperature range from -30°C to +70°C with complete protections and certified to UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2 Safety Approvals.



PRODUCT SPECIFICATION

Enclosed, U Bracket Switching Power Supply

- Remote ON/OFF Function
- 240 Watt with Free Air Convection
- 500 Watt with 30CFM FAN
- 4000VAC Input to Output 2MOPP Insulation
- Built-in 12V/0.3A Auxiliary Output
- Standby 5V@1A with Fan, @0.4A without Fan
- High Efficiency up to 93%
- With P.F.C. Function >0.94
- Current Share Function for Option (except for 115)
- Ultra Compact Size:

HDM500O: 5.03 x 3.0 x 1.38 Inches HDM500U: 5.5 x 3.25 x 1.6 Inches HDM500E: 5.5 x 3.25 x 2.42 Inches

ELECTRICAL SPECIFICATION - HDM5000 SERIES

Model No.			HDM5000-112	HDM500O-115	HDM5000-124	HDM5000-148	
Max Output V	Vattage (W)		500 W (30CFM FAN)				
			Others: 230 W (115 VAC) / 240 W (230 VAC)				
Max Output V	Vattage (W)		115: 210 W (115 VAC) / 240 W (250 VAC)				
	Voltage (Note 3)		90-264 VAC or		230 VAC)		
Volidge (Nole 3)		90-204 VAC or	127-570 VDC				
	Frequency (Hz)	47-63 Hz					
Input	Current (Full load)		< 6.3 A max. (115	VAC) / <3.15 A mo	ax. (230 VAC)		
1	Inrush Current (<2ms) (Clod Sta	ırt)	< 40 A max. (115	VAC) / < 80 A ma	x. (230 VAC)		
	Leakage Current		< 0.1 mA max. (Ir				
	Power Factor (at 230 VAC)		PF>0.94 at Full L				
	Voltage (V.DC.)		12V	15∨	24V	48V	
	Voltage Accuracy		±2%				
	Voltage Adj. Range (V.DC)		±4% Output Vol	taae			
	Current (with 30CFM FAN) (A) (I	max.)	41.5	33.3	20.8	10.41	
		,					
	Current(Free air Convection) (A) max	at 115 VAC at 230 VAC	19.16 20	14	9.58 10	4.8 5	
	()	di 250 VAC		14.00	10	5	
Output	Line Regulation (115-264 VAC)		±0.5%				
Culpul	Load Regulation (10–100%) (typ.))	±1%				
	Minimum Load		3%				
	Maximum Capacitive Load	5,000μF	3,750μF	2,500µF	1,250μF		
	Ripple & Noise (typ.)		160mV	160mV	240mV	480mV	
	Efficiency (at 230 VAC)		90.5%	90.5%	92%	93%	
10	Hold-up Time (at 115 VAC)		8 ms min.				
	Over Power Protection		Auto recovery				
	Over Voltage Protection		Auto recovery				
	Overt Temperature Protection		Auto recovery				
Protection			Protection level 1 (nominal) : Continuous, Auto recovery				
	Short Circuit Protection		Protection level 2 (instantaneous high current) : Latch				
	Input-Output (V.AC)		4000VAC or 5656VDC				
Isolation	Input-PE (V.AC)		2000V				
	Output-PE (V.AC)		1500∨				
	Operating Temperature		-30°C+70°C (v	vith deratina)			
1	Storage Temperature		-35°C+85°C				
			±0.03%/°C(0~50°C)				
	Temperature Coefficient		±0.06%/°C(-30~0°C)				
	Altitude During Operation		5000m				
	Humidity		95% RH				
Environment	Atmospheric Pressure		56 kPa to 106 kP	a			
MTBF			>160,000 h e 25	°C (MIL-HDBK-217F)		
	Vibration		IEC60068-2-6 (10 [~] 500Hz, 2G 10min./1cycle, 60min. each along X, Y axes)				
	Shock		IEC60068-2-27				
	Dimensions (L x W x H)		5.03 x 3.0 x 1.38	Inches (127.8 x 76	.2 x 35.0 mm) Tol	erance 0.5 mm	
Physical	Weight		480 g	,	1		
,	Cooling Method		Free convection / 30 CFM FAN				
				C / EN 60601 3.1rd Ed	tition & LIL / IFC	EN 60950 AMC	
Safety	Approval			C / EN 60601 3.1 rd E		211 007 00 AM2	
00.01/	Conducted and Radiated EMI			ucted class B, Radio			
EMC	EMS		EN60601-1-2 4th				

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

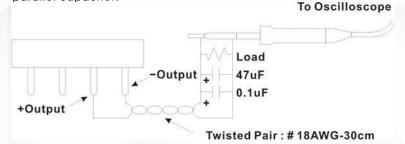




ELECTRICAL SPECIFICATION - HDM5000 SERIES

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.



A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected to AC ground.

- 2. Hold-up Time measured at 90% Vout.
- 3. Please check the derating curve for more details.
- Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2^{-13.3V}
- 5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Digital Power power supply.
- 6. Current Share Board (Optional):
 - (a.)The output voltage difference of each parallel single element should be less than 0.2V.
 - (b.)Output power at parallel operation = rated power per unit x number of unit x 90%

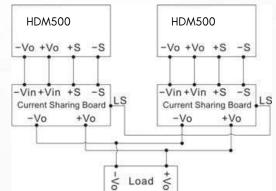
(c.)Connect in parallel no more than 2 units.

Please contact Digital Power for advice if more than 2 is needed.

(d.)Minimum Load Should be 15%.

7. CAUTION: Double pole, neutral fusing.

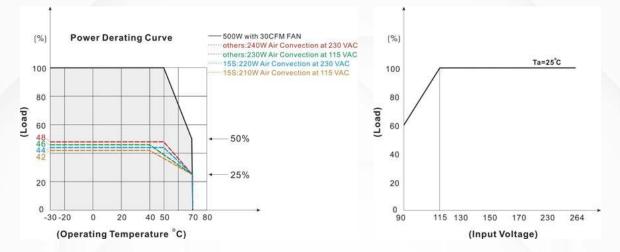
Disconnect mains before servicing.



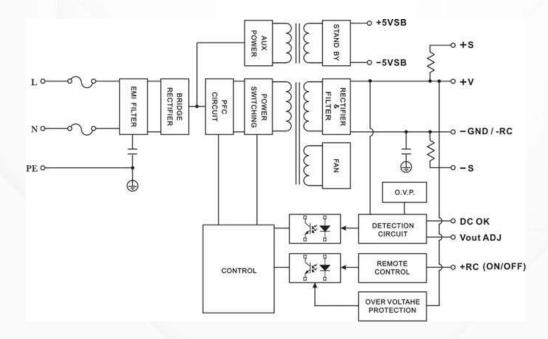


ELECTRICAL SPECIFICATION - HDM5000 SERIES

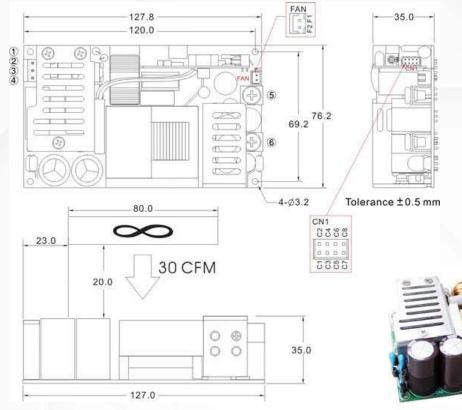
DERATING



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MECHANICAL DIMENSIONS- HDM5000 SERIES



Bro	ands	Al	ex	JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
1	PE	1	_	-	_	
2	AC IN (N)					
3	NO PIN	9396-3	96T series	VHR-3N	SVH-41T- P1.1	
4	AC IN (L)				F 1.1	
5	+DC OUT	Terminal : M5 Pan HD screw in 2 positions.				
6	-DC OUT	Torque to 8	Torque to 8 lbs-in(90cNm) max			

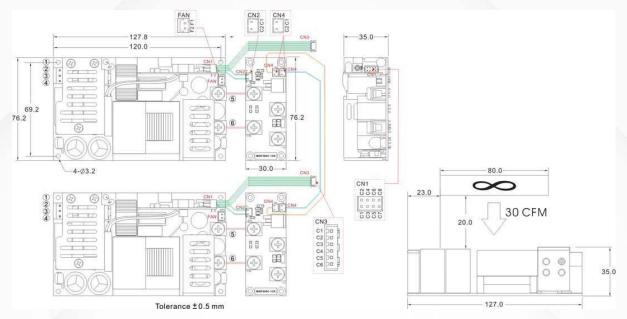
Connector Pin (FAN)						
Brands		Alex		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
F1	+12V	CX-			SXH- 002T-	
F2	GND	H250-02	CX-T2501	XHP-2	P0.6	

Connector Pin (CN1)						
E	Brands	Cherng Weei		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
C1	-5V SB					
C2	+5V SB					
C3	GND				1.1.1	
C4	DC-OK	PHD-H20-	PHD-T20	PHDR-	SPHD-	
C5	-RC	2X4P		08VS	001T- P0.5	
C6	+RC			1		
C7	-S					
C8	+S					

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MECHANICAL DIMENSIONS- HDM5000 SERIES

HDM5000 with Current Share Function



Bro	Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
1	PE	I	I			
2	AC IN (N)					
3	NO PIN	9396-3	96T series	VHR-3N	SVH-41T- P1.1	
4	AC IN (L)				1 1.1	
5	+DC OUT	Terminal : M5 Pan HD screw in 2 positions.				
6	-DC OUT	Torque to 8 lbs-in(90cNm) max				

Connector Pin (FAN)						
Bra	Brands		Alex		ST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
F1	+12V	CX-			SXH- 002T-	
F2	GND	H250-02	CX-T2501	XHP-2	P0.6	

Connector Pin (CN1)						
Brands		Cherng Weei		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
C1	-5V SB					
C2	+5V SB					
C3	GND					
C4	DC-OK	PHD-H20-	PHD-T20	PHDR-	SPHD-	
C5	-RC	2X4P		08VS	001T- P0.5	
C6	+RC					
C7	-S					
C8	+S					

Connecto	or Pin (CN2)				
Brands Cherng Weei			JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	-S				
C2	+S	CP- H20-02	CP- T20B	PHR-2	SPH- 002T- P0.5L



MECHANICAL DIMENSIONS- HDM5000 SERIES

Mating Ho	Mating Housing Pin (CN3)						
	Brands	Cherng Weei	JST				
PIN#	Single	Connector	Connector				
C1	-5V SB						
C2	+5V SB						
C3	GND						
C4	DC-OK	CP-W20-06	B6B-PH-K-S				
C5	-RC						
C6	+RC						

Connector Pin (CN4)						
ands	Cherng Weei		JST			
Single	Mating Housing	Terminal	Mating Housing	Terminal		
LS	CP- H20-02	CP- T20B	PHR-2	SPH-		
LS				002T- P0.5L		
	Single	Single Mating Housing LS CP- H20-02	Cherng Weei Single Mating Housing Terminal LS CP- H20-02 CP- T20B	Cherng Weei		

FUNCTION DESCRIPITON of CN1 and CN3 (CN3 without C7 and C8 pin)

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Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin
		C1(-5VSB). The maximum load current is 1A with Fan, 0.4A
		without Fan
C3	GND	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK Signal is a DC output, referenced to pin C3(DC-OK GND).
C5	-RC	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C5 (-RC), Short: Power OFF, Open: Power
		ON. The input voltage must be less than 1V in order to disable VOUT and greater than 3.3V (up to 5V) to enable
		it.
C7	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should
		be twisted in pair to minimize noise pick-up effect.
C8	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be
		twisted in pair to minimize noise pick-up effect.

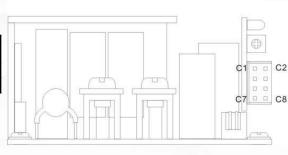


MECHANICAL DIMENSIONS- HDM5000 SERIES

FUNCTION MANUAL & APPLICATION NOTE

1. DC-OK Signal

Between DC-OK and GND	Output Status
3.7~6∨	ON
0~1V	OFF

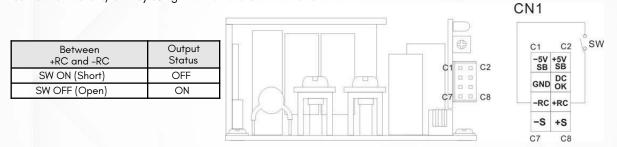


CN1 C1 C2 -5V +5V SB SB GND DC -RC +RC -S +S C7 C8

HDM500 Series

2. Remote Control

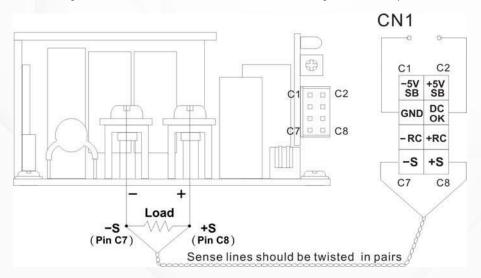
It can be turned ON/OFF by using the "Remote Control" function.



3. +S and -S Sense

-

Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown below



ELECTRICAL SPECIFICATION - HDM500U SERIES

Model No.			HDM500U-112	HDM500U-115	HDM500U- 124	HDM500U- 148	
Max Output V	Wattage (W)		500 W (30CFM F	AN)		-	
			Others: 190 W (11	5 VAC) / 200 W ((230 VAC)		
Max Output V	Wattage (W)		115: 170 W	(115 VAC) / 180 W ((230 VAC)		
	Voltage (Note 3)		90-264 VAC or				
Input	Frequency (Hz)	47-63 Hz					
	Current (Full load)			VAC) / <3.15 A m	nax. (230 VAC)		
	Inrush Current (<2ms) (Clod Sta	art)		VAC) / < 80 A mo			
	Leakage Current	1	< 0.1 mA max. (Ir				
	Power Factor (at 230 VAC)	1	PF>0.94 at Full L				
	Voltage (V.DC.)		12V	15V	24V	48V	
	Voltage Accuracy		±2%				
	Voltage Adj. Range (V.DC)		±4% Output Vol	taae			
	Current (with 30CFM FAN) (A) r	max	41.5	33.3	20.8	10.41	
	Current (Free air Convection)	at 115 VAC	15.83	11.33	7.91	3.96	
	(A) max	at 230 VAC	16.6	12	8.33	4.17	
	Line Regulation (115–264 VAC)		±0.5%			_	
Output	Load Regulation (10–100%) (typ.)	±1%				
Culpui	Minimum Load	1	3%				
	Maximum Capacitive Load		5,000μF	3,750μF	2,500µF	1,250µF	
	Ripple & Noise (typ.)		160mV	160mV	240mV	480mV	
	Efficiency (at 230 VAC)	90.5%	90.5%	92%	93%		
	Hold-up Time (at 115 VAC)		8 ms min.				
	Over Power Protection	Auto recovery					
	Over Voltage Protection	Auto recovery					
	Overt Temperature Protection		Auto recovery				
Protection			Protection level 1 (nominal) : Continuous, Auto recovery				
	Short Circuit Protection		Protection level 2 (instantaneous high current) : Latch				
	Input-Output (V.AC)		4000VAC or 5656VDC				
Isolation	Input-PE (V.AC)		2000V				
	Output-PE (V.AC)		1500∨				
	Operating Temperature		-30°C+70°C (with derating)				
	Storage Temperature		-35°C+85°C ±0.03%/°C(0~50°C)				
	Temperature Coefficient		±0.03%/°C(0 50°C) ±0.06%/°C(-30~0°C)				
	Altitude During Operation						
	Humidity		5000m 95% RH				
Environment							
	MTBF		56 kPa to 106 kPa >160,000 h @ 25°C (MIL-HDBK-217F)				
	Vibration		IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y,				
			IEC60068-2-6 (10 500Hz, 2G 10min./ Icycle, 60min. each along X, Y, axes)				
	Shock	IEC60068-2-27					
	Dimension s(L x W x H)		5.5 x 3.25 x 1.6 lr	nches (139.7 x 82.	.55 x 40.6 mm) T	olerance 0.5 mm	
Physical	Weight		580 g	·			
,	Cooling Method		Free convection	/ 30 CFM FAN			
			Others: UL / IEC	/ EN 60601 3.1rd E	dition & UL / IEC	C / EN 60950 AM2	
Safety	Approval			/ EN 60601 3.1rd E			
	Conducted and Radiated EMI			cted class B, Radi			
EMC	EMS		EN60601-1-2 4th	edition			

All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

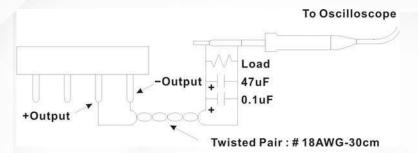




ELECTRICAL SPECIFICATION - HDM500U SERIES

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.



A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected to AC ground.

- 2. Hold-up Time measured at 90% Vout.
- 3. Please check the derating curve for more details.
- Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2[~]13.3V
- 5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Digital Power power supply.
- 6. Current Share Board (Optional):

(a.)The output voltage difference of each parallel single element should be less than 0.2V.

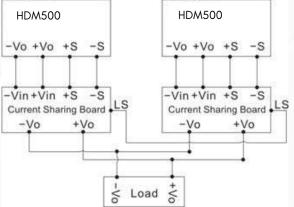
(b.)Output power at parallel operation = rated power per unit x number of unit x 90%

(c.)Connect in parallel no more than 2 units. Please contact Digital Power for advice if more

than 2 is needed.

(d.)Minimum Load Should be 15%.

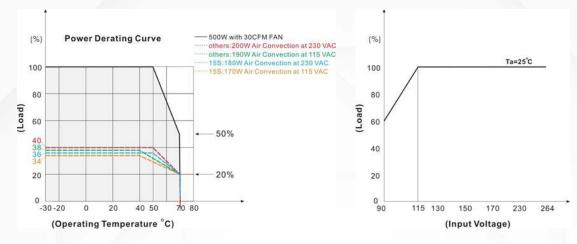
7. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.



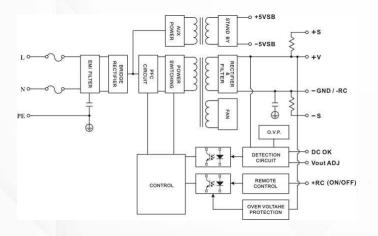


ELECTRICAL SPECIFICATION - HDM500U SERIES

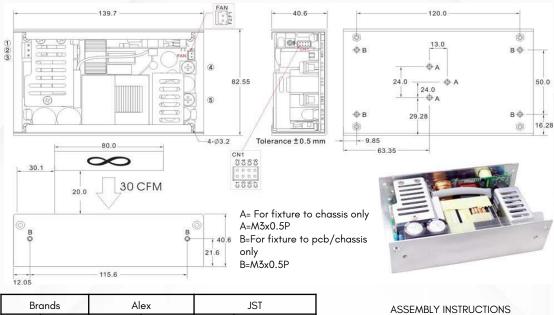
DERATING



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MECHANICAL DIMENSIONS – HDM500U SERIES



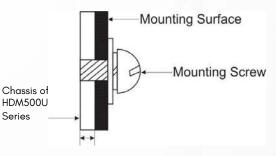
Br	ands	Al	Alex		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal		
A.B	PE			1	—		
1	AC IN (N)			VHR-3N			
2	NO PIN	9396-3	96T series		SVH-41T-P1.1		
3	AC IN (L)						
4	+DC OUT	Terminal : M5 Pan HD screw in 2 positions.					
5	-DC OUT	Torque to 8	erminal : M5 Pan HD screw in 2 positions. orque to 8 lbs-in(90cNm) max				

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Conn	Connector Pin (CN1)										
Brands		Cherng	, Cherng Weei		ST						
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal						
C1	-5V SB			PHDR- 08VS	SPHD- 001T- P0.5						
C2	+5V SB										
C3	GND										
C4	DC-OK	PHD-H20-	PHD-T20								
C5	-RC	2X4P									
C6	+RC										
C7	-S										
C8	+S										

ASSEMBLY INSTRUCTIONS U Case T=1.5mm Customer is advised to screw into the threads no more than 1.5mm

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T=1.5mm

Connector Pin (FAN)										
Brands		Alex		JST						
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal					
F1	+12V	CX-			SXH- 002T-					
F2	GND	CX- H250-02	CX-T2501	XHP-2	P0.6					



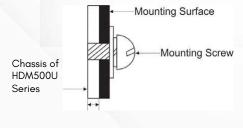
MECHANICAL DIMENSIONS- HDM500U SERIES

CN2 FAN CN4 139 40.6 120.0 ٢ Ó 04:::) 123 13.0 2 фв 100 вф CH ID ΦA **1** 1 88 24.0 50.0 a. 1 1 24.0 82.55 76.2 - (D A ΦВ вф 29.28 A DY 16.28 ... ٢ 0 30.0 4-03.2 - 9.85 Ē. 63.35 CN1 22222 22222 22222 22222 80.08 123] 節 CH ID CN3 C1 D0 C2 D0 C3 D0 C4 D0 C5 D0 C6 D0 30.1 -P 1 1 30 CFM 88 20.0 ÷ 1 1 E BQ B 1 40.6 Tolerance ±0.5 mm 21.6 115.6 12 05

HDM500U with Current Share Function

A= For fixture to chassis only A=M3x0.5P B=For fixture to pcb/chassis only B=M3x0.5P

ASSEMBLY INSTRUCTIONS U Case T=1.5mm Customer is advised to screw into the threads no more than 1.5mm



T=1.5mm

1

Br	ands	Al	ex	JST					
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal				
A.B	PE	-	-	_	_				
1	AC IN (N)		9396-3 96T series						
2	NO PIN	9396-3		VHR-3N	SVH-41T-P1.1				
3	AC IN (L)								
4	+DC OUT	Terminal : M5 Pan HD screw in 2 positions.							
5	-DC OUT	Torque to 8 lbs-in(90cNm) max							

Connector Pin (FAN)										
Brands		Alex		JST						
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal					
Fl	+12V				SXH-002T-					
F2	GND	CX- H250- 02	CX- T2501	XHP-2	P0.6					

MECHANICAL DIMENSIONS- HDM500U SERIES

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Conn	ector Pin (CN1)				Mating	Housing Pin (C	CN3)	
E	Brands	Cherng	g Weei	J	ST	В	rands	Cherng Weei	JST
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	PIN#	Single	Connector	Connector
C1	-5V SB	Ŭ		•		C1	-5V SB		
C2	+5V SB				1	C2	+5V SB		
C3	GND					C3	GND	CP-W20-06	B6B-PH-K-S
C4	DC-OK	PHD-H20-	PHD-T20	PHDR-	SPHD-	0.1	50.0%	CF-W20-00	DOD-FIT-K-S
C5	-RC	2X4P		08VS	001T- P0.5	C4	DC-OK		
C6	+RC]				C5	-RC		
C7	-S						+RC		
C8	+S					C6	+RC		

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HDM500 Series

Connecto	Connector Pin (CN2)										
Brands		Che	erng Weei	JS	ST						
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal						
C1	-S										
C2	+S	CP- H20-02	CP- T20B	PHR-2	SPH- 002T- P0.5L						

Connector Pin (CN4)										
Brands		Cherne	g Weei	JST						
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal					
C1	LS				SPH-					
C2	LS	CP- H20-02	CP- T20B	PHR-2	002T- P0.5L					

FUNCTION DESCRIPITON of CN1 and CN3 (CN3 without C7 and C8 pin)

Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin C1(- 5VSB). The maximum load current is 1A with Fan, 0.4A without Fan
C3	GND	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C4	DC OK	DC-OK Signal is a DC output, referenced to pin C3(DC-OK GND).
C5	-RC	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C6	+RC	Turns the output on and off by electrical or dry contact between pin C5 (-RC), Short: Power OFF, Open: Power ON. The input voltage must be less than IV in order to disable VOUT and greater than 3.3V (up to 5V) to enable it.
C7	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect.
C8	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect.

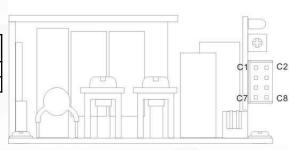


MECHANICAL DIMENSIONS- HDM500U SERIES

FUNCTION MANUAL & APPLICATION NOTE

1. DC-OK Signal

5	Between	Output
1	DC-OK and GND	Status
	3.7 [~] 6V	ON
	0~1V	OFF



CN1 C1 C2 -5V +5V SB SB GND DC -RC +RC -S +S C7 C8

SW

C2

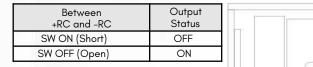
+S

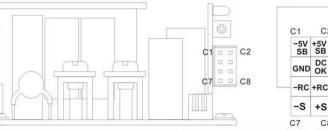
C8

CN1

2. Remote Control

It can be turned ON/OFF by using the "Remote Control" function.

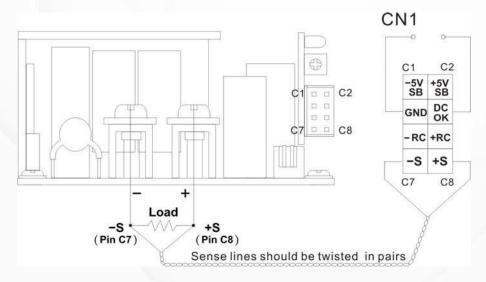




3. +S and -S Sense

-

Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown below





ELECTRICAL SPECIFICATION - HDM500E SERIES

Model No.		HDM500E-112	HDM500E-1	15 HDM500E-124	HDM500E-148			
Max Output Wo	attage (W)	500 W						
	Voltage (Note 3)	90-264 VAC or 1	27-370 VDC					
	Frequency (Hz)	47-63 Hz						
	Current (Full load)	< 6.3 A max. (115 VAC) / <3.15 A max. (230 VAC)						
Input	Inrush Current (<2ms) (Clod Start)							
	Leakage Current	< 0.1 mA max. (Input-Output)						
	Power Factor (at 230 VAC)	PF>0.94 at Full L						
	Voltage (V.DC.)	12V	15V	24V	48V			
	Voltage Accuracy	±2%						
	Voltage Adj. Range (V.DC)	±4% Output Volt	aae					
	Current (A) (max.)	41.5	33.3	20.8	10.41			
	Line Regulation (115-264 VAC)	±0.5%						
	Load Regulation (10–100%) (typ.)	±1%						
Output	Minimum Load	3%						
	Maximum Capacitive Load	5,000µF	3,750µF	2,500µF	1,250μF			
	Ripple & Noise (typ.)	160mV	160mV	240mV	480mV			
	Efficiency (at 230 VAC)	89%	89%	91%	92%			
	Hold-up Time (at 115 VAC)	8 ms min.						
	Over Power Protection	Auto recovery						
	Over Voltage Protection	Auto recovery						
	Overt Temperature Protection	Auto recovery						
Protection		Protection level	(nominal) : Co	ontinuous, Auto recov	erv			
	Short Circuit Protection	Protection level 2 (instantaneous high current) : Latch						
100	Input-Output (V.AC)	4000VAC or 565						
Isolation	Input-PE (V.AC)	2000V						
	Output-PE (V.AC)	1500V						
	Operating Temperature	-30°C+70°C (w	vith deratina)					
	Storage Temperature	-35°C+85°C						
		±0.03%/°C(0~	50°C)					
	Temperature Coefficient	±0.06%/°C(-30)~0°C)					
	Altitude During Operation	5000m						
	Humidity	95% RH						
Environment	Atmospheric Pressure	56 kPa to 106 kPa	a					
	MTBF	>160,000 h e 25°	°C (MIL-HDBK-2	17F)				
	Vibration	IEC60068-2-6 (1	0~500Hz, 2G 10)min./1cycle, 60min.	each along X, Y, Z axes)			
	Shock	IEC60068-2-27						
	Dimensions (L x W x H)	5.5 x 3.25 x 2.42	2 Inches (139.7	x 82.55 x 61.4 mm) T	olerance 0.5 mm			
Physical	Weight	690 g						
		Others: LIL / JEC	/ EN 60601.3 1	d Edition & UL / IEC	/ FN 60950 AM2			
Safety	Approval		C / EN 60601 3.1					
	Conducted and Radiated EMI	EN55011 / condu	1					
EMC	EMS	EN60601-1-2 4th	1					

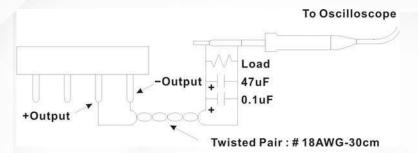
All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.



ELECTRICAL SPECIFICATION - HDM500E SERIES

NOTE

1. Ripple & Noise are measured at 20MHz of bandwidth with ceramic 0.1uF & chemi-con KY 47uF parallel capacitor.



A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected to AC ground.

- 2. Hold-up Time measured at 90% Vout.
- 3. Please check the derating curve for more details.
- Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2[~]13.3V
- 5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with AC Voltage, please disconnect all Y-Capacitors from Digital Power power supply.
- 6. Current Share Board (Optional):

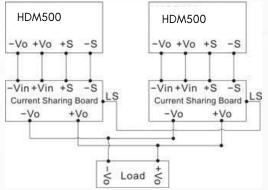
(a.)The output voltage difference of each parallel single element should be less than 0.2V.

(b.)Output power at parallel operation = rated power per unit x number of unit x 90%

(c.)Connect in parallel no more than 2 units. Please contact Digital Power for advice if more than 2 is needed.

(d.)Minimum Load Should be 15%.

7. CAUTION: Double pole, neutral fusing. Disconnect mains before servicing.

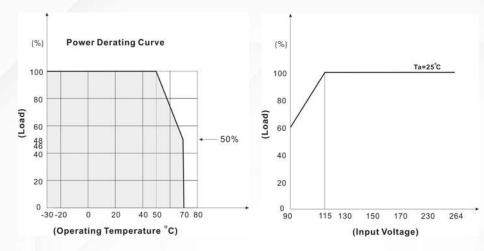




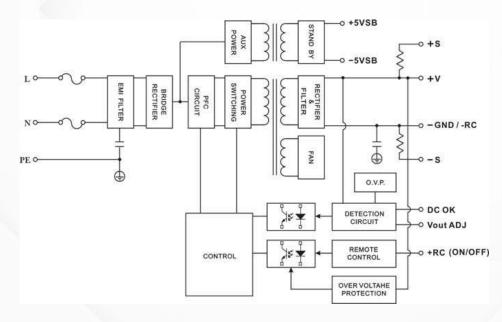
ELECTRICAL SPECIFICATION - HDM500E SERIES

DERATING

Digital Power Flexible Power Solutions



BLOCK DIAGRAM



C6

C7

C8

+RC

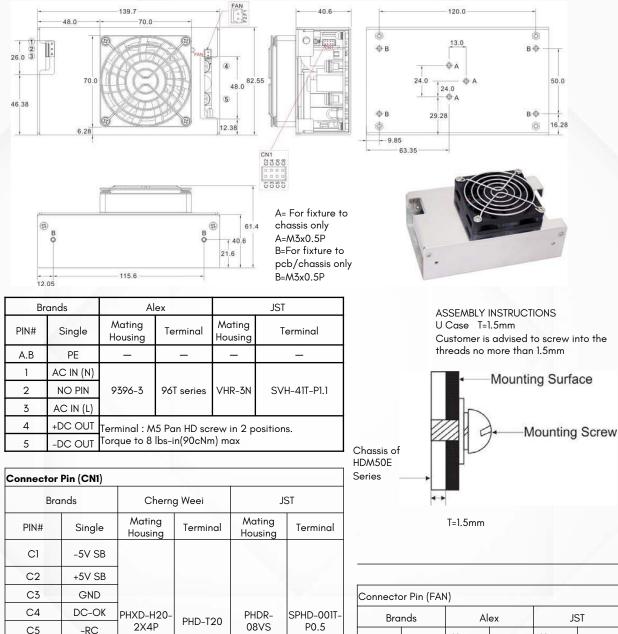
-S

+S

0

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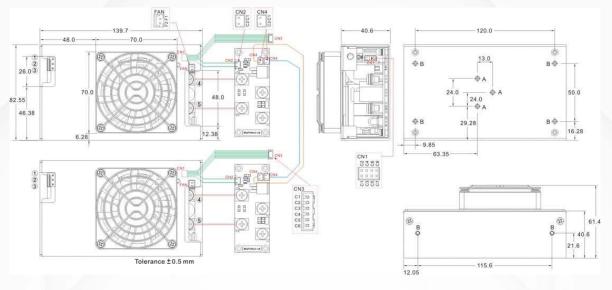
MECHANICAL DIMENSIONS - HDM500E SERIES



	1				
Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
Fl	+12V	CX-	CX-		SXH- 002T-
F2	GND	H250-02	T2501	XHP-2	P0.6

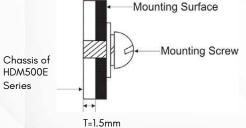
MECHANICAL DIMENSIONS- HDM500E SERIES

HDM500E with Current Share Function



A= For fixture to chassis only A=M3x0.5P B=For fixture to pcb/chassis only B=M3x0.5P

ASSEMBLY INSTRUCTIONS U Case T=1.5mm Customer is advised to screw into the threads no more than 1.5mm



	Brands		Al	Alex		JST		
	PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal		
	A.B	PE	_	_	_	_		
	1	AC IN (N)						
	2	NO PIN	9396-3	96T series	VHR-3N	SVH-41T-P1.1		
	3	AC IN (L)						
N	4	+DC OUT	Terminal : M	.5 Pan HD sci	rew in 2 p	ositions.		
	5			lbs-in(90cNn				

Connector Pin (FAN) Brands Cherng Weei JST Mating Mating PIN# Single Terminal Terminal Housing Housing SXH-+12V F1 CX-CX-XHP-2 002T-H250-02 T2501 F2 GND P0.6

HDM500 Series

MECHANICAL DIMENSIONS- HDM500E SERIES

Conn	ector Pin (CN1)				
6	Brands	Cherng Weei		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal	
C1	-5V SB					
C2	+5V SB					
C3	GND					
C4	DC-OK	PHD-H20-	PHD-T20	PHDR-	SPHD-	
C5	-RC	2X4P		08VS	001T- P0.5	
C6	+RC					
C7	-S					
C8	+S					

Mating Housing Pin (CN3)					
Bro	ands	Cherng Weei	JST		
PIN#	Single	Connector	Connector		
C1	-5V SB				
C2	+5V SB	CP-W20-06	B6B-PH-K-S		
C3	GND				
C4	DC-OK				
C5	-RC				
C6	+RC				

Connector	Connector Pin (CN2)						
Brar	nds	Cher	Cherng Weei		JST		
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal		
C1	-S						
C2	+S	CP- H20-02	CP- T20B	PHR-2	SPH- 002T- P0.5L		

Connector F	Connector Pin (CN4)						
Brands		Cherng Weei		JST			
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal		
C1	LS				SPH-		
C2	LS	CP- H20-02	CP-T20B	PHR-2	002T- P0.5L		

FUNCTION DESCRIPITON of CN1 and CN3 (CN3 without C7 and C8 pin)

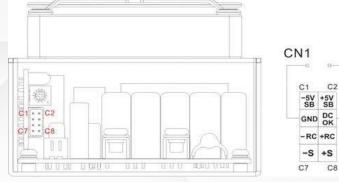
Pin No.	Function	Description	
C1	-5VSB This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.		
C2 +5VSB Stand by voltage output ground 4.2~5.5V, referenced to pin C1(- 5VSB). The maximum load current is 1A with Fan, 0.4A without Fan			
C3	GND	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.	
C4	DC OK	DC-OK Signal is a DC output, referenced to pin C3(DC-OK GND).	
C5	-RC This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.		
C6	+RC Turns the output on and off by electrical or dry contact between pin C5 (-RC), Short: Power OFF, Open: Po input voltage must be less than 1V in order to disable VOUT and greater than 3.3V (up to 5V) to enable it.		
C7	-S	Negative sensing. The -S signal should be connected to the negative terminal of the load. The -S and +S leads should be twisted in pair to minimize noise pick-up effect.	
C8	+S	Positive sensing. The +S signal should be connected to the positive terminal of the load. The +S and -S leads should be twisted in pair to minimize noise pick-up effect.	

MECHANICAL DIMENSIONS – HDM500E SERIES

FUNCTION MANUAL & APPLICATION NOTE

1. DC-OK Signal

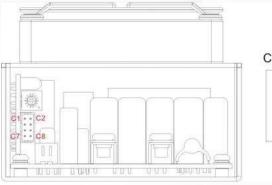
-	
Between	Output
DC-OK and GND	Status
3.7 [~] 6V	ON
0~1V	OFF

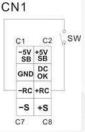


2. Remote Control

It can be turned ON/OFF by using the "Remote Control" function.

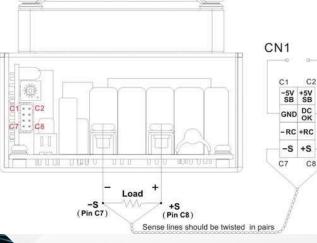
Output
Status
OFF
ON





3. +S and -S Sense Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown below





Digital Power Corporation

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Digital Power Corporation designs and manufactures full custom, value added and standard comprehensive power solutions for the most demanding applications in the defense, healthcare, telecom, and industrial markets.