

1600W 1U Front End Power Supplies

Features

- ◆ 1U rackmount containing up to 5 units
- ◆ Internal ORing MOSFET & Current Share
- ◆ High Efficiency
- ◆ Up to 7600W in 1U rack
- ◆ Full array of signals available



Key Market Segments & Applications



Specifications

Model		
Input Voltage Range (2)	VAC	85 - 265VAC, 47 - 63Hz. See model selector for power derating
Input Current (Max) 100/230VAC	A	14.2 / 8.1A
Inrush Current	A	<35A
Power Factor Correction	-	Meets EN61000-3-2, PF > 0.98 at full load
Temperature Coefficient	%/°C	<0.02%/°C
Overcurrent Protection	%	105 - 120%
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, 100/230VAC Input, 80% loading
Leakage Current	mA	< 0.75 / 1.5mA 100/230VAC, 60Hz
Remote Sense Compensation	-	HFE1600-12: 0.5V/wire, HFE1600-24, -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, 90% accuracy, up to 10 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 Temp. (-TB Rack)	°C	-10 to +70°C, derate 2%/°C from 50 to 60°C, 2.5%/°C from 60 to 70°C
Operating Temp. (-IEC320 Rack)	°C	-10 to +60°C, derate 2%/°C from 50 to 60°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
Withstand Voltage	-	I/P to O/P 3kVAC, I/P to GND 2kVAC, O/P to GND: HFE1600-12,-24V 500VAC, HFE1600-48 1.5kVAC
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 (Listed), EN60950-1, CE Mark
Line Dip	-	Complies with SEMI F47 (200VAC line only)
Conducted and Radiated EMI	-	EN55022 & FCC part 15; Conducted class B, Radiated class A
Immunity	-	IEC61000-4-2 (lv 2,3), -3 (lv 2), -4 (lv2), -5 (lv3,4), -6 (lv2), -8 (lv 4), -11
Size (W x H x D)	in	Power Supply: 3.35 x 1.61 x 11.8", Rack: 17.5 x 1.72 x 14.4"
Weight	g	Power Supply: 1550g, Rack: 4800g
Warranty	yrs	Three Years

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

(2) Derate output power linearly 1%/V from 100VAC to 85VAC input

Model	Output Voltage	Adjust Range ⁽¹⁾	Max Current (Vin>170VAC)	Max Power (Vin>170VAC)	Max Current (100<Vin<170VAC) ⁽²⁾	Max Power (100<Vin<170VAC) ⁽²⁾
HFE1600-12	12V	9.6 - 13.2V	133A	1596W	100A	1200W
HFE1600-12/S	12V	9.6 - 13.2V	133A	1596W	100A	1200W
HFE1600-24	24V	19.2 - 29V	67A	1608W	50A	1200W
HFE1600-24/S	24V	19.2 - 29V	67A	1608W	50A	1200W
HFE1600-48	48V	38.4 - 58V	33A	1584W	25A	1200W
HFE1600-48/S	48V	38.4 - 58V	33A	1584W	25A	1200W
Model	Load Reg	Line Reg	Ripple & Noise ⁽¹⁾	Efficiency (%) ⁽³⁾	I ² C	
HFE1600-12	60mV	30mV	240mV	87 / 90%	-	
HFE1600-12/S	60mV	30mV	240mV	87 / 90%	Yes	
HFE1600-24	120mV	60mV	240mV	88 / 90%	-	
HFE1600-24/S	120mV	60mV	240mV	88 / 90%	Yes	
HFE1600-48	240mV	120mV	480mV	89 / 92%	-	
HFE1600-48/S	240mV	120mV	480mV	89 / 92%	Yes	

Accessories		
Model	Description	Maximum Rack Current
HFE1600-S1U	Five slot 19" rack, IEC320-C16 input connectors (5)	200A each side (400A total)
HFE1600-S1U-TB	Five slot 19" rack, Terminal Block input connectors (5)	200A each side (400A total)
HFE1600/BP	One slot blanking panel, three provided with each rack	-
HFE/C15U	AC Power cord, 2.0m long, one per power supply required	

FRONT VIEW

211.6 ± 0.5

69.0 ± 0.2

211.0 ± 0.5

69.0 ± 0.2

SEE NOTE 2

POWER SUPPLY LOCKING

86.2 ± 0.5

REAR VIEW

12VDC

43.0

CIRCUIT CONNECTOR

SEE NOTE 1

320.4 ± 1.0

311.0 ± 1.0

300.0 ± 0.5

8.6

252.0 ± 0.5

43.0

227.0 ± 0.5

MOUNTING HOLES MA
MARKED "A"

MARKING: 12VDC 100A/1000W

1. INPUT HOLES FOR MOUNTING BRACKETS (SEE NOTE 1)

2. INPUT BUS BAR

3. OUTPUT BUS BAR

4. MODULE A

5. MODULE B

6. MODULE C

7. MODULE D

8. MODULE E

9. MODULE F

10. MODULE G

11. MODULE H

12. MODULE I

13. PANEL ADDRESS (SEE NOTE 2)

14. MODEL KEY FOR DIFFERENT OUTPUT VOLTAGE MODELS

15. HOLE FOR BLANK PANEL MOUNTING (USE FLAT-HEADED SCREW WITH UP LATCH MARKED "X")

16. 5-WIRE BACK BUS BAR IS SHOWN WITH 5 WIRE BOND UNITS INSTALLED

NOTES:

1. MOUNTING HOLES FOR BACK UP: USE M6x1 SCREWS TOP TO THE UNIT TO A BACK.
2. USE INSULATED WISHER AND SPRING WASHER FOR LOAD WIRES TIGHTEN: USE M6x1 TOP LOAD WIRE RECOMMENDED TORQUE: 40-50 INCHES.
3. TO THE RESULTANT BRACKET TO THE CHASSIS USE M6x1 SCREWS TORQUE: RECOMMENDED TIGHTENING TORQUE 22-33 INCHES.
4. REFER TO INSTRUCTION MANUAL FOR SETTING DETAILS.
5. MODEL NAME, VOLTAGE AND CURRENT RATING AND SAFETY APPROVALS IF APPLICABLE WILL BE SHOWN HERE ACCORDING TO THE TYPE CODE.
6. THE 5-WIRE BACK BUS BAR IS SHOWN WITH 5 WIRE BOND UNITS INSTALLED.

