

- Designed for Medical Equipment (BF rated)
- High Efficiency
- 6 in x 3 in footprint
- High Power Density (up to 18W/in³)
- No minimum load
- Fits 1U applications

EFE300M

300 Watts, medical (BF rated)
AC-DC, digital power solution

Key Market Segments & Applications

| | |
|-----------------------------|-------------------------|
| Medical | Broadcast |
| Instrumentation | ATE |
| Automation | Industrial Computing |
| Security | Lifesciences/Laboratory |
| Network Servers and Routers | |

Features and Benefits

Features

- Reinforced isolation
- Full Digital Control
- High Efficiency
- Low Profile
- High Power Density
- Temperature controlled fan option

Benefits

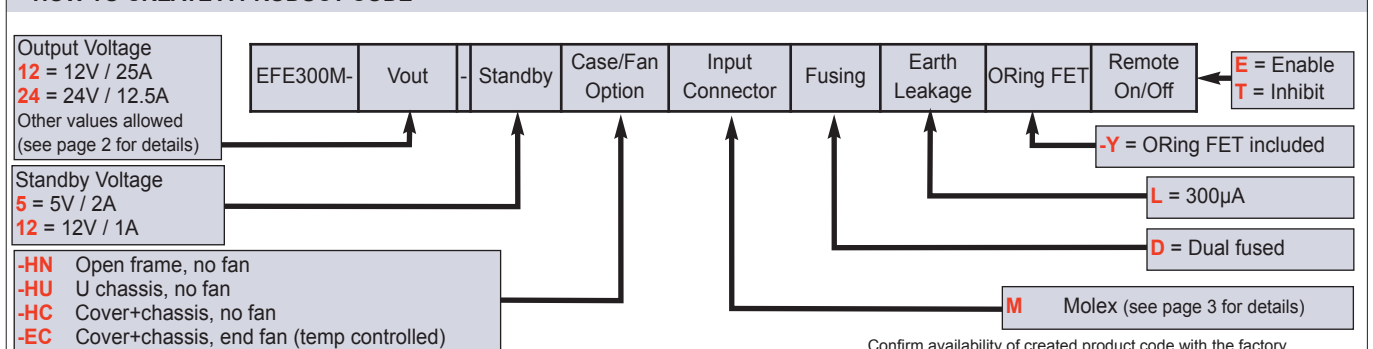
- Simplifies equipment design
- Improves Product Performance
- Minimises heat in system
- Fits 1U applications
- Less Space
- Quieter operation

| INPUT | | | |
|-----------------------|--|-----------------|--|
| Input Voltage | 90 - 264Vac / 120 - 350Vdc | Input Frequency | 45 - 63Hz (440Hz with reduced PFC - consult factory) |
| Input Harmonics | EN61000-3-2 compliant | Power Factor | 0.97 typical |
| Input Fuse | Dual fuses (Live + Neutral) Fast acting (not user accessible) | Inrush Current | <40A at 25°C and 230Vac, (cold start) (meets EN61000-3-3) |
| Earth Leakage Current | 123µA at 120Vac (60Hz), 257µA max at 240Vac (60Hz) Worst case leakage current is less than 300µA at 264Vac, 63Hz (normal condition, 0.5mA Single Fault Condition) | | |

QUICK SELECTOR (Standard models). Additional variants available - see below

| Output | | Units without fan | | Units with end fan |
|-------------|-------------|-----------------------|-----------------------|-----------------------|
| | | Open Frame | Cover + Chassis | Cover + Chassis |
| 12V / 25A | Description | EFE300M-12-5-HNMDL-YT | EFE300M-12-5-HCMDL-YT | EFE300M-12-5-ECMDL-YT |
| | Order code | U5Y0020 | U5Y001Z | U5Y0031 |
| 24V / 12.5A | Description | EFE300M-24-5-HNMDL-YT | EFE300M-24-5-HCMDL-YT | EFE300M-24-5-ECMDL-YT |
| | Order code | U5Y0053 | U5Y0042 | U5Y0064 |

HOW TO CREATE A PRODUCT CODE





| ISOLATION | | | |
|-----------------|------------|--|-----------------------------|
| Input to Output | Reinforced | 4kV (ac), 5.7kV (dc) type tested to 4kVac (equivalent to 5.7kVdc), production tested to 4.3kVdc. | |
| Input to Earth | Basic | 1.5kV (ac), 2.3 kV (dc) | Output to Earth 1500 V (ac) |

| OUTPUT SPECIFICATION | | | |
|-----------------------------|----------------|---|--|
| Output Power | 300W | Continuous | |
| Peak Power | 400W | for 10 seconds (300W RMS) | |
| Total Regulation | better than 4% | Including Line (for 90-264Vac input change), Load (for 0-100% load change) and temperature (0-50°C) | |
| Ripple & Noise | 1.5% | pk-pk, using EIAJ test method & 20MHz bandwidth | |
| Voltage Setting Range | +10% / -5% | To be specified at time of ordering (chosen in 'Output Voltage' part of product code) | |
| Voltage Setting Accuracy | ±1% | at 50% load | |
| Turn on Time | 1.5s max | at 90 Vac & 100% rated output power | |
| Efficiency | 90% | typical. 87% typical if Standby Supply is fully loaded | |
| Hold up | 16ms min | at 90 Vac, 75% load | |
| Min Load | None | | |
| Transient Response | <5% | of set voltage for 50% load change (in 50µs within the range 25 - 100% load) | |
| Recovery | <1ms | for recovery to 2% of set voltage | |
| Short circuit protection | Yes | Auto recovery after removal of short circuit | |
| Over Temperature protection | Yes | Primary - auto recovers, secondary - cycle power to restart | |
| Over Voltage Protection | Yes | Latching, need to cycle ac to restart unit. | |
| Fan supply | 12V / 1A | Available if 'no fan' is specified, otherwise used by PSU fan. | |

| GLOBAL SIGNALS | |
|----------------|--|
| Remote on/off | Enable - TTL logic level low (relative to Standby 0V) enables channel 1 and fan supply Inhibit - TTL logic level low (relative to Standby 0V) inhibits channel 1 and fan supply |
| Standby Supply | 5V / 2A or 12V / 1A, isolated supply, not affected by remote on/off. |
| Power Good | Logic high indicates ac supply is good and Ch1 is within regulation |
| ORing FET | Allows redundant connection of power supplies with no additional diodes required. |

| ENVIRONMENT | |
|-------------------|---|
| Temperature | 0 to 50°C operational, -40°C to 85°C storage (max 12 months). Full load, with 2m/s air blown from input to output (approximately 10CFM) |
| Convection Rating | TBC |
| Derating | 50 to 70°C derate each output by 2.5% per °C |
| Low Temp Startup | -20°C |
| Humidity | 5 - 95% RH non condensing |
| Shock | ±3 x 30g shocks in each plane, total 18 shocks 30g shock = 11ms (+/-0.5msec), half sine Conforms to EN60068-2-27, EN60068-2-47, IEC68-2-27, IEC68-2-47, JIS C0041-1987. Conforms to MIL-STD-810E/F, Method 514.4, Pro I, Cat 1,9 |
| Vibration | Single axis 10 - 500 Hz at 2g (sweep and endurance at resonance) in all 3 planes Conforms to EN60068-2-6, IEC68-2-6 Conforms to MIL-STD-810E, Method 516.5, Pro I, IV, VI |
| Altitude | -200 to 3000 metres operational (-200 to 5000m storage/transportation) |
| Pollution | Degree 2, Material group IIIb |

| IMMUNITY EN61000-6-2:2005 | | | | Criteria |
|---|--------------|---------|---|----------|
| Electrostatic Discharge | EN61000-4-2 | Level 4 | Air discharge 15kV Contact discharge 8kV Not applicable to open frame units | A |
| Electromagnetic Field | EN61000-4-3 | Level 3 | 12V/m | A |
| Fast / Burst Transient | EN61000-4-4 | Level 4 | tested to 4.4kV | A |
| Surge Immunity | EN61000-4-5 | Level 3 | Common mode - 2.2kV Differential - 1.1kV | A |
| Conducted RF Immunity | EN61000-4-6 | Level 3 | 12V | A |
| Power Frequency Magnetic Field | EN61000-4-8 | Level 4 | 30A/m | A |
| Voltage Dips, Variations, Interruptions | EN61000-4-11 | Class 3 | Criteria B for 5 sec interruption Criteria B for 1 cycle interruption | A |
| Ring Wave | EN61000-4-12 | Level 3 | Common mode - 2.2kV Differential - 1.1kV | A |
| Voltage Fluctuations | EN61000-4-14 | Class 3 | | A |



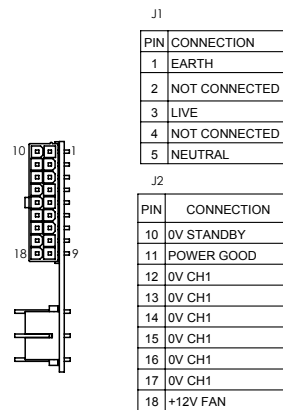
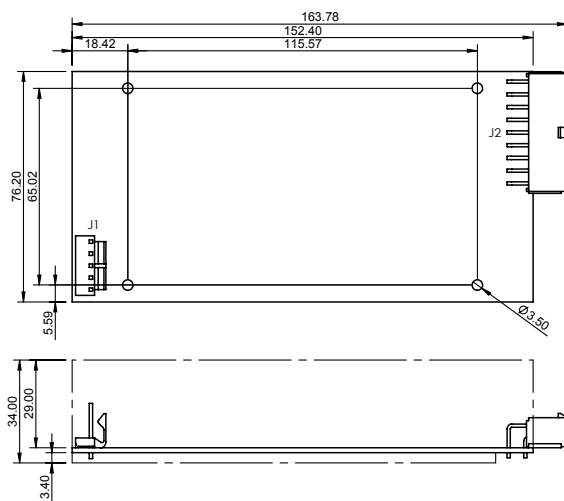
EMISSIONS EN61000-6-3:2007, EN60601-1-2:2001

| | | |
|-------------------------|------------------|---|
| Radiated Electric Field | EN55011, EN55022 | (as per CISPR.11/22) Class B, FCC47 part 15 subpart B see application note for details |
| Conducted Emissions | EN55011, EN55022 | (as per CISPR.11/22) Class B, FCC47 part 15 subpart B |
| Conducted Harmonics | EN61000-3-2 | Class A Class C - (at 100W and above) |
| Flicker | EN61000-3-3 | Compliant - d _{max} only |

SAFETY APPROVALS

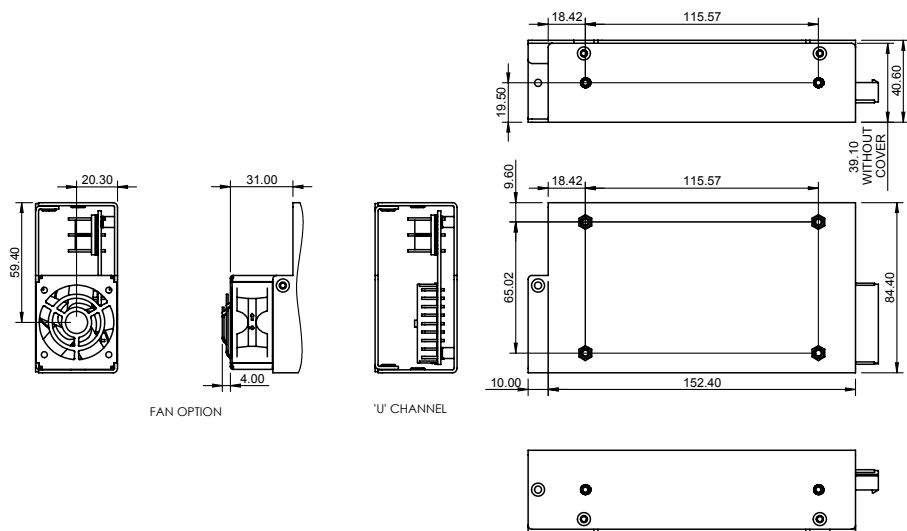
| | Date | Amendments | | Date | Amendments |
|--|-------------------------------------|-------------|--|------|------------|
| EN 60950-1 | 2006 | | IEC 60950-1* | 2005 | |
| UL 60950-1 | 2007 | | CSA 22.2 No 60950-1 | 2007 | |
| EN 61010-1 | 2001 | | IEC 61010-1* | 2007 | |
| EN60601-1 | 1990 | A1, A2, A13 | IEC60601-1* | 2005 | |
| CE Mark | LV Directive 2006/95/EC (EN60950-1) | | | | |
| * CB certificate and Report available on request | | | Check with factory for status of approvals | | |

OUTLINE & CONNECTION DRAWINGS



MATING PARTS (MOLEX OR EQUIVALENT)

| CONNECTOR | HOUSING | CRIMP PIN |
|-----------|------------|------------|
| J1 | 09-50-8051 | 08-52-0113 |
| J2 | 39-01-2185 | 44476-3112 |



Notes 1. All customer fixings M3 2. Maximum Penetration 4.5mm 3. Maximum torque 0.9Nm 4. All tolerances +/-0.5mm



TDK-LAMBDA EMEA

www.emea-tdk-lambda.com



TDK-Lambda France SAS

ZAC des Delaches
BP 1077-Gometz-le-Chatel
91940 LES ULIS
France
Tel: +33 1 60 12 71 65
Fax: +33 1 60 12 71 66
www.fr.tdk-lambda.com



TDK-Lambda Germany GmbH

Karl-Bold-Strasse 40
D-77855 Achern
Tel: +49 7841 666 0
Fax: +49 7841 5000
info.germany@de.tdk-lambda.com
www.emea.tdk-lambda.com



TDK-Lambda Italy S.r.l.

Via dei Lavoratori 128/130
20092 Cinisello Balsamo (MI)
Italy
Tel: +39 02 61 29 38 63
Fax: +39 02 02 61 29 09 00
info.Italia@lambda-europe.com
www.it.tdk-lambda.com



TDK-Lambda Austria Sales Office

Aredstrasse 22
2544 Leobersdorf
Tel: +43 2256 655 84
Fax: +43 2256 645 12
info.germany@de.tdk-lambda.com
www.emea.tdk-lambda.com



TDK-Lambda Scandinavia Sales Office

PO Box 546
Rallarvägen 41
184 40 Åkersberga
Sweden
Tel: +46 854 084 990
Fax: +46 854 066 096
info.germany@de.tdk-lambda.com
www.emea.tdk-lambda.com



TDK-Lambda UK Ltd.

Kingsley Avenue
Ilfracombe
Devon EX34 8ES
United Kingdom
Tel: +44 (0) 12 71 85 66 66
Fax: +44 (0) 12 71 86 48 94
www.uk.tdk-lambda.com



Nemic Lambda Ltd.

Kibbutz Givat
Hashlosha 48800
Israel
Tel: +9 723 902 4333
Fax: +9 723 902 4777
www.nemic.co.il



TDK-Lambda Americas Inc.

Low Power
3055 Del Sol Blvd
San Diego CA 92154
USA
Tel: +1 800-LAMBDA-4 or 1-800-526-2324
Tel: +1 619-575-4400
Fax: +1 619-429-1011
www.us.tdk-lambda.com/lp/



TDK-Lambda Corporation

5F Dempa Bldg. 1-11-15
Higashigotanda
Shinagawa-Ku
Tokyo 141-0022
Japan
Tel: +81 3 3447 4693
Fax: +81 3 3447 4750
www.jp.tdk-lambda.com

High Power
405 Essex Road Neptune NJ 07753
USA
Tel: +1 732 922 9300
Fax: +1 732 922 1441
www.us.tdk-lambda.com/hp/

LOCAL DISTRIBUTION

