

2500W 1U Front End Power Supplies

Features

- ◆ 1U rackmount containing up to 4 units
- ◆ Internal ORing MOSFET & Current Share
- ◆ High Efficiency
- ◆ Up to 9,500W in 1U rack
- ◆ PMBus™(I²C) and LAN options



Key Market Segments & Applications



(HFE2500-48 model)

Specifications

Model		
Input Voltage Range (2)	VAC	85 - 265VAC, 47 - 63Hz. See model selector for power derating
Input Current (Max) 100/230VAC	A	15 / 12A
Inrush Current	A	<50A
Power Factor Correction	-	Meets EN61000-3-2, PF > 0.98 at full load
Temperature Coefficient	%/°C	<0.02%/°C
Overcurrent Protection	%	105 - 115%
Overvoltage Protection (1)	%	110% (Tracking). Cycle AC to reset or utilize Remote On/Off
Overtemperature Protection (1)	-	Shutdown with automatic reset. Warning signal provided
Hold-up time	ms	>10ms, 115/230VAC Input, 80% loading
Leakage Current	mA	< 0.75 / 1.5mA, 100 / 230VAC, 60Hz
Remote Sense Compensation	-	HFE2500-12: 0.25V / Wire, HFE2500-24: 0.5V / Wire, HFE2500-48: 1V / Wire
Indicators	-	AC OK: Green LED, DC OK / Fail: Green / Red LED
Remote On/Off	-	Unit ON: 0 - 0.6V or short, OFF: 2 - 15V or open circuit
Parallel Operation (1)	-	Yes, single wire current share, up to 95% accuracy (load dependant), up to 8 units
AC Fail Signal	-	Open Collector, ON when AC is within 85 - 270VAC
DC Good Signal	-	Open Collector, ON when output is above 85 to 95% of setpoint (tracking)
Remote Adjust (1)	-	By either external 0 - 5V signal or 1k potentiometer
I ² C Interface (1)	-	Isolated from output, Add suffix /S, PMBus compatible
Auxiliary Output	-	11.2 - 12.5V, 0.5A, 240mV ripple and noise
Operating Temperature	°C	-10 to +70°C, derate 2%/°C from 50 to 60°C, 2.5%/°C from 60 to 70°C
Storage Temperature	°C	-30 to +85°C
Humidity (Non condensing)	%RH	Operating: 10 - 90%RH, Storage: 10 - 95%RH
Cooling	-	Two variable speed internal fans, airflow exits across input/output connector (3)
Withstand Voltage	-	I/P to O/P 3kVAC, I/P to GND 2kVAC, O/P to GND: HFE2500-12, -24V 500VAC, HFE2500-48 2250 VDC 1min, (POE)
Isolation Resistance	MΩ	>100MΩ at 25°C & 70%RH, Output to Ground 500VDC
Vibration (Basic transportation)	-	Meets IEC60068-2-64
Shock (Basic transportation)	-	Meets IEC60068-2-27
Safety Agency Certifications	-	UL60950-1, EN60950-1, CE Mark
Conducted and Radiated EMI	-	EN55032 & FCC part 15; Conducted class B, Radiated class A
Immunity	-	IEC61000-4-2 (lv 2,3), -3 (lv 2), -4 (lv 2), -5 (lv 3,4), -6 (lv 4), -8 (lv 4), -11
Size (W x H x D)	in	Power Supply: 4.21 x 1.61 x 12.8", Rack: 17.5 x 1.72 x 15.8"
Weight	g	Power Supply: 2100g, Rack: 5000g
Warranty	yrs	Three Years

(1) See installation manual for detailed specifications & test methods

(2) Derate linearly 1.3%/V from 100VAC to 85VAC input

(3) Reverse air - contact factory

Model	Output Voltage	Adjust Range ⁽¹⁾	Max Current (Vin>180VAC)	Max Power (Vin>180VAC)	Max Current (100<Vin<132VAC) ⁽²⁾	Max Power (100<Vin<132VAC) ⁽²⁾
HFE2500-12	12V	9.6 - 13.2V	200A	2400W	125A	1500W
HFE2500-12/S	12V	9.6 - 13.2V	200A	2400W	125A	1500W
HFE2500-24	24V	19.2 - 29V	104A	2496W	62.5A	1500W
HFE2500-24/S	24V	19.2 - 29V	104A	2496W	62.5A	1500W
HFE2500-48	48V	38.4 - 58V	52A	2496W	31.25A	1500W
HFE2500-48/S	48V	38.4 - 58V	52A	2496W	31.25A	1500W

Model	Load Reg	Line Reg	Ripple & Noise ⁽¹⁾	Efficiency (%) ⁽⁴⁾	PMBus/ I²C
HFE2500-12	60mV	30mV	240mV	90 / 92%	-
HFE2500-12/S	60mV	30mV	240mV	90 / 92%	Yes
HFE2500-24	120mV	60mV	240mV	90 / 92%	-
HFE2500-24/S	120mV	60mV	240mV	90 / 92%	Yes
HFE2500-48	240mV	120mV	480mV	91 / 93%	-
HFE2500-48/S	240mV	120mV	480mV	91 / 93%	Yes

Accessories

Model	Description	Maximum Rack Current
HFE2500-S1U	Four slot 19" rack, IEC320-C20 input connector	320A each side (640A total)
HFE2500-S1U-TB	Four slot 19" rack, Terminal Block input connector	320A each side (640A total)
HFE2500/BP	One slot blanking panel, two provided with each rack	-
HFE2500-LAN	Plug in LAN module. Takes up one rack slot. For use with /S models only.	-

Technical drawing of the HFE510 rack, showing front, side, and top views with dimensions and labels.

Top View Dimensions:

- Overall Width: 273.6
- Module A Width: 214.5
- Module B Width: 61.0
- Module C Width: 107
- Module D Width: 24.6 TYP
- Module E Width: 14.0
- Module F Width: 125.8
- Module G Width: 14.0 TYP
- Module H Width: 16.0 TYP

Side View Dimensions:

- Overall Height: 426.5 ±1.0
- Module A Height: 20.0
- Module B Height: 11.0
- Module C Height: 24.5
- Module D Height: 11.0
- Module E Height: 1.0
- Module F Height: 445.0 ±1.0
- Module G Height: 483.0 ±1.0
- Module H Height: 466.2 ±1.0

Labels and Notes:

- M5 HOLES FOR MOUNTING BRACKETS. 4 PLACES. SEE NOTE 3.
- OUTPUT BUS BAR "+V"
- OUTPUT BUS BAR "+V"
- MODULE "A"
- MODULE "B"
- MODULE "C"
- MODULE "D"
- PMBUS ADDRESS SEE NOTE 4.
- MODEL KEY FOR DIFFERENT OUTPUT VOLTAGE MODELS
- HOLES FOR BLANK PANEL MOUNTING. USE FLAT HEAD SCREW. M3x5 6 PLACES MARKED "A"
- CONNECTION DESCRIPTION: IRL1120U-LQ-RA (SAMTEC) SIGNALS & CONTROL CONNECTOR (PINS ASSIGNMENT) MATING CONNECTOR: IRL1120U-LQ-RA (SAMTEC)
- AIR FLOW DIRECTION

Connector Pin Assignment Table:

1 -SENSE	11 TEMP_ALM_A	21 DQ_OK_A	31 NC
2 -LS	12 TEMP_ALM_B	22 DQ_OK_B	32 PS_EXIST_A
3 -SENSE	13 TEMP_ALM_C	23 DQ_OK_C	33 PS_EXIST_B
4 -LS	14 TEMP_ALM_D	24 DQ_OK_D	34 PS_EXIST_C
5 V_RPOG	15 NC	25 NC	35 PS_EXIST_D
6 TRIM	16 AC_FAIL_A	26 SIGNAL_RETURN	36 NC
7 -LPROG	17 AC_FAIL_B	27 INHIBIT_A	37 SIGNAL_RETURN
8 VSW_TRIM	18 AC_FAIL_C	28 INHIBIT_B	38 INHIBIT_C
9 V_REF	19 AC_FAIL_D	29 INHIBIT_C	39 ENABLE
10 SENSE	20 NC	30 INHIBIT_D	40 SIGNAL_RETURN

NOTES:

1. MOUNTING HOLES FOR RACK 19". USE M6x12 SCREWS TO FIX THE UNIT TO A RACK.
2. USE NUT FLAT WASHER AND SPRING WASHER FOR LOAD WIRES FIXING. USE LOG STUD M6 FOR LOAD WIRES. RECOMMENDED TORQUE: 4.5-5.5 kgf.cm.
3. TO FIX THE MOUNTING BRACKET TO THE CHASSIS USE M3x5 10 SENS SCREWS. RECOMMENDED TIGHTENING TORQUE 2.7-3.1 kgf.cm. SCREWS MUST NOT PENETRATE THE CHASSIS MORE THAN 6.0 mm.
4. REFER TO INSTRUCTION MANUAL FOR CONNECTION DETAIL.
5. MODEL NAME, VOLTAGE AND CURRENT RATING AND SAFETY APPROVALS SYMBOLS WILL BE SHOWN HERE ACCORDING TO THE SPECIFICATION.
6. THE HFE510 RACK IS SHOWN WITH 4 HFE2500 INHIBITERS LED.





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