

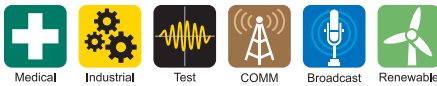
300-400W Medical Power Supplies

Features

- ◆ Medical Safety Certifications (BF Rated)
- ◆ Fully Featured - including ORing FET
- ◆ Universal Input (90 - 264VAC)
- ◆ Peak Loading (10s)
- ◆ Suitable for 1U applications
- ◆ Full Digital Control
- ◆ High Efficiency
- ◆ Low Profile
- ◆ Reinforced Isolation (4kVAC input to output)



Key Market Segments & Applications



Specifications		EFE300M	EFE400M
Input Voltage range	-	90 - 264VAC	
Input Frequency	-	45 - 63Hz, 440Hz with reduced PFC	
Inrush Current	A	<40A at 25C and 230VAC input, Cold Start	
Power Factor Harmonics	-	EN61000-3-2 Compliant (0.97 typical)	
Voltage Setting	-	Setting: -5% to +10% (Chosen at time of ordering), Accuracy: +/-1% at 50% Load	
Total Regulation	-	< 4% with 90 - 264VAC input change and 0-100% load change	
Ripple & Noise	mV	< 1.5% peak-peak	
Efficiency	-	90% typical. EFE400M: 1W power draw in standby mode	
Overcurrent Protection	-	Automatic recovery upon overload removal	
Overvoltage Protection	V	Cycle AC line to reset	
Overtemperature Protection	-	Yes	
Hold Up Time (Typ)	ms	>16ms at 90VAC input, 75% load	
Leakage Current (max)	µA	123µA 120VAC 60Hz, 257µA 240VAC 60Hz, <300µA 264VAC 63Hz (Type Test results)	
Fan Supply	-	12V 1A (Available if no fan option selected)	
Standby Voltage	-	5V 2A or 12V 1A (chosen at time of ordering)	
Remote Sense	-	None	
Signals & Features	-	Remote on/off - Inhibit or Enable operation (chosen at time of ordering) Power Good - High indicates supply is good. ORing FET - Allows redundant connection of supplies	
Operating Temperature (2)	°C	0 to +70°C. Derate linearly to 50% load from 50°C to 70°C	
Storage Temperature	°C	-40 to +85°C	
Humidity (non condensing)	%RH	5 - 95% RH	
Cooling	-	Forced air, 2m/s from input to output (approximately 10CFM)	
Isolation	-	Input to Output 4kVAC ⁽³⁾ , (2 x MOPPs (3rd edition 60601)); Input to Ground 1.5 kVAC, 2.3kVDC (Basic), Output to Ground 1500VAC	
Vibration (non operating)	-	2G, 10-500Hz (sweep & endurance at resonance) in all 3 planes. MIL-STD-810E, Method 51.4, Pro I, Cat 1, 9	
Shock	-	30G per IEC68-2-27, MIL-STD-810E/F, Method 516.5, Pro I, IV, VI	
Safety Agency Approvals	-	UL/CSA/IEC/EN 60601-1, ANSI/AAMI ES60601-1, IEC/EN 61010-1 ⁽⁴⁾ , IEC/UL/EN/CSA 60950-1, CE Mark	
Immunity	-	EN61000-4-2, -3, -4, -5, -6, -8, -11, -12, -14	
Conducted Emissions and Flicker	-	EN55011, EN55022 Class B (per CISPR.11/22), EN61000-3-3	
Radiated Emissions	-	EN55011, EN55022 Class B (per CISPR.11/22)	
Weight (open frame or enclosed)	g	350g or 600g	450g or 700g
Size (Open frame style) (1)	in	3 x 6 x 1.34"	3.5 x 6.5 x 1.34"
Warranty	yrs	Five Years	

(1) Including underside component leads

(2) -20°C cold start.

(3) Type tested to 4kVAC (equivalent to 5.7 kVDC), production tested to 4.3 kVDC.

(4) EFE400M, designed to meet 61010-1

Model Selector

Product Code	Part Description	Style	Output Voltage (V)	Output Current (A)	Average Output Power (W)	Peak Output Current (A) ⁽⁵⁾	Peak Output Power (W) ⁽⁵⁾
U5Y0031	EFE300M12-5-ECMDL-YT	With Fan	12	25.0	300	33.30	400
U5Y0020	EFE300M12-5-HNMDL-YT	Open Frame	12	25.0	300	33.30	400
U6Y007P	EFE400M-12-5-ECMDL-YT	With Fan	12	33.3	400	44.17	530
U6Y001H	EFE400M-12-5-HNMDL-YT	Open Frame	12	33.3	400	44.17	530
U5Y0064	EFE300M24-5-ECMDL-YT	With Fan	24	12.5	300	16.70	400
U5Y0053	EFE300M24-5-HNMDL-YT	Open Frame	24	12.5	300	16.70	400
U6Y008Q	EFE400M-24-5-ECMDL-YT	With Fan	24	16.67	400	22.08	530
U6Y002J	EFE400M-24-5-HNMDL-YT	Open Frame	24	16.67	400	22.08	530
U5Y0166	EFE300M-48-5-ECMDL-YT	With Fan	48	6.25	300	7.29	350
U5Y0201	EFE300M-48-5-HNMDL-YT	Open Frame	48	6.25	300	7.29	350
U6Y009R	EFE400M-48-5-ECMDL-YT	With Fan	48	8.33	400	9.79	470
U6Y003K	EFE400M-48-5-HNMDL-YT	Open Frame	48	8.33	400	9.79	470

(5) For up to 10s without exceeding Average Output Power rating

Note: The EFE300M is also available with 28V and 50V.

Options

Additional options available. Reference detailed product data sheet on downloadable files section of web page.

Part Description Suffix	Standby "5" or "12"	U Chassis	Cover	Internal Fan	Enable or Inhibit "E" or "T"
-5-ECMDL-YT	5V 2A	Y	Y	Y	Inhibit
-5-HNMDL-YT	5V 2A	N	N	N	Inhibit

Outline Drawing

EFE300M (not -V version)

Pin Connection Tables:

CONNECTION	WIRE COLOR	CONNECTION	
1	NOT CONNECTED	1	STANDBY
2	NOT CONNECTED	2	POWER GOOD
3	NOT CONNECTED	3	+V CH 1
4	NOT CONNECTED	4	-V CH 1
5	NOT CONNECTED	5	+V CH 2
6	NOT CONNECTED	6	-V CH 2
7	NOT CONNECTED	7	+V CH 3
8	NOT CONNECTED	8	-V CH 3
9	NOT CONNECTED	9	+V CH 4
10	NOT CONNECTED	10	-V CH 4

Notes:

- All customer fixings M3
- Maximum Penetration 4.5mm
- Maximum torque 0.9Nm
- All tolerances +/-0.5mm

EFE400M (not -V version)

Pin Connection Tables:

CONNECTION	WIRE COLOR	CONNECTION	
1	NOT CONNECTED	1	EARTH
2	NOT CONNECTED	2	NOT CONNECTED
3	NOT CONNECTED	3	LIVE
4	NOT CONNECTED	4	NEUTRAL

CONNECTION	WIRE COLOR	CONNECTION	
11	NOT CONNECTED	11	STANDBY
12	NOT CONNECTED	12	POWER GOOD
13	NOT CONNECTED	13	+V CH 1
14	NOT CONNECTED	14	-V CH 1
15	NOT CONNECTED	15	+V CH 2
16	NOT CONNECTED	16	-V CH 2
17	NOT CONNECTED	17	+V CH 3
18	NOT CONNECTED	18	-V CH 3
19	NOT CONNECTED	19	+V CH 4
20	NOT CONNECTED	20	+12V FAN

Notes:

- All customer fixings M3
- Maximum Penetration 4.5mm
- Maximum torque 0.9Nm
- All tolerances +/-0.5mm

Connectors are not included with the product. They are available from TDK-Lambda

1 off input connector and 3 crimps are available as part number 94910.
 1 off output connector and 18 crimps are available as part number 94752 (EFE300M)
 1 off output connector and 20 crimps are available as part number 94912 (EFE400M)

Other Medical Products

Vega Series	450 to 900W up to 10 outputs
CSS	40 to 500W Single Output
NV Series	175 to 900W 1U Power Supply 1-8 Outputs

For Additional Information, please visit us.tdk-lambda.com/lp/products/efe-series.htm

