

2500W 1U Front End Power Supplies

<https://product.tdk.com/en/power/hfe>
www.emea.lambda.tdk.com/uk/products/hfe



Industrial



COTS



Test



COMM



Broadcast



The HFE2500 AC-DC industrial power supplies can be operated in a hot-swap redundant configuration, or used to provide up to 9,500W of bulk power. Up to four power supplies can be fitted in a variety of 19" 1U high racks, for configuration as a single output. The HFE supplies have internal ORing MOSFETs and current share for automatic parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I²C) interface or a plug-in LAN module. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features

- Internal ORing MOSFET and Current Share
- Up to 9500W in 1U Rack
- Full Array of Signals Available
- PMBus™ (I²C) and LAN options
- Analog Output Adjustment

Benefits

- Suitable For N+1 Redundancy
- Utilizes Less System Space
- Easy Remote Monitoring
- Industry Standard Communication Interfaces
- Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V) ⁽¹⁾	Max Current (A) (Vin>180Vac)	Max Power (W) (Vin>180Vac)	Max Current (A) (100<Vin<170Vac) ⁽²⁾	Max Power (W) (100<Vin<170Vac) ⁽²⁾
HFE2500-12	12	9.6 - 13.2	200	2400	125	1500
HFE2500-24	24	19.2 - 29	104	2496	62.5	1500
HFE2500-48	48	38.4V - 58	52	2496	31.25	1500

HFE2500-	12	/	S
	Output voltage 12, 24, 48		blank No PMBus™ / I ² C S PMBus™ / I ² C interface

Model Selector (Racks and LAN)

Model	Description	Maximum Rack Current
HFE2500-S1U	Four slot 19" rack, IEC320-C20 input connectors (4)	320A each side (640A total)
HFE2500-S1U-TB	Four slot 19" rack, Terminal Block input connectors (4)	320A each side (640A total)
HFE2500/BP	One slot blanking panel, three panels come with each rack	
HFE/C19-U-O	AC Power cord, 2.0m long, one per supply required	
HFE2500-LAN	Plug in LAN Module. Takes up one rack slot. For use with /S power supplies only.	

Specifications					
Model		HFE2500-12		HFE2500-24	HFE2500-48
Input					
Input Voltage range (2)	Vac	85 - 265, See model selector for power derating			
Input Frequency	Hz	47 - 63			
Input Current (Max) 100/230Vac	A	15 / 12			
Inrush Current	A	<50			
Leakage Current 100/230Vac, 60Hz	mA	<0.75 / 1.5			
Power Factor Correction	-	Meets EN61000-3-2, PF > 0.98 at full load			
Harmonic Compliance	-	Meets IEC61000-3-2			
Hold-Up Time 115/230Vac, 60Hz	ms	>10, 80% loading			
Efficiency (3)	%	90 / 92	90 / 92	91 / 93	
Conducted EMI	-	Designed to meet EN55022-B, FCC Class B, VCCI-B			
Radiated EMI	-	Designed to meet EN55022-A, FCC Class A, VCCI-A			
Immunity	-	See immunity section			
Safety Agency Certifications	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark			

Immunity				
Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	2,3	B	-
Radiated Susceptibility	EN61000-4-3	2	A	-
Electrical Fast Transient Burst	EN61000-4-4	2	B	-
Surge	EN61000-4-5	3,4	B	-
Conducted Susceptibility	EN61000-4-6	2	A	-
Magnetic fields	EN61000-4-8	4	A	-
Voltage Dips and Input Interruptions	EN61000-4-11	>95% for 0.5 cycles	B	-
		30% for 25/30 cycles	C	-
		>95% for 250/300 cycles	C	-

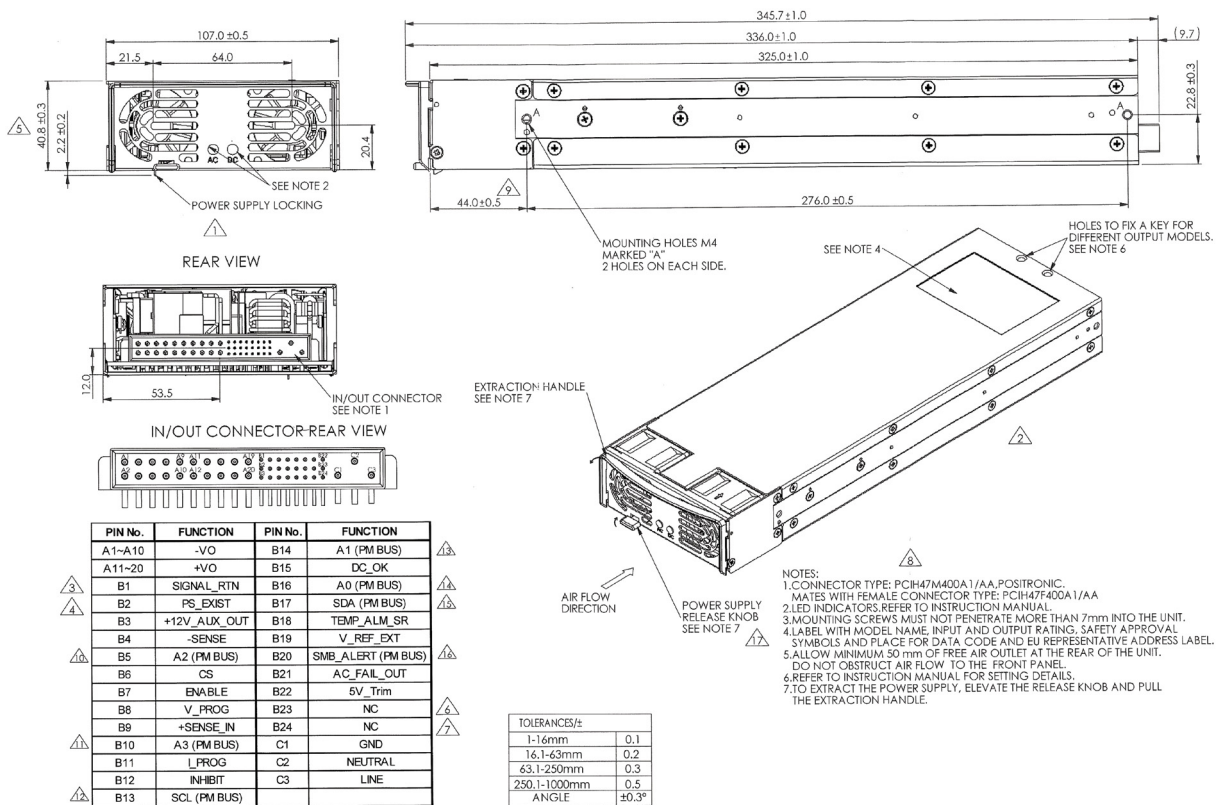
Specifications				
Model		HFE2500-12	HFE2500-24	HFE2500-48
Output				
Line Regulation	mV	30	60	120
Load Regulation	mV	60	120	240
External Load Capacitance	uF	1000/A		
Ripple & Noise (1)	mV	240	240	480
Temperature Coefficient	%/°C	<0.02		
Minimum Load	-	No minimum load required		
Overcurrent Protection	%	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		
Remote Sense Compensation	V/wire	0.25	0.5	1.0
Remote On/Off	-	Unit ON: 0-0.6V or short, OFF: 2-15V or open circuit		
Remote Adjust (1)	-	By either external 0-5V signal or 1k potentiometer		
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)		
Auxiliary Output	-	11.2 - 12.5V, 0.5A, 240mV ripple and noise		
Communication	-	Optional isolated PMbus™ (I²C) interface (/S suffix) or plug-in LAN module. See model selectors		
Indicators	-	AC OK: Green LED, DC OK / Fail: Green / Red LED		
Parallel Operation (1)	-	Yes, single wire current share, up to 95% accuracy (load dependent), up to 8 units		
Series Operation (1)	-	Two racks maximum (external diodes required)		

Specifications				
Model		HFE2500-12	HFE2500-24	HFE2500-48
Output				
Operating Temperature	°C	10 to +50: 100% load; +50 to +60 derate: 2%/°C of load; +60 to +70 derate: 2.5%/°C of load.		
		For models with reverse air contact factory.		
Storage Temperature	°C	-30 to +85		
Humidity (non condensing)	%RH	Operating: 10 - 90, Storage: 10 - 95		
Cooling	-	Internal variable speed fans. Airflow enters from the front. (4)		
Altitude	m	3000 max. Derate output current 2%/100m above 2000m.		
Withstand Voltage	-	I/P to O/P 3kVac, I/P to GND 2kVac. O/P to GND: HFE2500-12, -24V 500Vac, HFE2500-48 2250Vdc 1 min, (POE)		
Isolation Resistance	MΩ	>100 at 25°C & 70%RH, Output to Ground 500Vdc		
Vibration (Non-operating)	-	Meets IEC60068-2-64 (Basic Transporation)		
Shock (Non-operating)	-	Meets IEC60068-2-27 (Basic Transporation)		
Other				
Weight (Typ)	g	Power Supply: 2100, Rack: 5000		
Size (LxWxH)	mm	Power supply: 325 x 107 x 40.1; Rack: 477.5 x 444.5 x 43.7		
Size (LxWxH)	Inches	Power Supply: 12.8 x 4.21 x 1.61; Rack: 15.8 x 17.5 x 1.72		
PMBus™ / I²C Interface (1)	-	Isolated from output, Add suffix /S, PMBus™ compatible		
MTBF - Telcordia	Hours	219,557		
Warranty	yrs	Three		

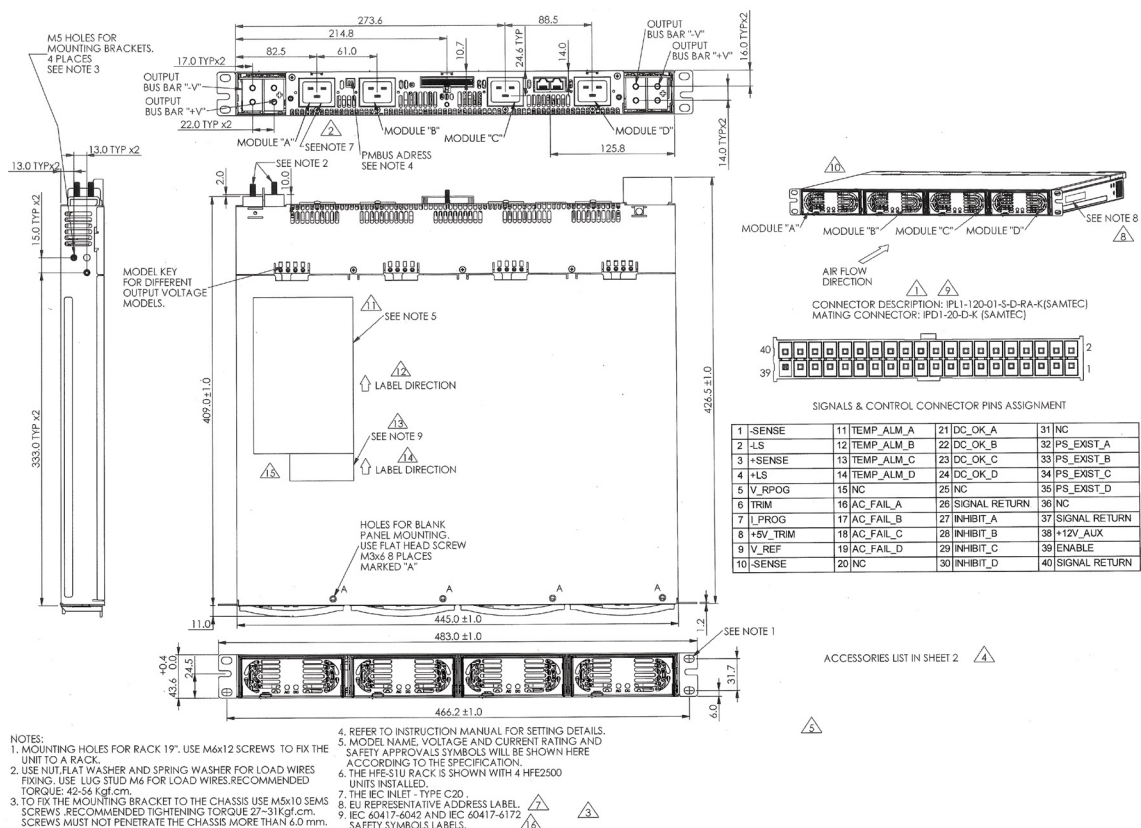
Notes

- (1) See installation manual for detailed specifications & test methods
- (2) Derate linearly 1.3%/V from 100Vac to 85Vac input
- (3) At 75% load, 100 / 230Vac input
- (4) Reverse air - contact factory

Outline Drawing HFE2500



Outline Drawing HFE2500-S1U



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 LUG STUD M6 FOR LOAD WIRES. RECOMMENDED TORQUE: 42-56 Kgf.cm.

3. TO FIX THE MOUNTING BRACKET TO THE CHASSIS USE M5x10 SEMS SCREWS. RECOMMENDED TIGHTENING TORQUE 27-31Kgf.cm. SCREWS MUST NOT PENETRATE THE CHASSIS MORE THAN 6.0 mm.

4. REFER TO INSTRUCTION MANUAL FOR SETTING DETAILS.

5. MODEL NAME, VOLTAGE AND CURRENT RATING AND SAFETY APPROVALS SYMBOLS WILL BE SHOWN HERE ACCORDING TO THE SPECIFICATION.

6. USE UL APPROVED INSULATED TERMINAL LUGS.

7. THE HFE-S11 RACK IS SHOWN WITH 4 HFE2500 UNITS INSTALLED.

8. EU REPRESENTATIVE ADDRESS LABEL.

9. IEC 60417-6042 AND IEC 60417-6172.

10. SAFETY SYMBOLS LABELS.

11. SIGNALS & CONTROL CONNECTOR PINS ASSIGNMENT

1 SENSE	11 TEMP_ALM_A	21 DC_OK_A	31 NC
2 LS	12 TEMP_ALM_B	22 DC_OK_B	32 PS_EXIST_A
3 SENSE	13 TEMP_ALM_C	23 DC_OK_C	33 PS_EXIST_B
4 LS	14 TEMP_ALM_D	24 DC_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 VSV_TRIM	18 AC_FAIL_C	28 INHIBIT_B	38 +12V_AUX
9 V_REF	19 AC_FAIL_D	29 INHIBIT_C	39 ENABLE
10 SENSE	20 NC	30 INHIBIT_D	40 SIGNAL RETURN

ACCESSORIES LIST IN SHEET 2

1. MOUNTING BRACKET FOR RACK 19".

2. NUT/FLAT WASHER AND SPRING WASHER FOR LOAD WIRES FIXING.

3. LUG STUD M6 FOR LOAD WIRES.

4. M5x10 SEMS SCREWS.

5. M6x12 SCREWS.

6. UL APPROVED INSULATED TERMINAL LUGS.

7. HFE-S11 RACK.

8. HFE2500 UNITS.

9. EU REPRESENTATIVE ADDRESS LABEL.

10. SAFETY SYMBOLS LABELS.

11. SIGNALS & CONTROL CONNECTOR PINS ASSIGNMENT

TB CONNECTOR			
SEMS SCREW M4			
RECOMMENDED TORQUE			
14-16Kgf.cm			

1. MOUNTING BRACKET FOR RACK 19".

2. NUT/FLAT WASHER AND SPRING WASHER FOR LOAD WIRES FIXING.

3. LUG STUD M6 FOR LOAD WIRES.

4. M5x10 SEMS SCREWS.

5. M6x12 SCREWS.

6. UL APPROVED INSULATED TERMINAL LUGS.

7. HFE-S11 RACK.

8. HFE2500 UNITS.

9. EU REPRESENTATIVE ADDRESS LABEL.

10. SAFETY SYMBOLS LABELS.

11. SIGNALS & CONTROL CONNECTOR PINS ASSIGNMENT

TB CONNECTOR			
SEMS SCREW M4			
RECOMMENDED TORQUE			
14-16Kgf.cm			

FRONT VIEW

Dimensions: 346.0 ±1.0, 325.3 ±1.0, 276.0 ±0.5, 44.0 ±0.5, 40.8 ±0.3, 107.0 ±0.5, 2.2 ±0.2

Labels: MOUNTING HOLES M4 MARKED 'A' 2 HOLES ON EACH SIDE.

REAR VIEW

Dimensions: 53.5, 12.0

Label: IN/OUT CONNECTOR SEE NOTE 1

IN/OUT CONNECTOR REAR VIEW

PIN No.	FUNCTION	PIN No.	FUNCTION
A1-A10	NC	B14	NC
A11-20	NC	B15	NC
B1	SIGNAL RETURN	B16	NC
B2	MODULE EXIST	B17	SDA (SERIAL DATA)
B3	+12V_AUX_IN	B18	NC
B4	NC	B19	NC
B6	NC	B20	SMB_ALERT
B8	NC	B21	NC
B7	NC	B22	NC
B8	NC	B23	NC
B9	NC	B24	NC
B10	NC	C1	NC
B11	NC	C2	NC
B12	NC	C3	NC
B13	SCL (SERIAL CLOCK)		

NOTES

- CONNECTOR TYPE: PC147M400A1/AA POSITRONIC.
- MATES WITH FEMALE CONNECTOR TYPE: PC147F400A1/AA
- REFER TO INSTRUCTION MANUAL.
- MOUNTING SCREWS MUST NOT PENETRATE MORE THAN 7mm INTO THE UNIT.
- MODEL NAME, INPUT RATING AND SAFETY APPROVAL SYMBOLS ARE DESCRIBED ON TOP SURFACE LABEL.
- ALLOW MINIMUM 50 mm OF UNRESTRICTED AIR SPACE AT THE REAR OF UNIT. DO NOT OBSTRUCT AIR FLOW TO THE UNIT FRONT PANEL.
- TO EXTRACT THE MODULE, ELEVATE AND HOLD THE RELEASE KNOB AND PULL THE EXTRACTION HANDLE.
- EU REPRESENTATIVE ADDRESS LABEL.

TOLERANCES/±

Ls1	6.0mm	0.1
16.0<Ls2	63.0mm	0.2
63.0<Ls2	250.0mm	0.3
250.0<Ls2	1000.0mm	0.5
1000<L		0.8
ANGLE		±0.5°



TDK-Lambda France SAS

Tel: +33 1 60 12 71 65
france@fr.tdk-lambda.com
www.emea.lambda.tdk.com/fr



Italy Sales Office

Tel: +39 02 61 29 38 63
info.italia@it.tdk-lambda.com
www.emea.lambda.tdk.com/it



Netherlands

info@nl.tdk-lambda.com
www.emea.lambda.tdk.com/nl



TDK-Lambda Germany GmbH

Tel: +49 7841 666 0
info.germany@de.tdk-lambda.com
www.emea.lambda.tdk.com/de



Austria Sales Office

Tel: +43 2256 655 84
info@at.tdk-lambda.com
www.emea.lambda.tdk.com/at



Switzerland Sales Office

Tel: +41 44 850 53 53
info@ch.tdk-lambda.com
www.emea.lambda.tdk.com/ch



Nordic Sales Office

Tel: +45 8853 8086
info@dk.tdk-lambda.com
www.emea.lambda.tdk.com/dk



TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66
info@uk.tdk-lambda.com
www.emea.lambda.tdk.com/uk



TDK-Lambda Ltd.

Tel: +9 723 902 4333
info@tdk-lambda.co.il
www.emea.lambda.tdk.com/il



C.I.S.

Commercial Support:

Tel: +7 (495) 665 2627

Technical Support:

Tel: +7 (812) 658 0463
info@tdk-lambda.ru
www.emea.lambda.tdk.com/ru



TDK-Lambda Americas

Tel: +1 800-LAMBDA-4 or 1-800-526-2324
powersolutions@us.tdk-lambda.com
www.us.lambda.tdk.com



TDK Electronics do Brasil Ltda

Tel: +55 11 3289-9599
sales.br@tdk-electronics.tdk.com
www.tdk-electronics.tdk.com/en



TDK-Lambda Corporation

Tel: +81-3-6778-1113
www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd.

Tel: +86 21 6485-0777
powersolutions@cn.tdk-lambda.com
www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd.

Tel: +65 6251 7211
tis.mkt@sg.tdk-lambda.com
www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division

Tel: +91 80 4039-0660
mathew.philip@in.tdk-lambda.com
www.sg.lambda.tdk.com



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[TDK-Lambda:](#)

[HFE2500-12](#) [HFE2500-24](#) [HFE2500-48](#) [HFE2500-48/S](#) [HFE2500-12/S](#) [HFE2500-24/S](#)