

1600W 1U Industrial Power Supplies

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



The RFE1600 AC-DC industrial power supplies are high efficiency and are 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™ (I²C) interface. AC fail, DC good, remote output adjust, remote on/off and a 12V auxiliary output are fitted as standard.

Features	Benefits
• Internal ORing MOSFET and Current Share	• Suitable For N+1 Redundancy
• Up to 1600W in 1U Height	• Utilizes Less System Space
• Full Array of Signals Available	• Easy Remote Monitoring
• PMBus™ (I ² C)	• 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) (V _{in} >170Vac)	Max Power (W) (V _{in} >170Vac)	Max Current (A) (100<V _{in} <170Vac) ⁽²⁾	Max Power (W) (100<V _{in} <170Vac) ⁽²⁾
RFE1600-12	12	9.6 - 13.2	133	1596	100	1200
RFE1600-24	24	19.2 - 29	67	1608	50	1200
RFE1600-32	32	25.6 - 38.4	47	1504	37.5	1200
RFE1600-48	48	38.4 - 58	33	1584	25	1200

RFE1600-	12	/	S
	Output voltage 12, 24, 32, 48		blank No PMBus™ / I ² C S PMBus™ / I ² C interface

Specifications					
Model		RFE1600-12	RFE1600-24	RFE1600-32	RFE1600-48
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 (115/230Vac)	A	11.6 / 8.1			
Inrush Current	A	<35			
Leakage Current	mA	Less than 0.75/1.5 at 115/230Vac			
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	%	87 / 90	88 / 90	88 / 90	89 / 92
Conducted & Radiated EMI	-	EN55032 & FCC part 15; Conducted class B, Radiated 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	
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	EN61000-4-11	>95% for 0.5 cycles	B	-	
		30% for 25/30 cycles	C	-	
Interruptions		>95% for 250/300 cycles	C	-	

Specifications					
Model		RFE1600-12	RFE1600-24	RFE1600-32	RFE1600-48
Output					
Line Regulation	mV	30	60	80	120
Load Regulation	mV	60	120	160	240
External Load Capacitance	uF/A	1000			
Ripple & Noise	mV	240	240	320	480
Temperature Coefficient	%/°C	<0.02			
Minimum Load	-	No minimum load required			
Overcurrent Protection	%	105-115 (Programmable)			
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	0.25V	0.5V	0.75	1.0V
Remote On/Off	-	Yes, inhibit & enable			
AC Good 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™ (I²C) 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 10 units			

Specifications					
Model		RFE1600-12	RFE1600-24	RFE1600-32	RFE1600-48
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	500Vac	2250Vdc (POE)
Isolation Resistance	MΩ	>100 at 25°C, 70%RH & Output to Ground 500Vdc			
Vibration (Non-operating)	-	Meets IEC60068-2-64 (Basic Transportation)			
Shock (Non-operating)	-	Meets IEC60068-2-27 (Basic Transportation)			
Other					
Weight (Typ)	g	1,550			
Size (LxWxH)	mm	320 x 85 x 40.1			
Size (LxWxH)	Inches	12.6 x 3.35 x 1.61			
PMBus™ / I²C Interface (1)	-	Isolated from output, Add suffix /S, PMBus™ compatible			
MTBF - Telcordia	Hours	199426 (Estimated based on HFE1600 figures)			
Warranty	Years	3			

(2) Derate linearly 1%/V from 100Vac to 85Vac input

Outline Drawing RFE1600



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