2500W 1U Industrial Power Supplies

https://product.tdk.com/en/power/rfe
www.emea.lambda.tdk.com/uk/products/rfe

Industrial COTS Test COMM Broadcast

The RFE2500 AC-DC industrial power supplies are high efficiency and 1U in height. They have internal ORing MOSFETs and current share for parallel operation. Communication is possible with the power supplies using the optional isolated PMBus™ (I^2C) interface. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing FETs and Current Share	• Suitable For N+1 Redundancy
• Up to 2500W in 1U Height	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I^2C)	• Industry Standard Communication Interface
• Analog Output Adjustment	• Simple External Resistance or Voltage Connection

Model Selector

Model	Output Voltage (V)	Adjustment Range (V)(1)	Max Current (A) (100<Vin<132Vac)(2)	Max Power (W) (100<Vin<132Vac)(2)	Max Current (A) (170<Vin<180Vac)(2)	Max Power (W) (170<Vin<180Vac)(2)	Max Current (A) (Vin>180Vac)	Max Power (W) (Vin>180Vac)
RFE2500-12	12	9.6 - 13.2	125	1500	200	2400	200	2400
RFE2500-24	24	19.2 - 29	62.5	1500	96	2304	96	2304
RFE2500-48	48	38.4 - 58	31.25	1500	50	2400	52	2496

RFE2500-	12	/	S

Output voltage 12, 24, 48

blank	No PMBus™ / I^2C
S	PMBus™ / I^2C interface

Specifications

Model		RFE2500-12	RFE2500-24	RFE2500-48
Input				
AC Input Voltage Range (Operating)	Vac	85 - 265. See model selector for power derating[2]		
Nominal Input Voltage Range	Vac	100 - 240 (Note: Safety certified for 90-264Vac)		
Input Frequency	Hz	47 - 63 (Note: Safety certified for 50/60Hz only)		
Input Current (Max) (110/230Vac)	A	15 / 12		
Inrush Current	A	<50		
Leakage Current	mA	Less than 0.8 /1.6 at 115/230Vac, 60Hz		
Power Factor Correction	-	Meets EN61000-3-2, PF >0.98 at full load		
Harmonic Compliance	-	Meets IEC61000-3-2		
Hold Up Time	ms	>10, 100/230Vac Input, 80% loading		
Efficiency	%	90 / 92	90 / 92	91 / 93
Conducted EMI	-	Built to meet EN55032 Class B, FCC part 15 Class-B, VCCI Class-B		
Radiated EMI	-	Built to meet EN55032 Class A, FCC part 15 Class-A, VCCI Class-A		
Immunity	-	See immunity section		
Safety Certifications and Markings	-	IEC/UL/CSA/EN62368-1, 60950-1, CE Mark and UKCA Mark		

Immunity

Test	Standard	Test Level	Criteria	Notes
ESD	EN61000-4-2	2,3	B	See immunity data on website
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 / Interruptions	EN61000-4-11	>95% for 0.5 cycles	B	
		30% for 25/30 cycles	B	
		>95% for 250/300 cycles	B	

Specifications

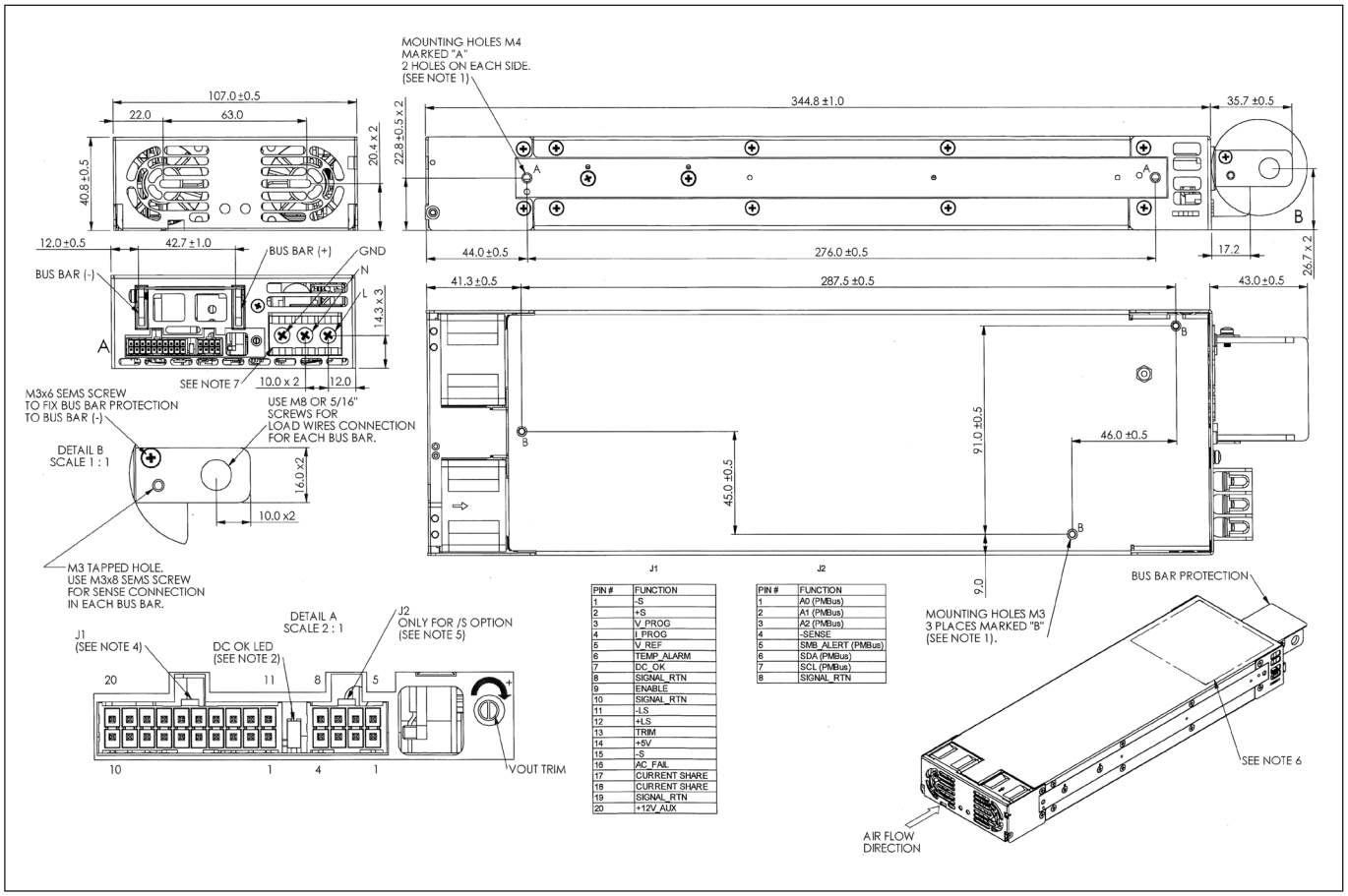
Model		RFE2500-12	RFE2500-24	RFE2500-48
Output				
Line Regulation	mV	30	60	120
Load Regulation	mV	60	120	240
External Load Capacitance	uF/A	1000		
Ripple & Noise	mV	240	240	480
Temperature Coefficient	%/°C	<0.02		
Minimum Load	-	No minimum load required		
Overcurrent Protection	%	115Vac:>110%; 230Vac: 105 - 120%		
Overvoltage Protection (1)	%	110 (Tracking). Cycle AC to reset or utilize Remote On/Off		
Overtemperature Protection	-	Shutdown with automatic reset. Warning signal provided [1]		
Remote Sense Compensation	V/wire	0.25	0.5	1.0
Remote On/Off	-	Yes, inhibit & enable		
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)		
Communication	-	Optional isolated PMBus™ (I^2C) interface (/S suffix) or plug-in LAN module. See model selectors		
Auxiliary Output	-	11.2 - 12.5V, 0.5A, 240mV ripple and noise		
Indicators	-	AC OK: Green LED, DC OK / Fail: Green / Red LED		
Parallel Operation	-	Yes, single wire current share, 5% accuracy of max current, up to 8 units		

Specifications

Model		RFE2500-12	RFE2500-24	RFE2500-48
Environmental				
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. Contact factory for reverse airflow option.		
Altitude	m	3000 max. Derate output current 2%/100m above 2000m.		
Withstand Voltage (For 1 minute)	-	Input to Output 3kVac, Input to Ground 2kVac, Output to Ground:		
		500Vac	500Vac	2250Vdc (POE)
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & Output to Ground 500Vdc		
Vibration (Non-operating)	-	Meets IEC61068-2-64 (Basic Transportation)		
Shock (Non-operating)	-	Meets IEC61068-2-27 (Basic Transportation)		
Other				
Weight (Typ)	g	2,500		
Size (LxWxH)	mm	345 x 107 x 41		
Size (LxWxH)	Inches	13.6 x 4.21 x 1.61		
PMBus™ / I²C Interface (1)	-	Isolated from output, Add suffix /S, PMBus™ compatible		
MTBF - Telcordia	Hours	208,356		
Warranty	Years	3		

Notes
(1) See website for detailed specifications, test methods and installation manual
(2) Derate 1.3%/Vac from 100Vac to 85Vac input

Outline Drawing RFE2500



J1

PIN #	FUNCTION
1	-S
2	+S
3	V_PROG
4	I_PROG
5	V_REF
6	TEMP_ALARM
7	DC_OK
8	SIGNAL_RTN
9	ENABLE
10	SIGNAL_RTN
11	-LS
12	+LS
13	TRIM
14	+5V
15	-S
16	AC_FAIL
17	CURRENT SHARE
18	CURRENT SHARE
19	SIGNAL_RTN
20	+12V_AUX

J2

PIN #	FUNCTION
1	A0 (PMBus)
2	A1 (PMBus)
3	A2 (PMBus)
4	-SENSE
5	SMB_ALERT (PMBus)
6	SDA (PMBus)
7	SCL (PMBus)
8	SIGNAL_RTN

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