Digital Power
Flexible Power Solutions
(877).634-0982
www.digipwr.com

HDM500 SERIES

AC-DC ITE AND MEDICAL SWITCHING PSU 500 WATT

CE cULus E199779 LEVEL3 cULus E308218 CB

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.

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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 - HDM500O SERIES

Model No.			HDM500O-112	HDM500O-115	HDM500O-124	HDM500O-148
Max Output Wattage (W)			500 W (30CFM FAN)			
Max Output Wattage (W)			Others: 230 W (115 VAC) / 240 W (230 VAC) 115: 210 W (115 VAC) / 220 W (230 VAC)			
Input	Voltage (Note 3)		90-264 VAC or 127-370 VDC			
	Frequency (Hz)		47-63 Hz			
	Current (Full load)		< 6.3 A max. (115 VAC) / <3.15 A max. (230 VAC)			
	Inrush Current (<2ms) (Clod Start)		< 40 A max. (115 VAC) / < 80 A max. (230 VAC)			
	Leakage Current		< 0.1 mA max. (Input-Output)			
	Power Factor (at 230 VAC)		PF>0.94 at Full Load			
Output	Voltage (V.DC.)		12V	15V	24V	48V
	Voltage Accuracy		±2%			
	Voltage Adj. Range (V.DC)		±4% Output Voltage			
	Current (with 30CFM FAN) (A) (max.)		41.5	33.3	20.8	10.41
	Current(Free air Convection) (A) max	at 115 VAC	19.16	14	9.58	4.8
		at 230 VAC	20	14.66	10	5
	Line Regulation (115-264 VAC)		±0.5%			
	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%
	Hold-up Time (at 115 VAC)		8 ms min.			
Protection	Over Power Protection		Auto recovery			
	Over Voltage Protection		Auto recovery			
	Overt Temperature Protection		Auto recovery			
	Short Circuit Protection		Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (V.AC)		4000VAC or 5656VDC			
	Input-PE (V.AC)		2000V			
	Output-PE (V.AC)		1500V			

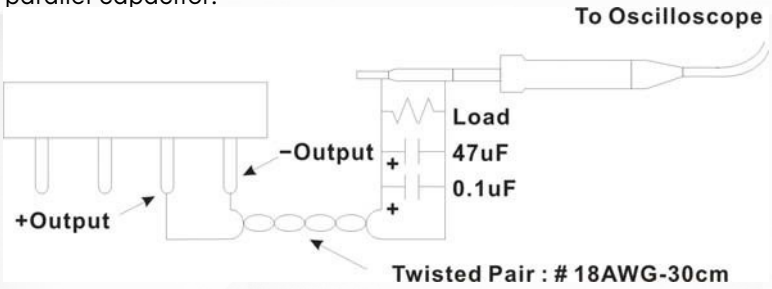
Environment	Operating Temperature	-30°C...+70°C (with derating)
	Storage Temperature	-35°C...+85°C
	Temperature Coefficient	±0.03%/°C (0~50°C) ±0.06%/°C (-30~0°C)
	Altitude During Operation	5000m
	Humidity	95% RH
	Atmospheric Pressure	56 kPa to 106 kPa
	MTBF	>160,000 h @ 25°C (MIL-HDBK-217F)
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)
	Shock	IEC60068-2-27
Physical	Dimensions (L x W x H)	5.03 x 3.0 x 1.38 Inches (127.8 x 76.2 x 35.0 mm) Tolerance 0.5 mm
	Weight	480 g
	Cooling Method	Free convection / 30 CFM FAN
Safety	Approval	Others: UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2 115: UL / IEC / EN 60601 3.1rd Edition
EMC	Conducted and Radiated EMI	EN55011 / conducted class B, Radiated Class A
	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 - HDM5000 SERIES

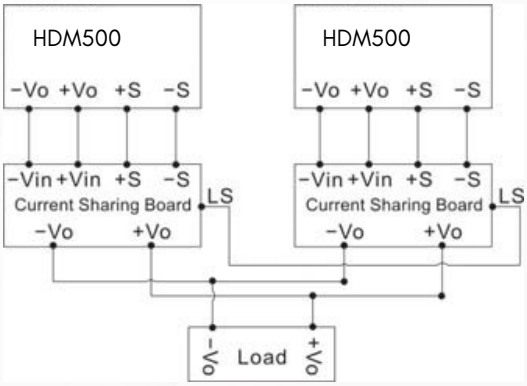
NOTE

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



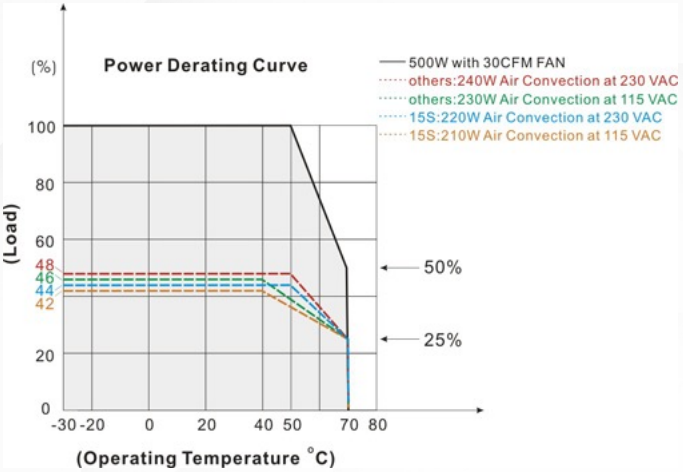
A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected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

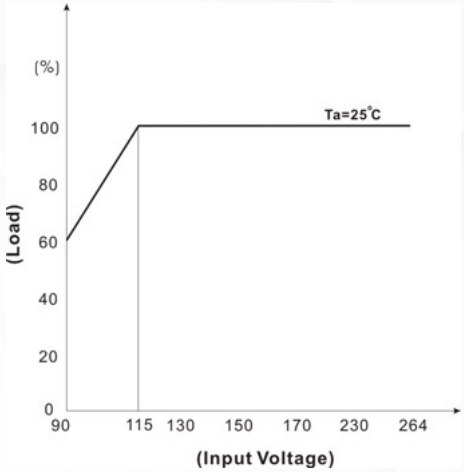
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with 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.



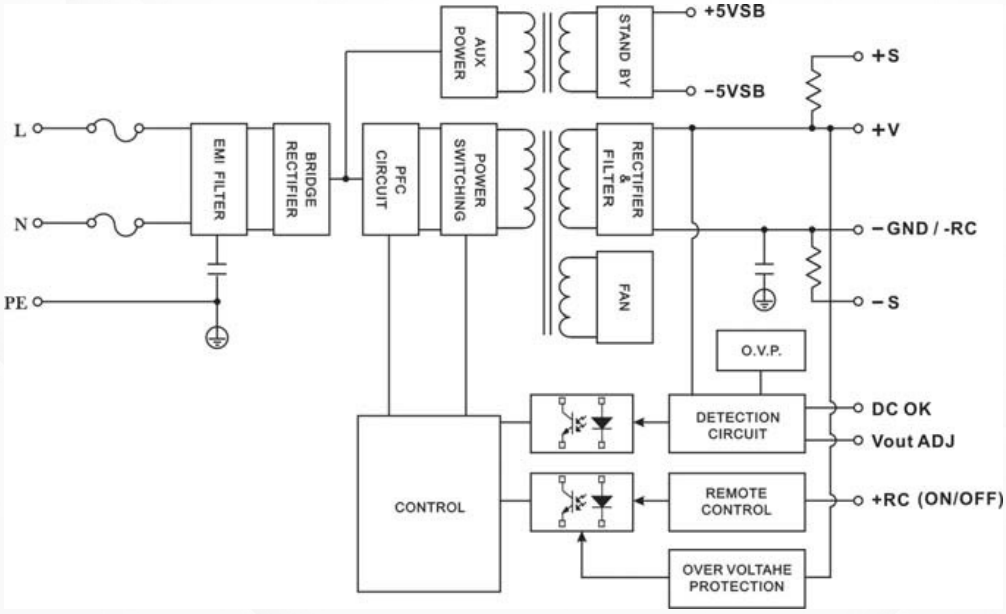
ELECTRICAL SPECIFICATION - HDM500O SERIES

DERATING

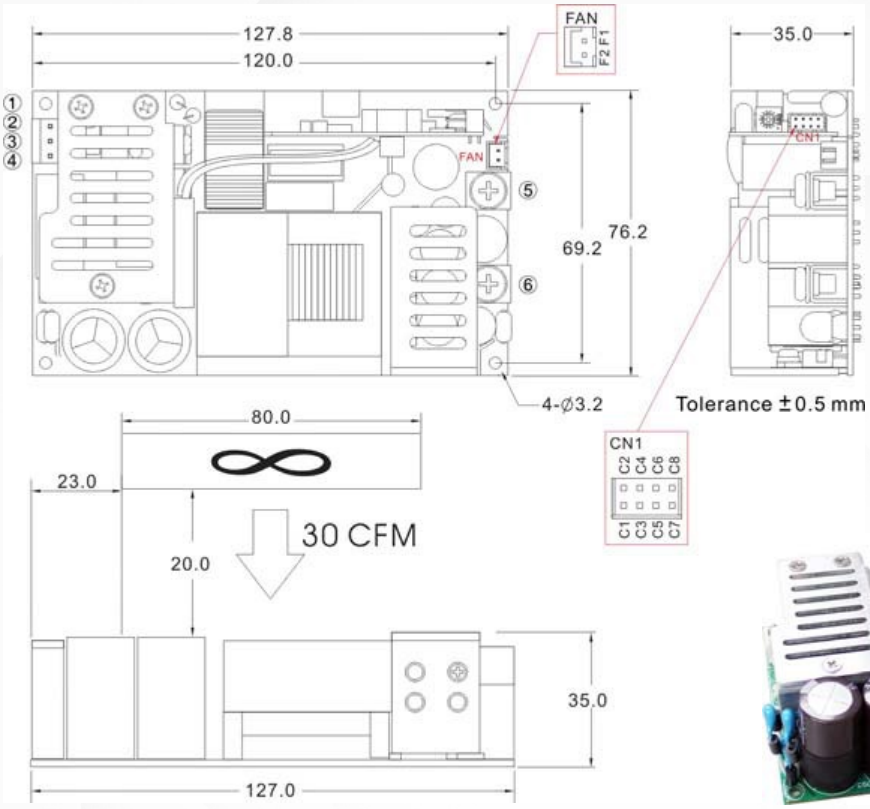




BLOCK DIAGRAM



MECHANICAL DIMENSIONS- HDM500O SERIES



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

Connector Pin (FAN)

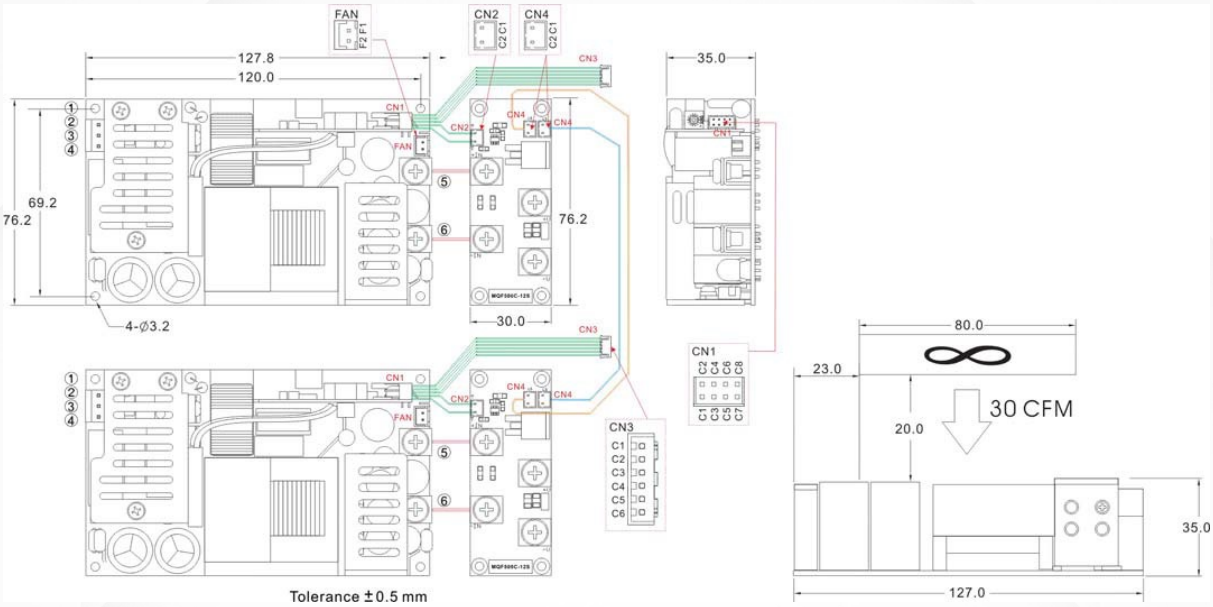
Brands		Alex		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
F1	+12V	CX-H250-02	CX-T2501	XHP-2	SXH-002T-P0.6
F2	GND				

Connector Pin (CN1)

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

MECHANICAL DIMENSIONS- HDM500O SERIES

HDM500O with Current Share Function



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

Connector Pin (FAN)

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

Connector Pin (CN1)

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

Connector Pin (CN2)

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

MECHANICAL DIMENSIONS– HDM500O SERIES

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

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

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

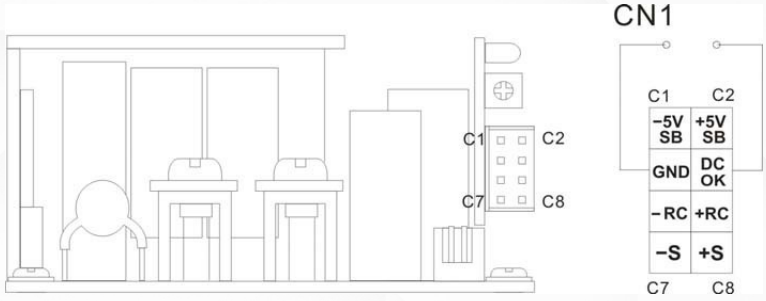
Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin C1(-5VSB). The maximum load current is 1A with Fan, 0.4A without Fan..
C3	GND	This pin connects to the negative 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 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- HDM500O SERIES

FUNCTION MANUAL & APPLICATION NOTE

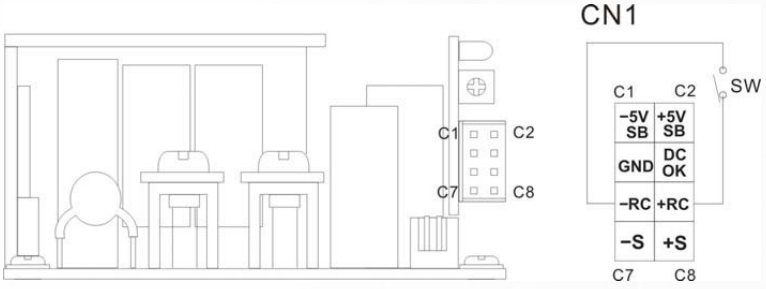
1. DC-OK Signal

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

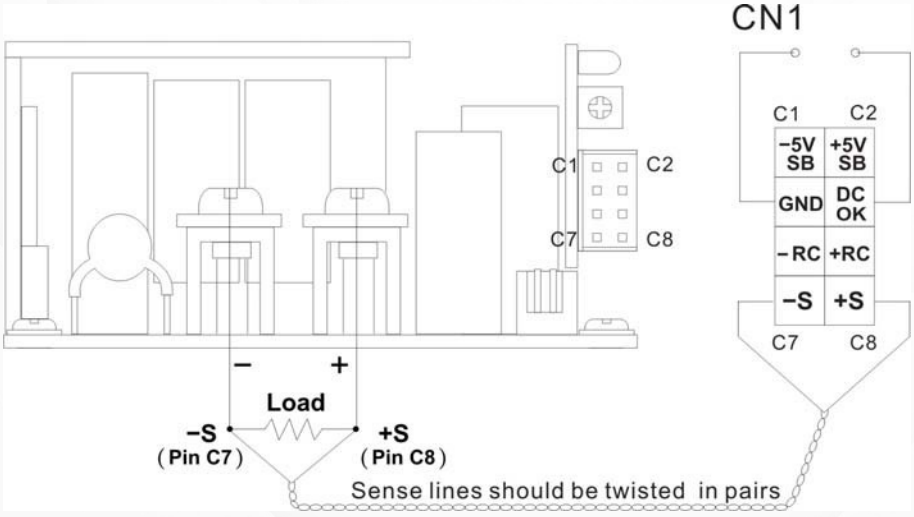


2. Remote Control
It can be turned ON/OFF by using the "Remote Control" function.

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	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



ELECTRICAL SPECIFICATION - HDM500U SERIES

Model No.			HDM500U-112	HDM500U-115	HDM500U-124	HDM500U-148
Max Output Wattage (W)			500 W (30CFM FAN)			
Max Output Wattage (W)			Others: 190 W (115 VAC) / 200 W (230 VAC) 115: 170 W (115 VAC) / 180 W (230 VAC)			
Input	Voltage (Note 3)		90-264 VAC or 127-370 VDC			
	Frequency (Hz)		47-63 Hz			
	Current (Full load)		< 6.3 A max. (115 VAC) / <3.15 A max. (230 VAC)			
	Inrush Current (<2ms) (Clod Start)		< 40 A max. (115 VAC) / < 80 A max. (230 VAC)			
	Leakage Current		< 0.1 mA max. (Input-Output)			
	Power Factor (at 230 VAC)		PF>0.94 at Full Load			
Output	Voltage (V.DC.)		12V	15V	24V	48V
	Voltage Accuracy		±2%			
	Voltage Adj. Range (V.DC)		±4% Output Voltage			
	Current (with 30CFM FAN) (A) max		41.5	33.3	20.8	10.41
	Current (Free air Convection) (A) max	at 115 VAC	15.83	11.33	7.91	3.96
		at 230 VAC	16.6	12	8.33	4.17
	Line Regulation (115-264 VAC)		±0.5%			
	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%
	Hold-up Time (at 115 VAC)		8 ms min.			
Protection	Over Power Protection		Auto recovery			
	Over Voltage Protection		Auto recovery			
	Overt Temperature Protection		Auto recovery			
	Short Circuit Protection		Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (V.AC)		4000VAC or 5656VDC			
	Input-PE (V.AC)		2000V			
	Output-PE (V.AC)		1500V			

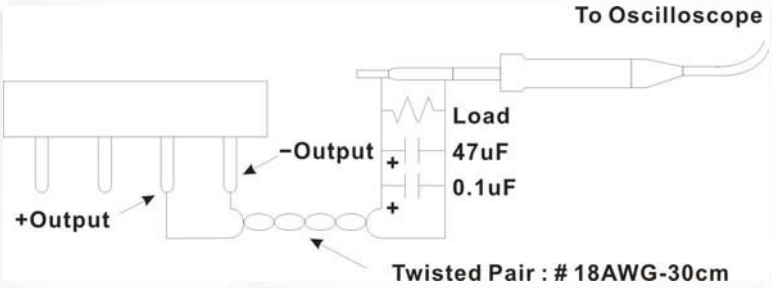
Environment	Operating Temperature	-30°C...+70°C (with derating)
	Storage Temperature	-35°C...+85°C
	Temperature Coefficient	±0.03%/°C (0~50°C) ±0.06%/°C (-30~0°C)
	Altitude During Operation	5000m
	Humidity	95% RH
	Atmospheric Pressure	56 kPa to 106 kPa
	MTBF	>160,000 h @ 25°C (MIL-HDBK-217F)
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)
	Shock	IEC60068-2-27
Physical	Dimension s(L x W x H)	5.5 x 3.25 x 1.6 Inches (139.7 x 82.55 x 40.6 mm) Tolerance 0.5 mm
	Weight	580 g
	Cooling Method	Free convection / 30 CFM FAN
Safety	Approval	Others: UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2 115: UL / IEC / EN 60601 3.1rd Edition
EMC	Conducted and Radiated EMI	EN55011 / conducted class B, Radiated Class A
	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

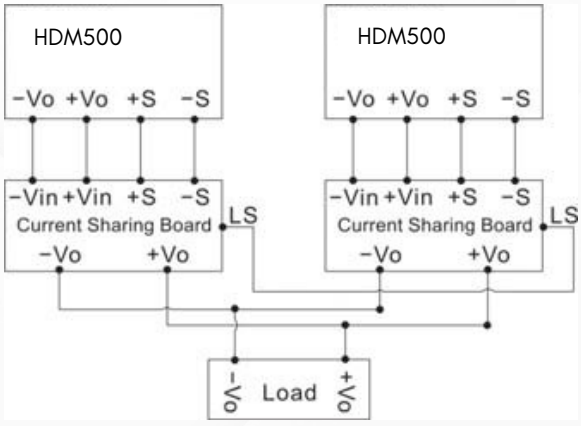
NOTE

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



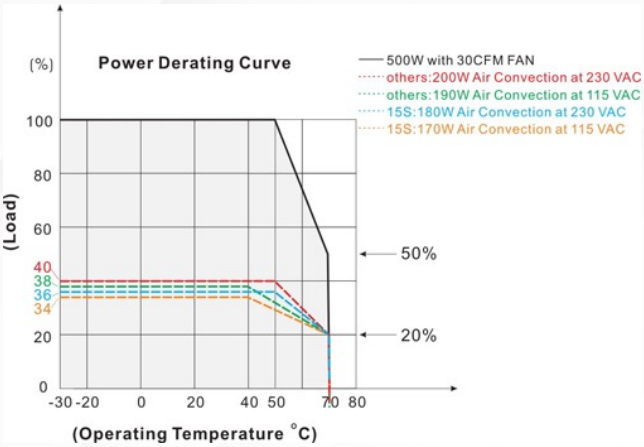
A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected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

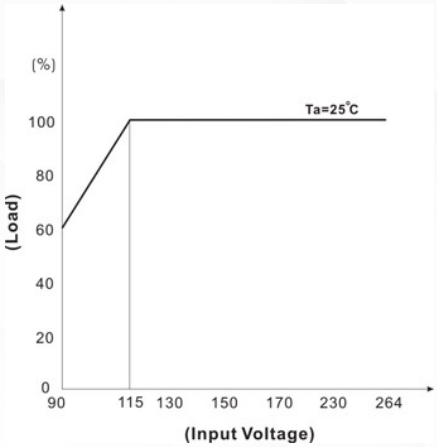
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with 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.



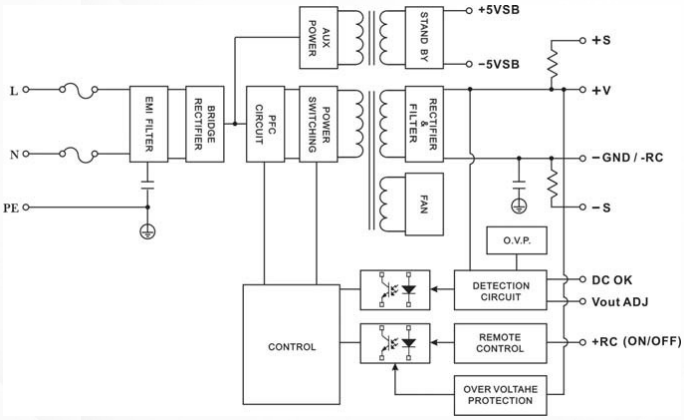
ELECTRICAL SPECIFICATION - HDM500U SERIES

DERATING

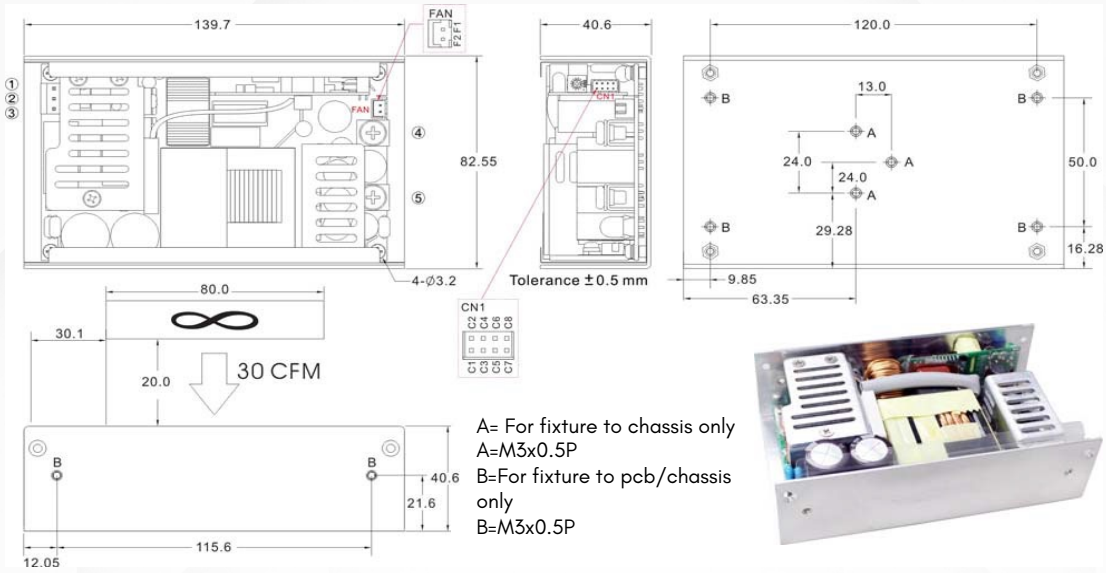




BLOCK DIAGRAM

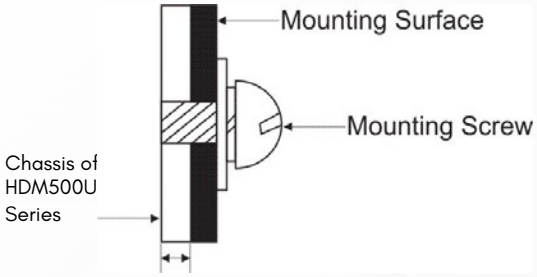


MECHANICAL DIMENSIONS – HDM500U SERIES



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

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



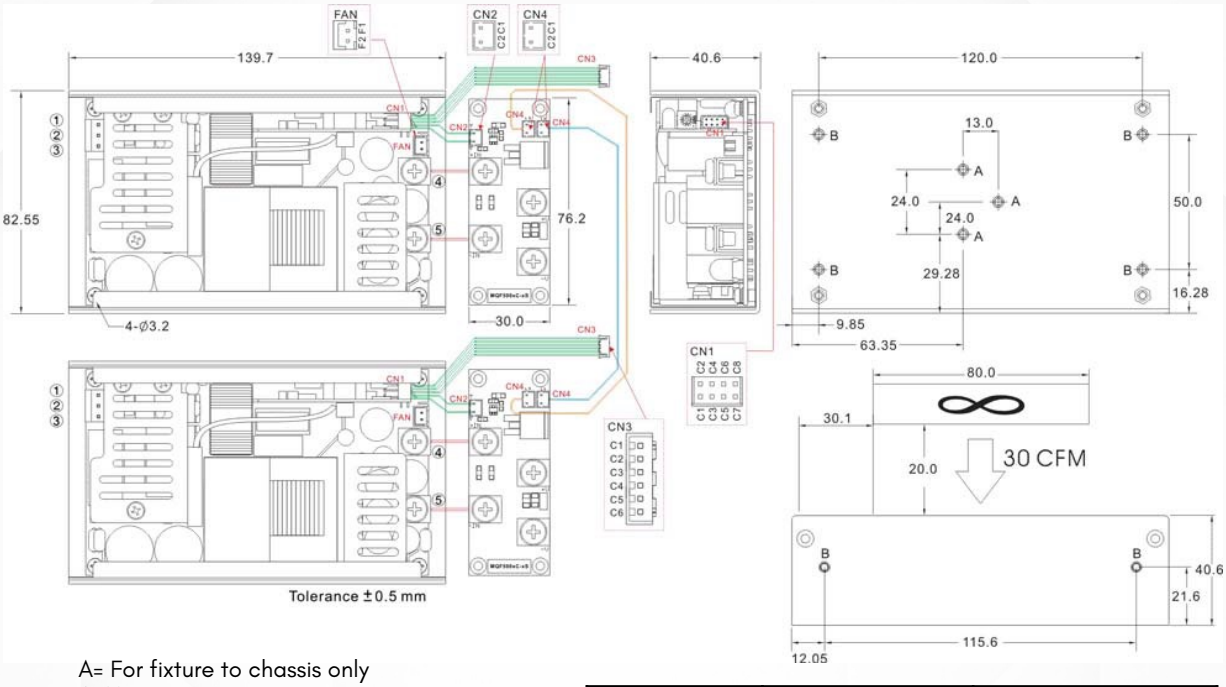
T=1.5mm

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

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

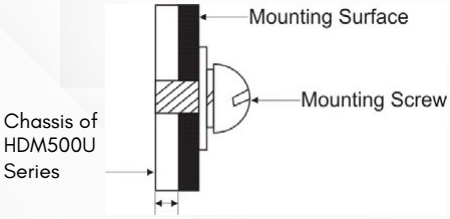
MECHANICAL DIMENSIONS- HDM500U SERIES

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



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

Connector Pin (FAN)

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

MECHANICAL DIMENSIONS- HDM500U SERIES

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

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

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

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

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

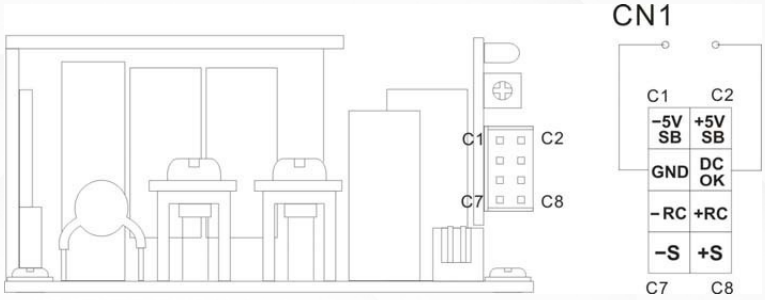
Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin C1(-5VSB). The maximum load current is 1A with Fan, 0.4A without Fan..
C3	GND	This pin connects to the negative 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 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– HDM500U SERIES

FUNCTION MANUAL & APPLICATION NOTE

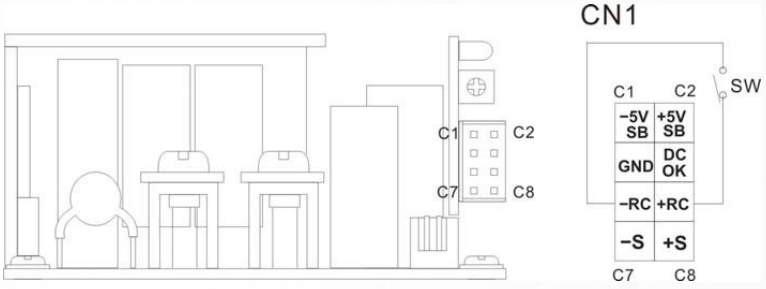
1. DC-OK Signal

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

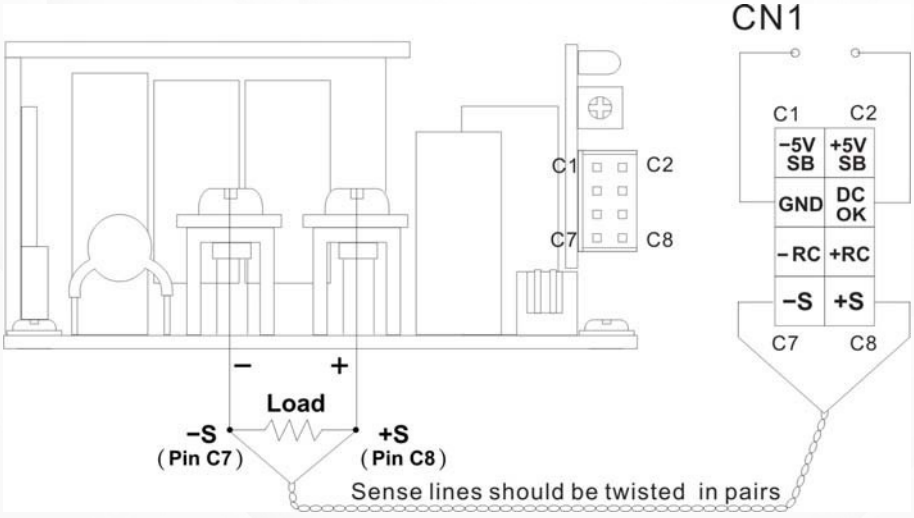


2. Remote Control
It can be turned ON/OFF by using the "Remote Control" function.

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	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



ELECTRICAL SPECIFICATION - HDM500E SERIES

Model No.		HDM500E-112	HDM500E-115	HDM500E-124	HDM500E-148
Max Output Wattage (W)		500 W			
Input	Voltage (Note 3)	90-264 VAC or 127-370 VDC			
	Frequency (Hz)	47-63 Hz			
	Current (Full load)	< 6.3 A max. (115 VAC) / <3.15 A max. (230 VAC)			
	Inrush Current (<2ms) (Clod Start)	< 40 A max. (115 VAC) / < 80 A max. (230 VAC)			
	Leakage Current	< 0.1 mA max. (Input-Output)			
	Power Factor (at 230 VAC)	PF>0.94 at Full Load			
Output	Voltage (V.DC.)	12V	15V	24V	48V
	Voltage Accuracy	±2%			
	Voltage Adj. Range (V.DC)	±4% Output Voltage			
	Current (A) (max.)	41.5	33.3	20.8	10.41
	Line Regulation (115-264 VAC)	±0.5%			
	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)	89%	89%	91%	92%
	Hold-up Time (at 115 VAC)	8 ms min.			
Protection	Over Power Protection	Auto recovery			
	Over Voltage Protection	Auto recovery			
	Overt Temperature Protection	Auto recovery			
	Short Circuit Protection	Protection level 1 (nominal) : Continuous, Auto recovery Protection level 2 (instantaneous high current) : Latch			
Isolation	Input-Output (V.AC)	4000VAC or 5656VDC			
	Input-PE (V.AC)	2000V			
	Output-PE (V.AC)	1500V			
Environment	Operating Temperature	-30°C...+70°C (with derating)			
	Storage Temperature	-35°C...+85°C			
	Temperature Coefficient	±0.03%/°C (0~50°C) ±0.06%/°C (-30~0°C)			
	Altitude During Operation	5000m			
	Humidity	95% RH			
	Atmospheric Pressure	56 kPa to 106 kPa			
	MTBF	>160,000 h @ 25°C (MIL-HDBK-217F)			
	Vibration	IEC60068-2-6 (10~500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes)			
	Shock	IEC60068-2-27			
Physical	Dimensions (L x W x H)	5.5 x 3.25 x 2.42 Inches (139.7 x 82.55 x 61.4 mm) Tolerance 0.5 mm			
	Weight	690 g			

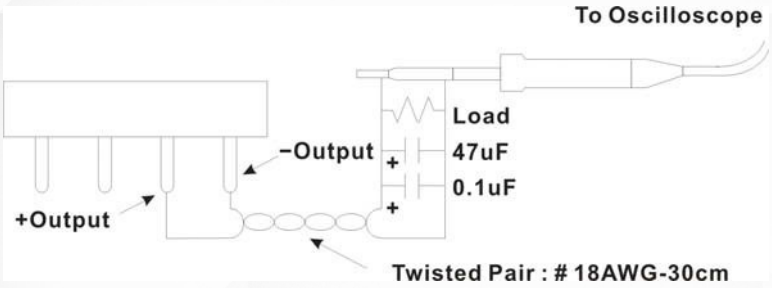
Safety	Approval	Others: UL / IEC / EN 60601 3.1rd Edition & UL / IEC / EN 60950 AM2 115: UL / IEC / EN 60601 3.1rd Edition
EMC	Conducted and Radiated EMI	EN55011 / conducted class B, Radiated Class A
	EMS	EN60601-1-2 4th edition

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

ELECTRICAL SPECIFICATION - HDM500E SERIES

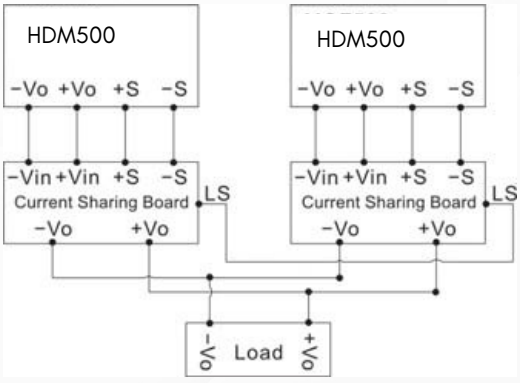
NOTE

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



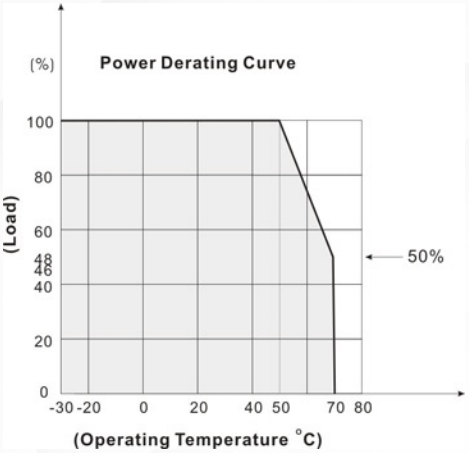
A 30cm twisted pair of no.18 AWG copper wire is connected to a 47uF and 0.1uF capacitor of proper polarity and voltage rating. The oscilloscope probe ground led should connect right to the ground ring of the probe and be as short as possible. The oscilloscope bandwidth should be at 20MHz and connected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

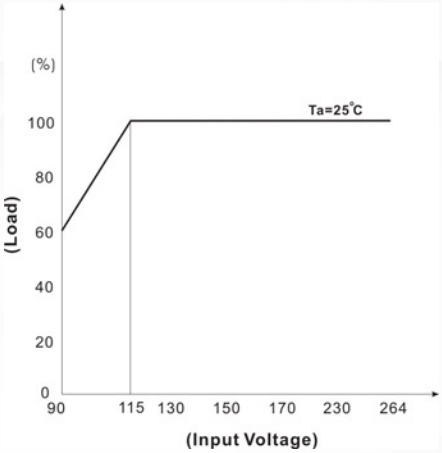
2. Hold-up Time measured at 90% Vout.
3. Please check the derating curve for more details.
4. Main Vout >3% Load, 12V (Aux) / 0.3A., 12V (Aux) need 0.1A Minimum Load, Auxiliary voltage output ground 10.2~13.3V
5. Strongly recommend to conduct this test with DC Voltage. If customer wishes to test with 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.



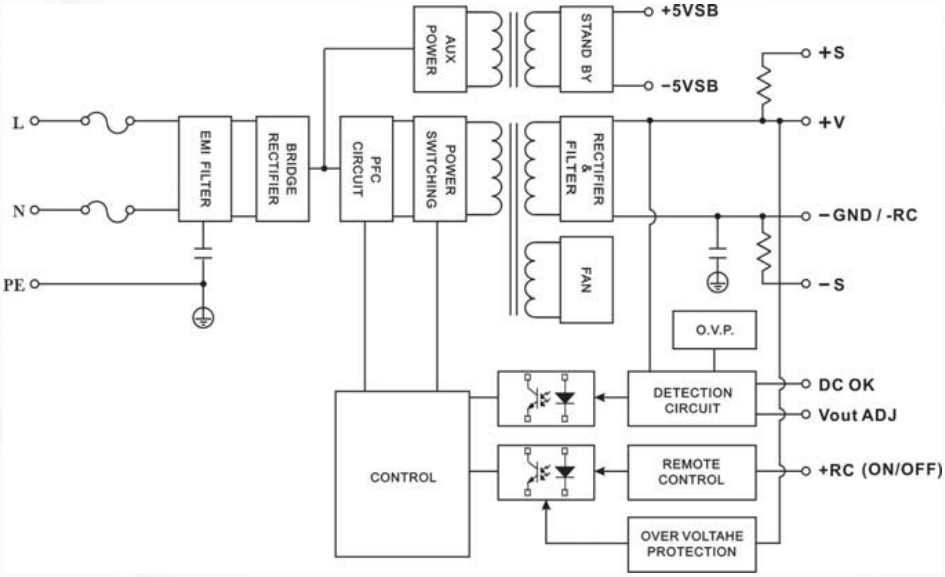
ELECTRICAL SPECIFICATION - HDM500E SERIES

DERATING

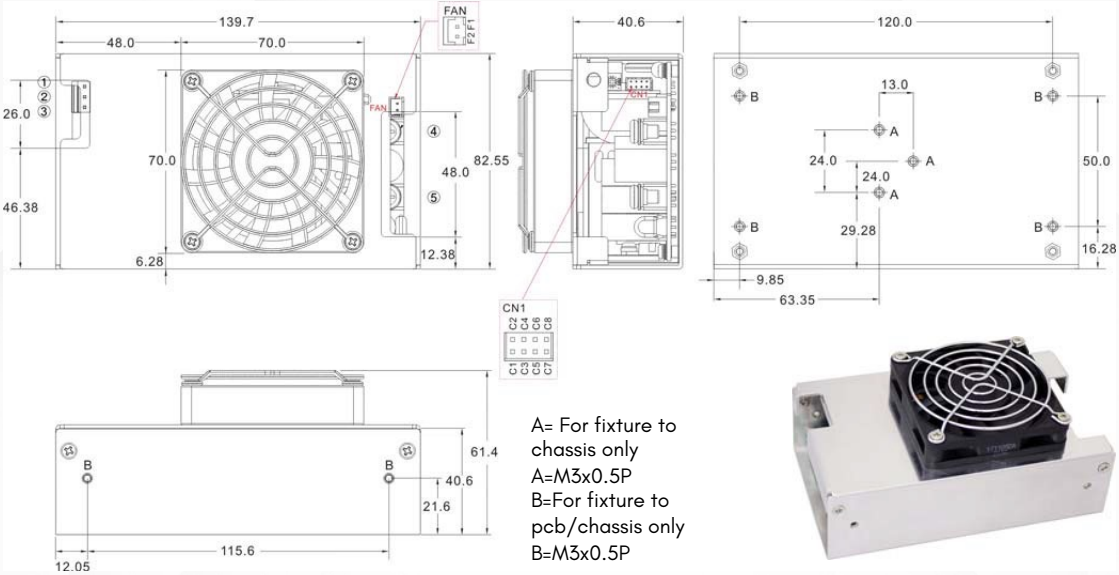




BLOCK DIAGRAM

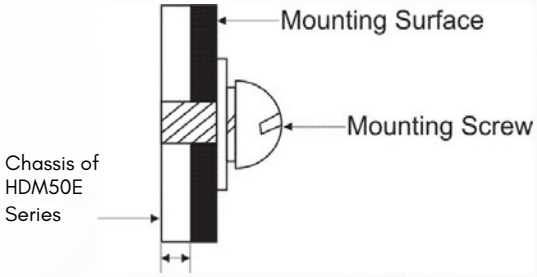


MECHANICAL DIMENSIONS – HDM500E SERIES



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

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

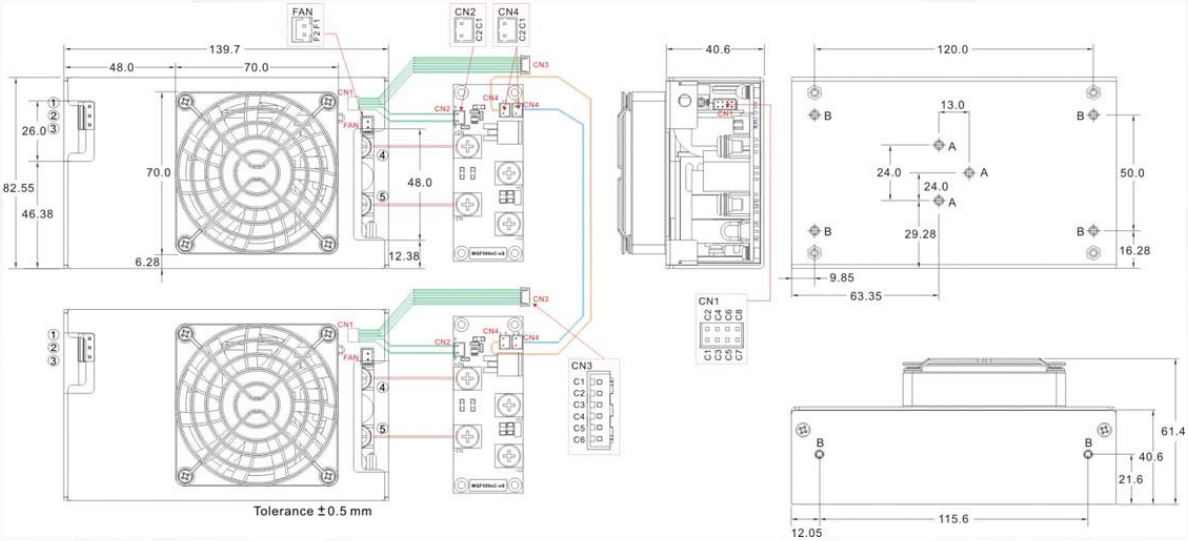


Connector Pin (CN1)					
Brands		Cherng Weei		JST	
PIN#	Single	Mating Housing	Terminal	Mating Housing	Terminal
C1	-5V SB	PHXD-H20-2X4P	PHD-T20	PHDR-08VS	SPHD-001T-P0.5
C2	+5V SB				
C3	GND				
C4	DC-OK				
C5	-RC				
C6	+RC				
C7	-S				
C8	+S				

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

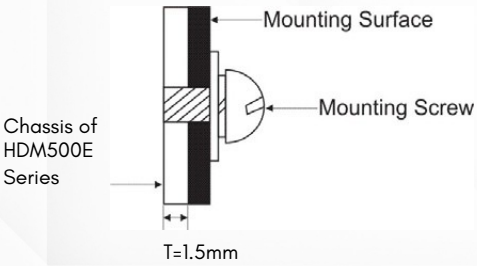
MECHANICAL DIMENSIONS- HDM500E SERIES

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

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

MECHANICAL DIMENSIONS– HDM500E SERIES

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

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

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

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

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

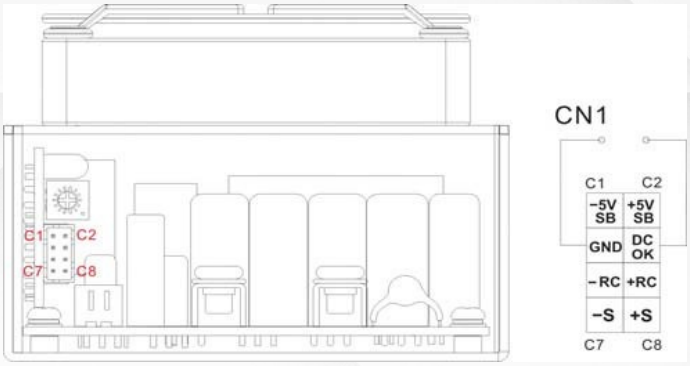
Pin No.	Function	Description
C1	-5VSB	This pin connects to the negative terminal(-V). Return for DC-OK and -RC signal output.
C2	+5VSB	Stand by voltage output ground 4.2~5.5V, referenced to pin C1(-5VSB). The maximum load current is 1A with Fan, 0.4A without Fan..
C3	GND	This pin connects to the negative 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 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

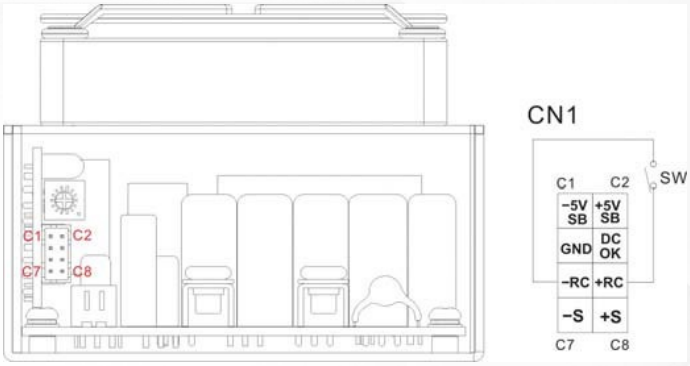
1. DC-OK Signal

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

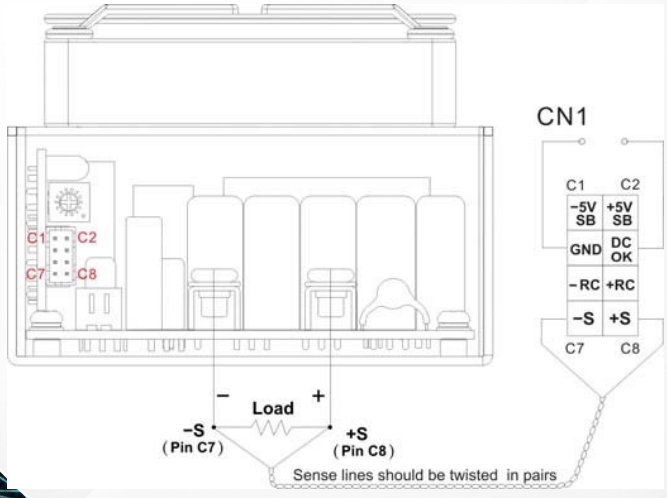


2. Remote Control
It can be turned ON/OFF by using the "Remote Control" function.

Between +RC and -RC	Output Status
SW ON (Short)	OFF
SW OFF (Open)	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



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