

Технические характеристики на источники питания AC/DC серии HFE

По вопросам продаж и поддержки обращайтесь:

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HFE1600 Series

1600W 1U Hot Swap Front End
Power Supplies

- 25.2W/in³ power density
- Internal ORing MOSFET & Current Share
- Climate Savers Computing efficiency standards
- Up to 8000W in 1U rack
- Single and dual output 1U racks
- PMBus option



Key Market Segments & Applications

Power for Distributed Power Architecture
Industrial Automation

HFE1600 Features and Benefits

Features

- 1U high
- Internal ORing MOSFET & Current Share
- Status monitoring signals

Benefits

- Utilizes less system space
- Suitable for N+1 redundancy
- Easier system monitoring including PMBus

Specifications

ITEMS		MODELS	
Input Voltage Range	(2)	VAC	85 - 265VAC, 47 - 63Hz. See model selector for power derating
Input Current (Max) 100/230VAC		A	12.4 / 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 restart. 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: 0.25V/wire, HFE1600-24: 0.5V/wire, HFE1600-32: 0.75V/wire, HFE1600-48: 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		-	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°C to +70°C, derate 2%/°C from 50°C to 60°C, 2.5%/°C from 60°C to 70°C
Operating Temp. (-IEC320 Rack)		°C	-10°C to +60°C, derate 2%/°C from 50°C to 60°C
Storage Temperature		°C	-30°C 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 Ground 2kVAC, O/P to Ground: HFE1600-12, -24V 500VAC, HFE1600-48 1.5kVAC
Isolation Resistance		Ω	>100MΩ at 25°C & 70%RH, Output to Ground 500VDC
Vibration (Basic transportation)		-	Meets IEC61068-2-64
Shock (Basic transportation)		-	Meets IEC61068-2-27
Safety Agency Certifications		-	UL60950-1, 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)		mm	Power Supply: 85 x 41 x 300, Rack: 445 x 44 x 365
Weight		g	Power Supply: 1550g, Rack: 4800g
Warranty		yrs	3

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

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

Model Selector

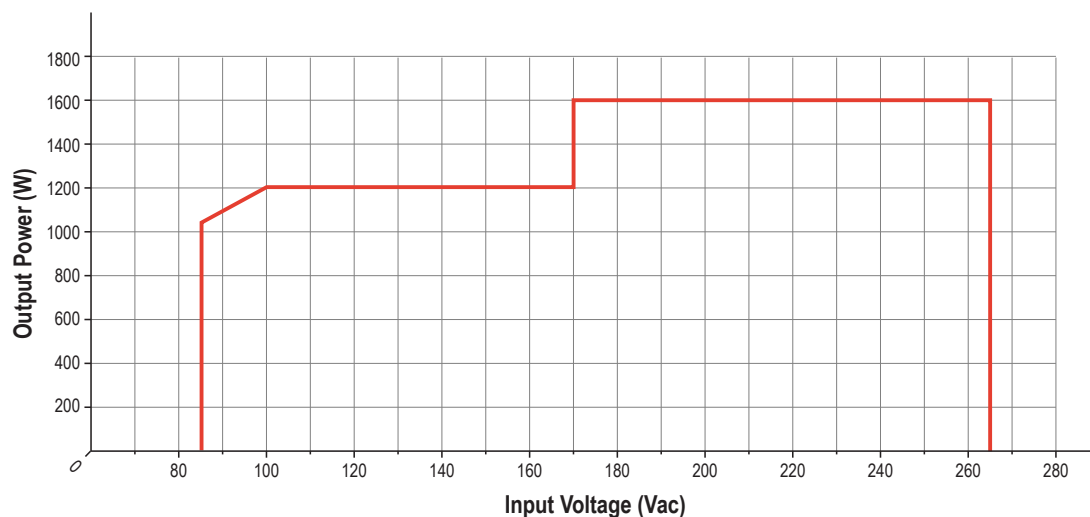
Model	Output Voltage	Adjust Range (1)	Max Current (Vin>170VAC)(2)	Max Power (Vin>170VAC)(2)	Max Current (100<Vin<170VAC)(2)	Max Power (100<Vin<170VAC)(2)
HFE1600-12	12V	9.6 - 13.2V	133A	1596W	100A	1200W
HFE1600-12/S	12V	9.6 - 13.2V	133A	1596W	100A	1200W
HFE1600-24	24V	19.2 - 29V	67A	1608W	50A	1200W
HFE1600-24/S	24V	19.2 - 29V	67A	1608W	50A	1200W
HFE1600-32	32V	25.6 - 38.4V	47A	1504W	37.5A	1200W
HFE1600-32/S	32V	25.6 - 38.4V	47A	1504W	37.5A	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	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
HFE1600-32	160mV	80mV	320mV	88 / 90%	-
HFE1600-32/S	160mV	80mV	320mV	88 / 90%	Yes
HFE1600-48	240mV	120mV	480mV	89 / 92%	-
HFE1600-48/S	240mV	120mV	480mV	89 / 92%	Yes

(3) At 75% load, 100 / 230VAC input

Rack Model Selector

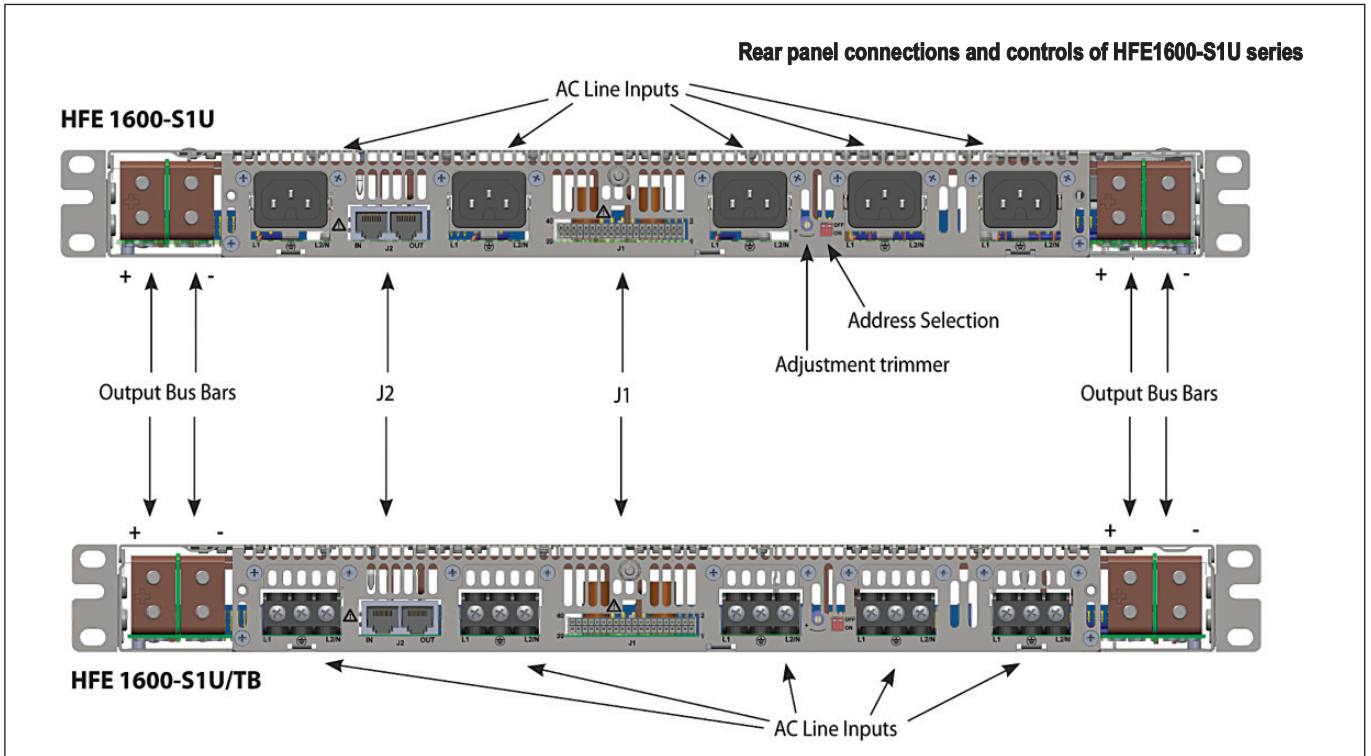
Model	Description	Maximum Rack Current
HFE1600-S1U	Five slot 19" rack, IEC320 input connectors (5)	266A per side (532A total)
HFE1600-S1U-TB	Five slot 19" rack, Terminal Block input connectors (5)	266A per side (532A total)
HFE1600/BP	One slot blanking panel, four provided with each rack	
HFE1600-D1U	Four slot (two isolated pairs), dual output 19" rack, IEC320 input connectors (4)	266A per side
HFE1600-D1U-TB	Four slot (two isolated pairs), dual output 19" rack, Terminal Block input connectors (4)	266A per side



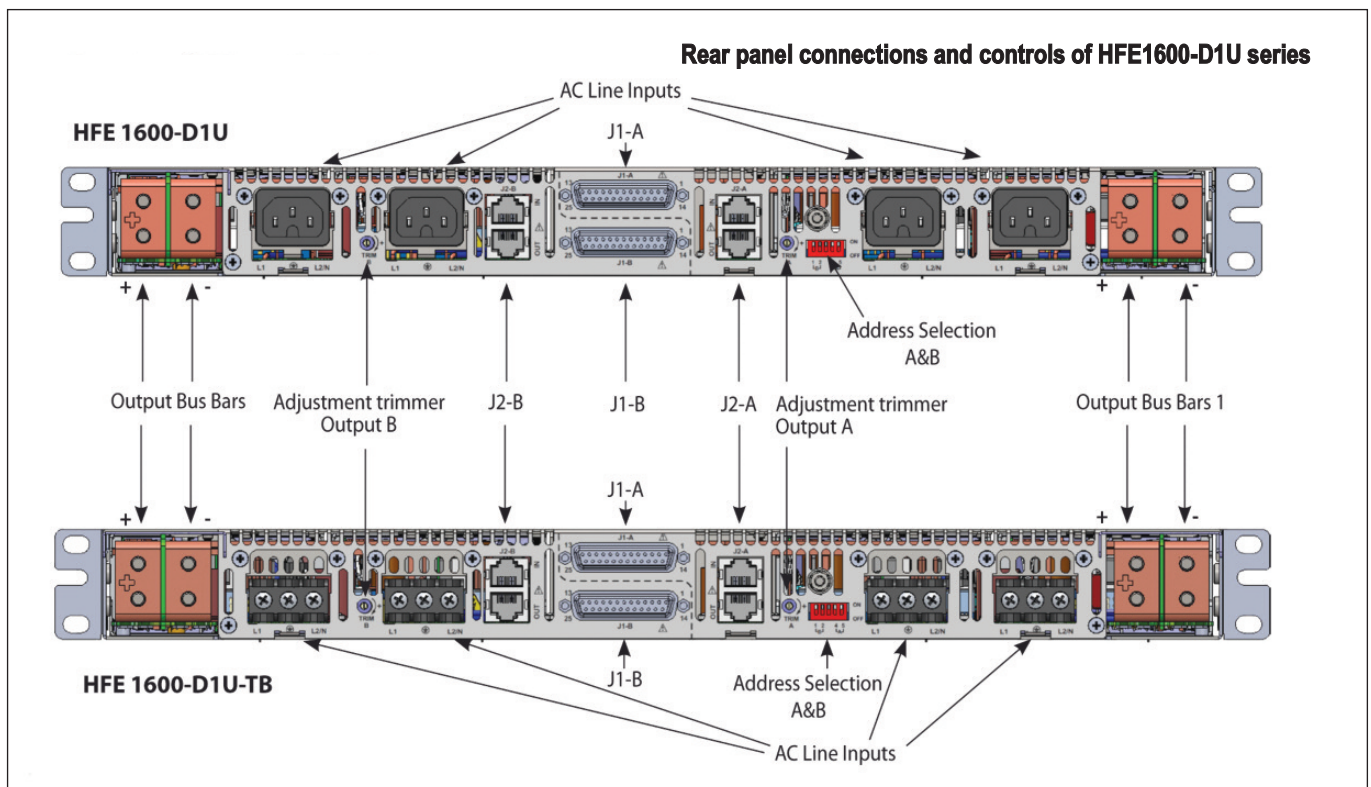
HFE 1600 Power Derating v's Input Voltage

Available Rack Types

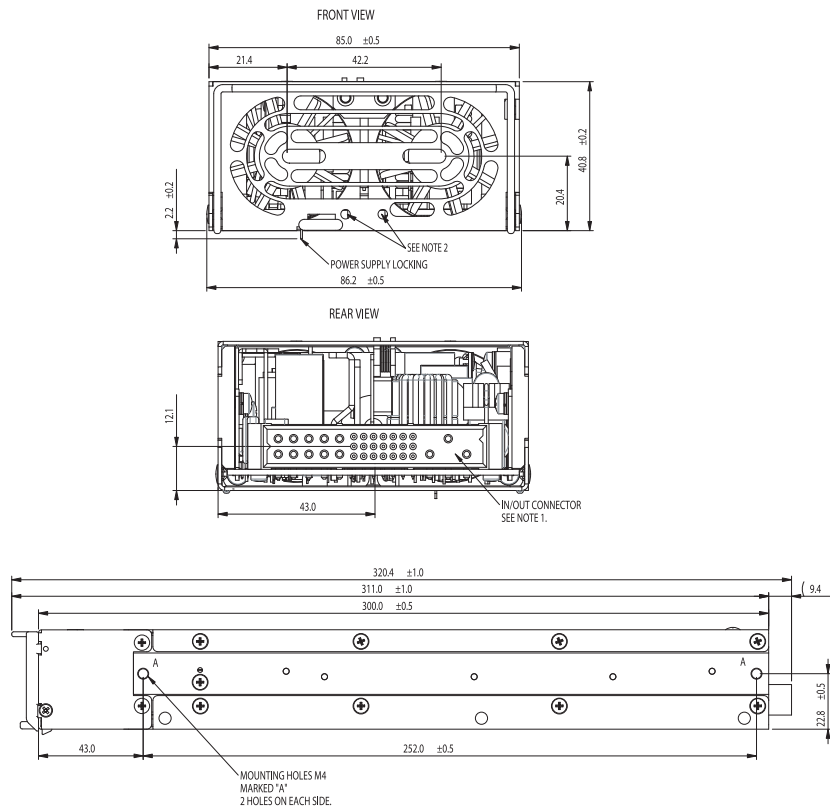
HFE1600-S1U - Five slot 19' rack single common output



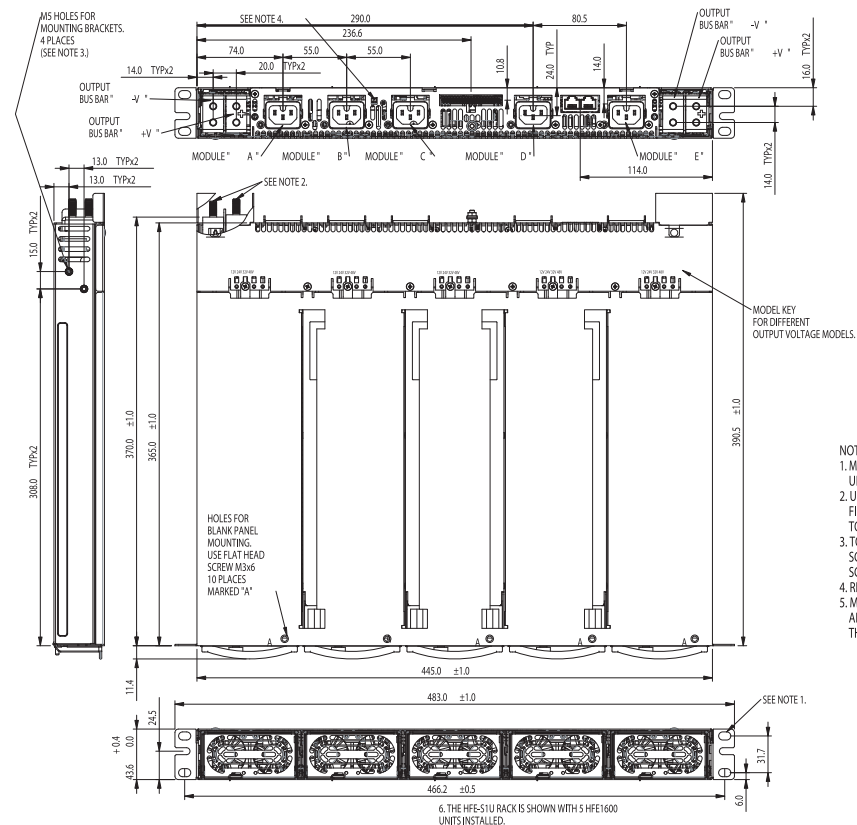
HFE1600-D1U - Four slot (two isolated pairs), dual output 19' rack



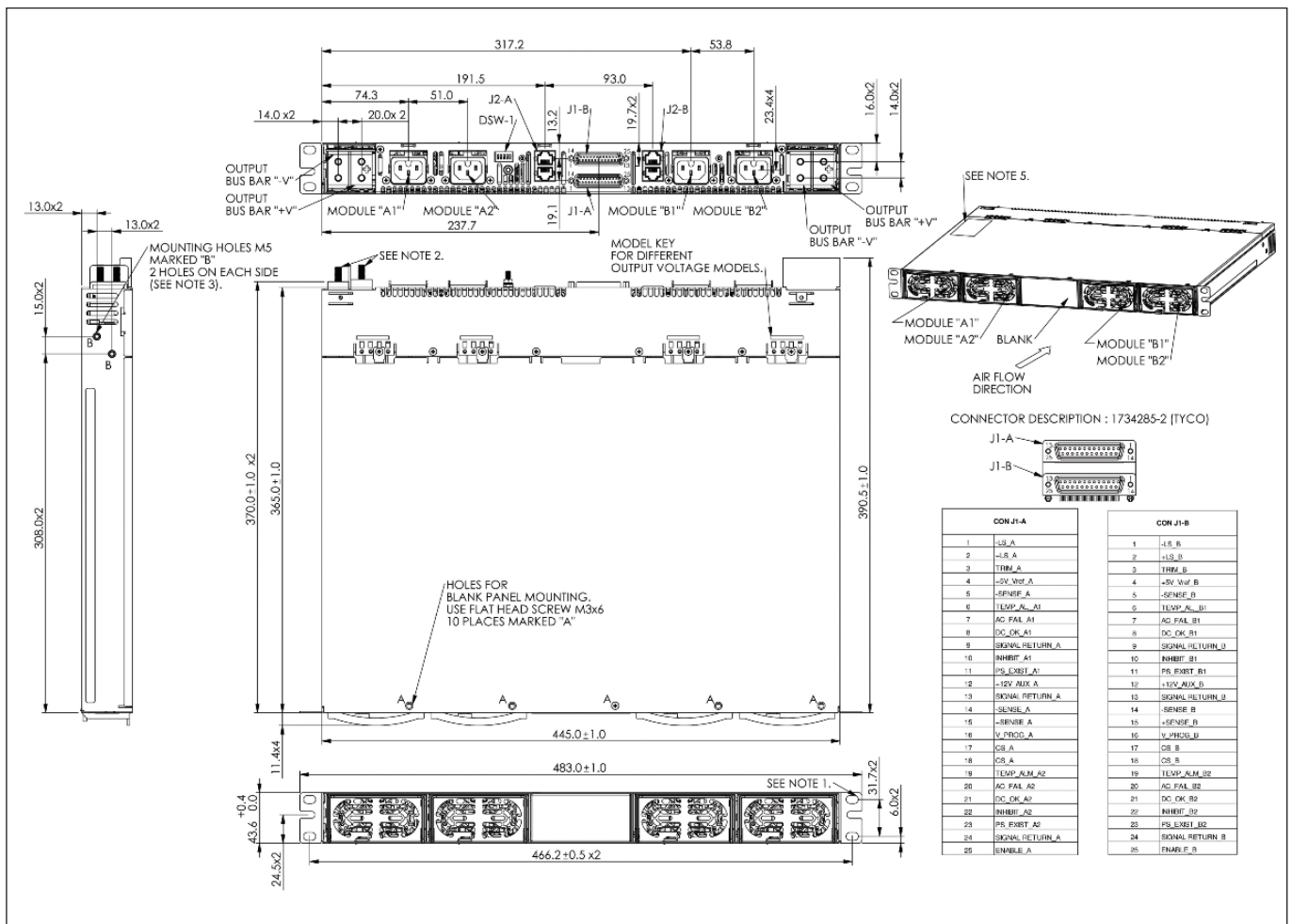
Outline Drawing HFE1600 Series



Outline Drawing HFE1600S1U Series



Outline Drawing HFE1600 D1U Series



Notes:

- Mounting holes for rack 19" Use M6 x 12 screws to fix the unit to a rack.
- Use nut, flat washer and spring washer for load wires. Fixing - Use lug for stud M6 for load wires. Recommended torque: 42-56 Kgf.cm.
- To fix the mounting bracket to the chassis use M5 x 10 SEMS screws. Recommended tightening torque 27-31Kgf.cm. Screws must not penetrate the chassis more than 6.0mm.
- The HFE1600-D1U rack is shown with a 4 HFE1600 unit installed and 1 blank panel.
- Model name, voltage and current rating and safety approvals symbols will be shown here according to the specification.



HFE2500 Series

2500W 1U Hot Swap Front End
Power Supplies

- 29.2W/in³ power density
- 1U rackmount containing up to 4 units
- Internal ORing MOSFET & Current Share
- Up to 10,000W in 1U rack
- PMBus option



Key Market Segments & Applications

Power for Distributed Power Architecture Industrial Automation



Industrial



Test



Broadcast



Comm

HFE2500 Features and Benefits

Features

- 1U high
- Internal ORing MOSFET & Current Share
- Full array of signals available

Benefits

- Utilizes less system space
- Suitable for N+1 redundancy
- Easier system monitoring including PMBus

Specifications

MODELS		HFE2500
ITEMS		
Input Voltage Range (2)	VAC	85 - 265VAC, 47 - 63Hz. See model selector for power derating
Input Current (Max) 100/230VAC	A	17 / 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%. Programmable by external voltage (0-5V)
Overvoltage Protection (1)	%	110% ±3% (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, -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 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°C to +70°C, derate 2%/°C from 50°C to 60°C, 2.5%/°C from 60°C to 70°C
Storage Temperature	°C	-30°C 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 Grnd 2kVAC, O/P to Grnd: HFE2500-12, -24V 500VAC, HFE2500-48 2250VDC
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
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 (lv 3), -5 (lv 3,4), -6 (lv 2), -8 (lv 4), -11
Size (W x H x D)	mm	Power Supply: 107 x 41 x 325, Rack: 445 x 44 x 402
Weight	g	Power Supply: 2100g, Rack: 5000g
Warranty yrs	Yrs	3

(1) See installation manual for detailed specifications & test methods (2) Derate linearly 1.3%/V from 100VAC to 85VAC input

Model Selector

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)
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

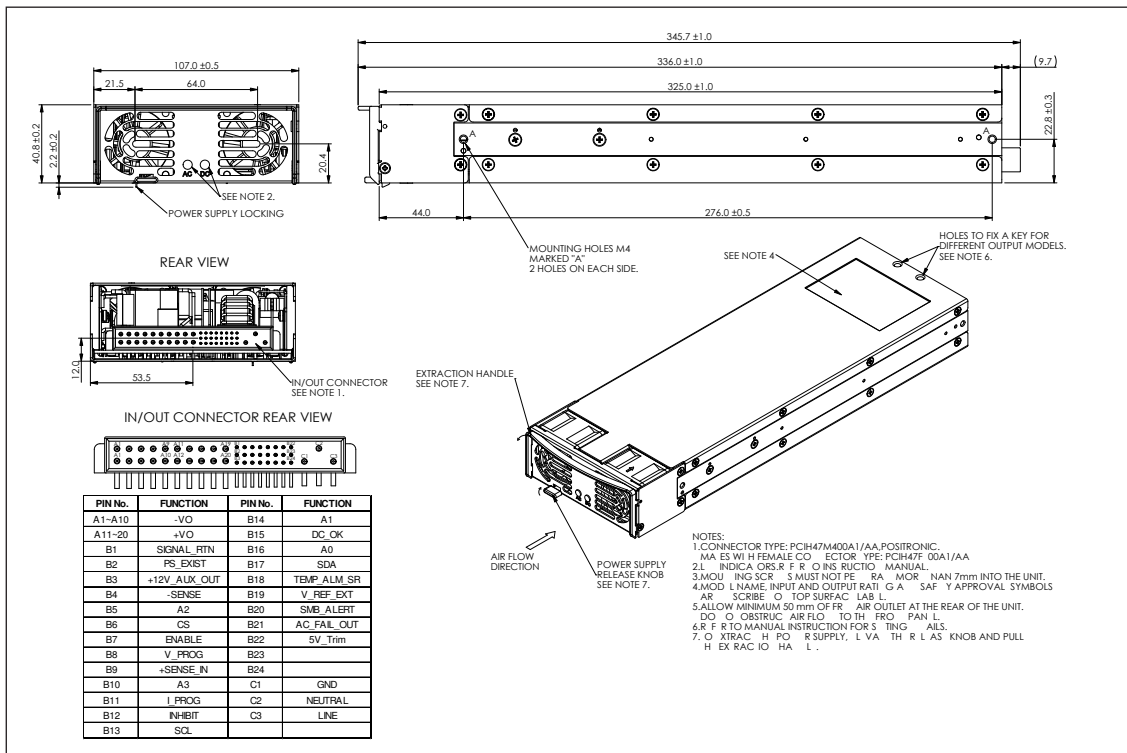
Model	Load Reg	Line Reg	Ripple & Noise	Efficiency (%) (3)	PC
HFE2500-12	60mV	30mV	240mV	90 / 92%	-
HFE2500-12/S	60mV	30mV	240mV	90 / 92%	Yes
HFE2500-24	120mV	60mV	240mV	90 / 92%	-
HFE2500-24/S	120mV	60mV	240mV	90 / 92%	Yes
HFE2500-48	240mV	120mV	480mV	91 / 93%	-
HFE2500-48/S	240mV	120mV	480mV	91 / 93%	Yes

(3) At 75% load, 115 / 230VAC input

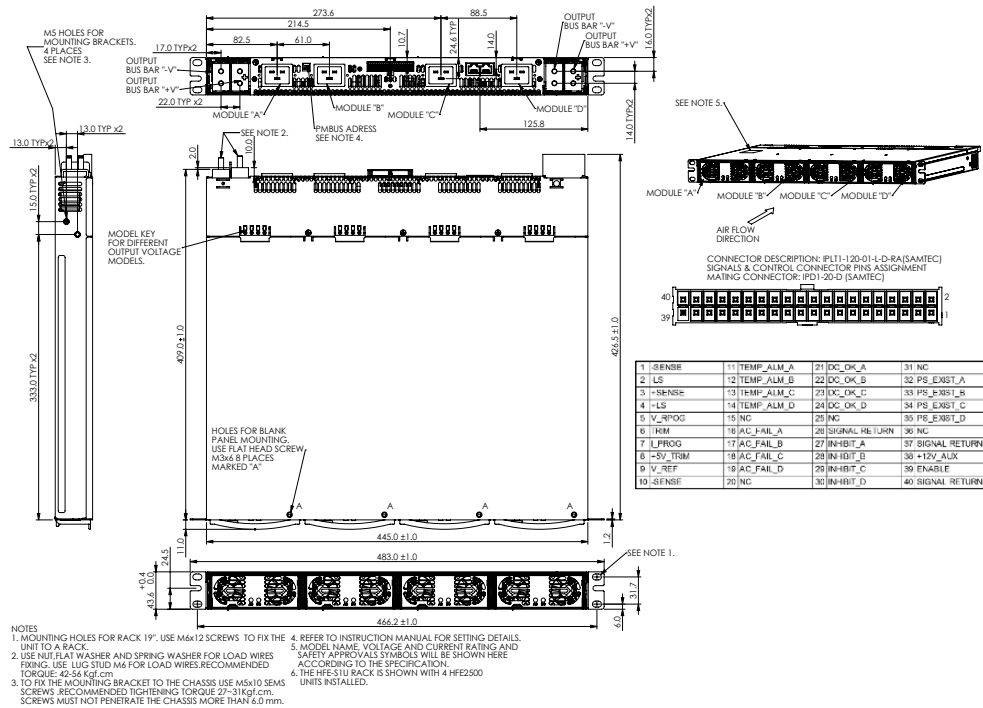
Rack Model Selector

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	-

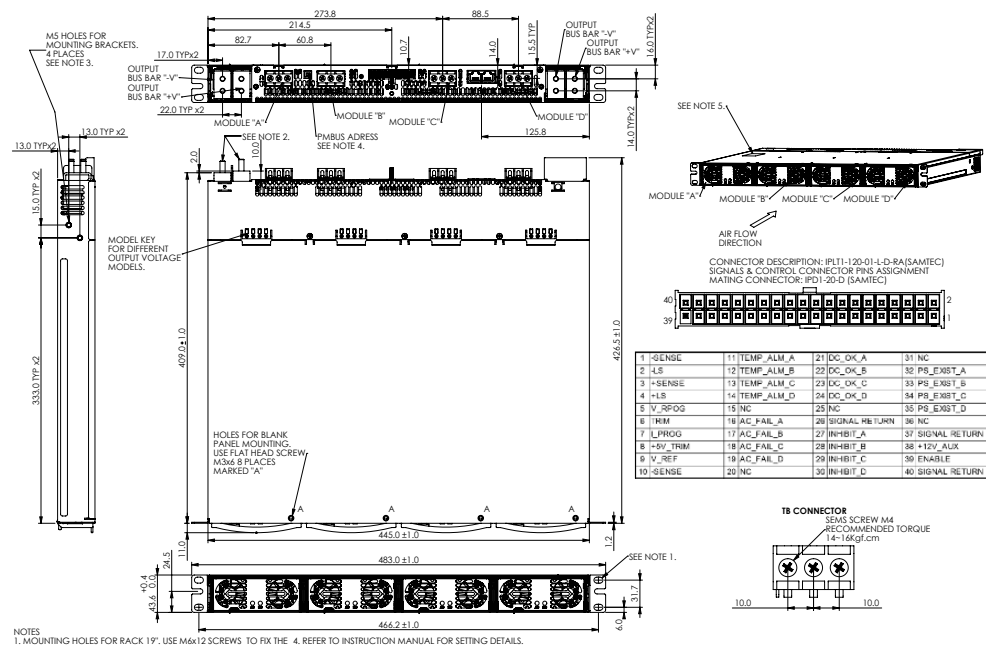
Outline Drawing HFE2500



Outline Drawing HFE2500 - S1U



Outline Drawing HFE2500 - S1U - TB



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