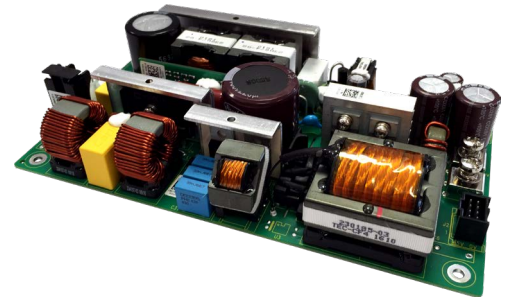


## 500W, Configurable, Class I or II AC-DC, power supply



Features	Benefits
• BF ready medical isolation (MOPP)	Eases design into systems (including BF)
• Class I / II with level B EMC	Eliminates need for additional EMC filters
• Defibrillator proof	Suitable for BFD applications <small>refer to technical support</small>
• Low airflow requirement	Allows quieter system design
• 5 year warranty	Low cost of ownership

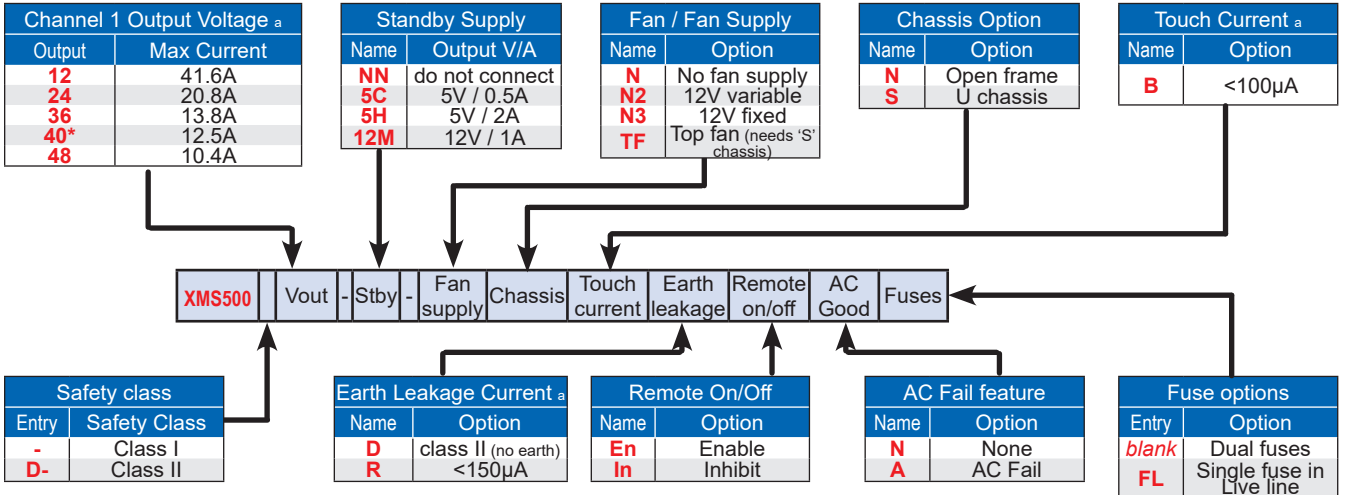
Input			
Input Voltage	90-264Vac (100-240Vac nominal) able to withstand input voltages of up to 300Vac for up to 5 seconds	Input Frequency	47 - 63Hz
Input Harmonics	EN61000-3-2 compliant	Power Factor	0.95 min at 110Vac input
Input Fuse	Dual fusing (single fuse optional) Fast acting (not user replaceable)	Inrush Current	<40A at 25°C and 264Vac (cold start) (meets EN61000-3-3).
Earth Leakage Current	specified at 264Vac (63Hz). see 'How To Create A Product Description' for options		

Quick Selector (Standard models). Additional variants available - see 'How To Create A Product Description'						
Output		Cover / Chassis / Fan type	Class I		Class II	
Volts	Current		Product Description	Order code	Product Description	Order code
12V	41.6A	Open Frame	XMS500-12-5H-N2NBRInA	XMS5001M	XMS500D-12-5H-N2NBDInA	XMS50024
		U chassis	XMS500-12-5H-N2SBRInA	XMS5003X	XMS500D-12-5H-N2SBDInA	XMS5004F
		Top fan	XMS500-12-5H-TFSBRInA	XMS5005Y	XMS500D-12-5H-TFSBDInA	XMS5006G
24V	20.8A	Open Frame	XMS500-24-5H-N2NBRInA	XMS50070	XMS500D-24-5H-N2NBDInA	XMS5008H
		U chassis	XMS500-24-5H-N2SBRInA	XMS50091	XMS500D-24-5H-N2SBDInA	XMS500BN
		Top fan	XMS500-24-5H-TFSBRInA	XMS500C6	XMS500D-24-5H-TFSBDInA	XMS500DP
36V	13.8A	Open Frame	XMS500-36-5H-N2NBRInA	XMS500FR	XMS500D-36-5H-N2NBDInA	XMS500G8
		U chassis	XMS500-36-5H-N2SBRInA	XMS500HS	XMS500D-36-5H-N2SBDInA	XMS500JT
		Top fan	XMS500-36-5H-TFSBRInA	XMS500KB	XMS500D-36-5H-TFSBDInA	XMS500LV
48V	10.4A	Open Frame	XMS500-48-5H-N2NBRInA	XMS500MC	XMS500D-48-5H-N2NBDInA	XMS500NW
		U chassis	XMS500-48-5H-N2SBRInA	XMS500PX	XMS500D-48-5H-N2SBDInA	XMS500RY
		Top fan	XMS500-48-5H-TFSBRInA	XMS500SG	XMS500D-48-5H-TFSBDInA	XMS500T0

Standard models include:-  
 '5H' standby (5V / 2A), 'N2' fan supply (12V / 0.25A for 12V main output versions, 12V / 0.15A all others - variable supply voltage) [except on Top fan variants], 'B' touch current (<100µA),  
 'In' remote on/off (inhibit) and 'A' AC Fail. Class I standard models include 'R' earth leakage (<150µA).

Isolation							
Input to Output	Reinforced	2 x MoPP, 5.7kVdc, 4kVac		Output to Earth (class I only)	Basic	1 x MoPP, 1.5kVac, 2.3kVdc	
Input to Earth (class I only)	Basic	1 x MoPP, 1.5kVac, 2.3kVdc		Output to Earth (class I only)	Basic	1 x MoPP, 1.5kVac, 2.3kVdc	

**How To Create A Product Description**



<sup>a</sup> - additional variants available, consult sales office

\* Confirm availability of required product with sales office

**Output Specification**

Output Power	500W	Continuous with specified airflow or top fan.
Total Regulation	better than 2%	Including Line regulation of 0.1% (for 90-264Vac input change), Load regulation of 1% (for 0-100% load change) and thermal regulation of 0.02%/°C (0-50°C)
Ripple & Noise	1%	pk-pk, using EIAJ test method & 20MHz bandwidth
Voltage Setting Accuracy	±1%	at 50% load
Turn on Time	1.0s max	at 90 Vac & 100% rated output power
Efficiency	up to 92%	At 230Vac, 100% load
Hold up	16ms	minimum at 100% load 20ms holdup option available, consult sales office for details.
Min Load	None	
Transient Response		
Deviation	<5%	of set voltage for 25% to 100% load change
Recovery time	<2ms	for recovery to 2% of set voltage
Short circuit protection	Yes	Hiccup mode, auto recovery after removal of short circuit
Over Temperature protection	Yes	Latching, need to cycle ac to restart unit.
Over Voltage Protection	Yes	Latching, need to cycle ac to restart unit.

**Signals**

Remote on/off J2, pin 5	Enable (-En option) - Connect to Standby + to enable channel 1. Open circuit or 0V to inhibit. Inhibit (-In option) - Connect to Standby + to inhibit channel 1. Open circuit or 0V to enable. Maximum current required = 2mA for 5V standby supply, 7mA for 12V standby supply
AC Fail	Provides ac fail functionality. Logic high = ac fail, 0V = ac good.

**Additional Outputs**

Fan supply options	N	None
	N2	12V / 0.25A for 12V main output versions, 12V / 0.15A all others. Output voltage varies with heat sink temperature. See application note for details.
	N3	12V / 0.25A for 12V main output versions, 12V / 0.15A all others. Constant voltage.
	TF	Top fan (fan supply not for customer use as used by factory fitted top fan)
Standby Supply options	NN	None
	5C	5V / 0.5A
	5H	5V / 2A
	12M	12V / 1A

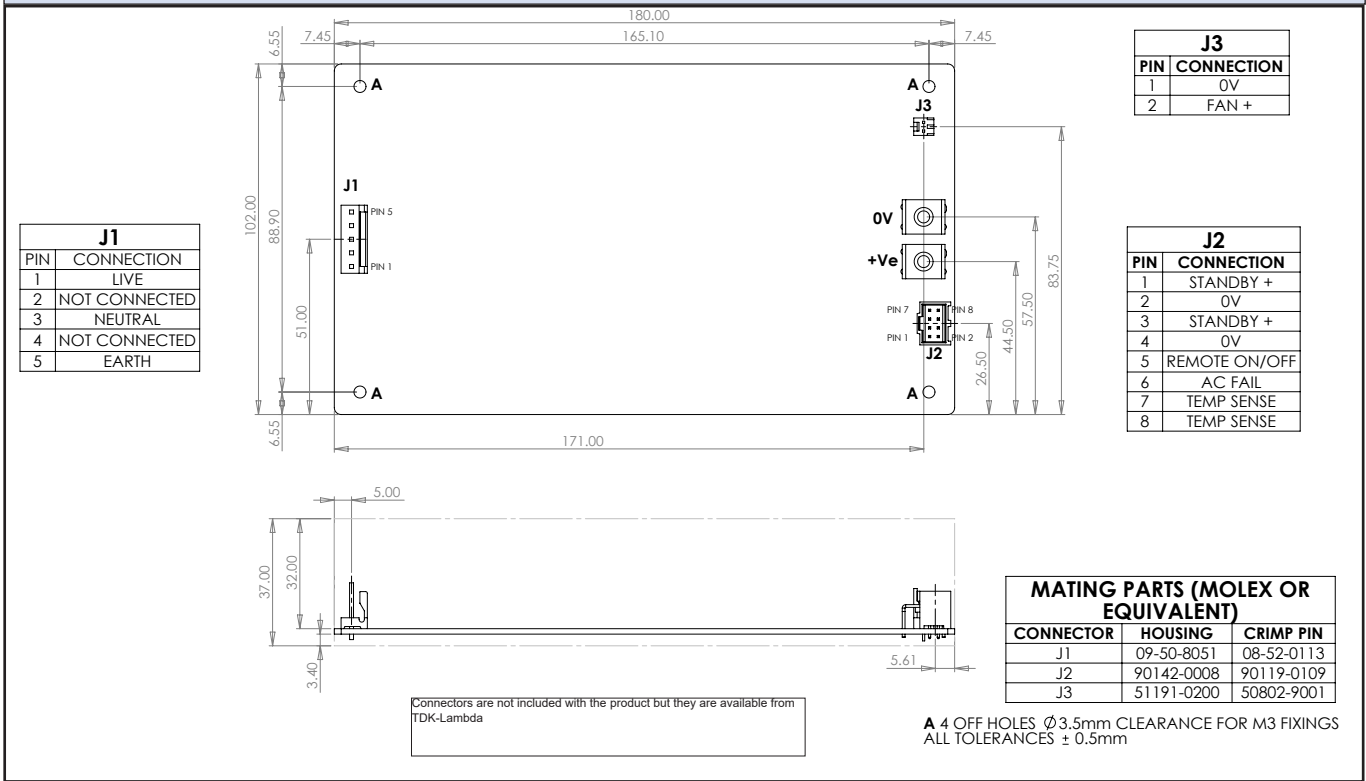
Environment	
Temperature	0°C to 50°C operational Full load with top fan (TF) fitted or 1m/s air blown (approximately 10 CFM). See handbook for maximum component temperatures. Convection cooled operation is possible by maintaining the specified component temperatures. Storage -40°C to 85°C (70°C for Top Fan versions).
Derating	50°C to 70°C, derate 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-810G, Method 516.6, Pro IV, VI
Vibration	Single axis 10 - 200 Hz at 2g (sweep and endurance at resonance) in all 3 planes Conforms to EN60068-2-6, IEC68-2-6 Conforms to MIL-STD-810G, Method 514.4, Pro I, Cat 1,9
Altitude	-200 to 5000 metres operational (3000m for 60601-1) (-200 to 5000m storage/transportation)
Pollution	Degree 2, Material group 3

Emissions EN61000-6-3		
Radiated Emissions	EN55011, EN55032	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B see application note for details
Conducted Emissions	EN55011, EN55032	(as per CISPR.11/22) Class B, FCC47 part 15 subpart B
Conducted Harmonics	EN61000-3-2	Class A
Flicker	EN61000-3-3	Compliant - $d_{max}$ only

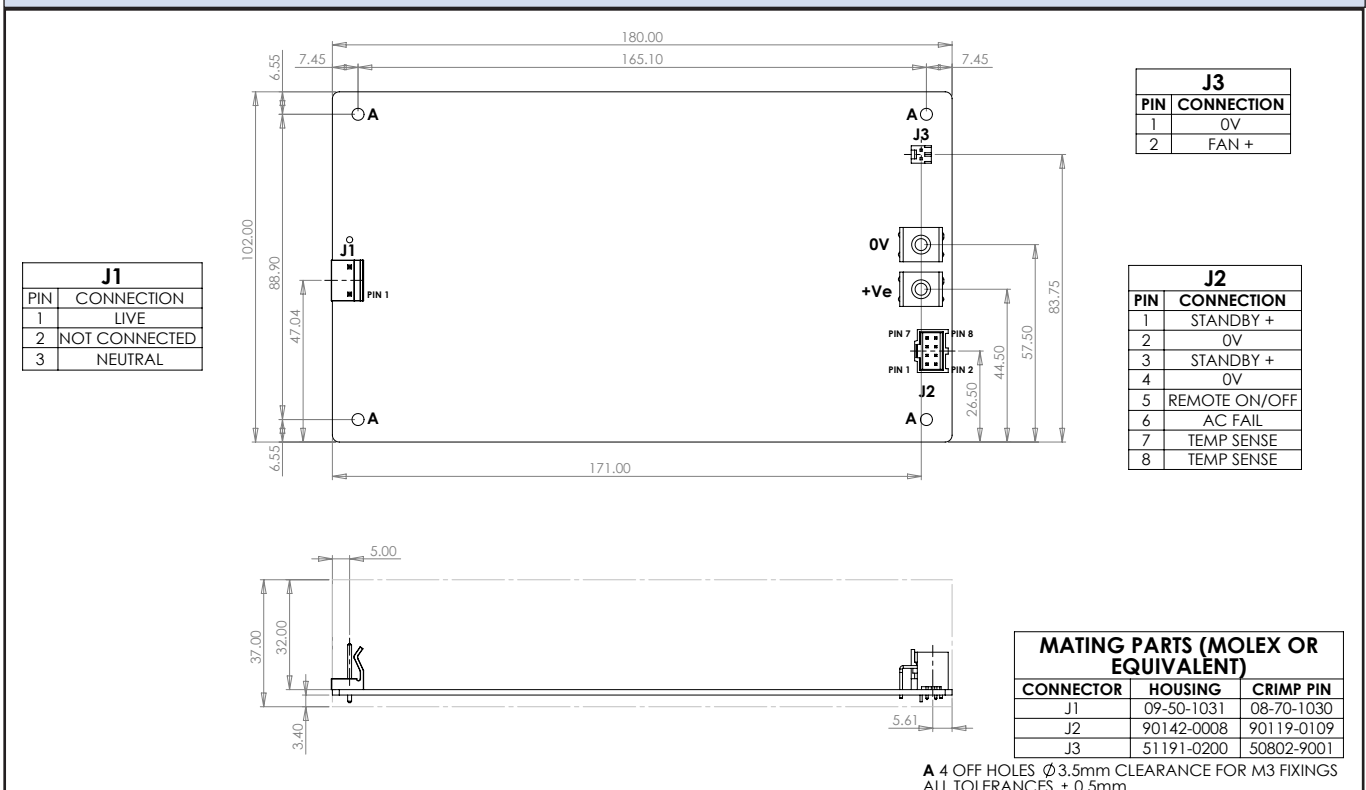
Immunity EN61000-6-2:2005				Criteria
Electrostatic Discharge	EN61000-4-2	Level 4	Only when fitted in a chassis Level 3 on I/O / signal pins	A
Electromagnetic Field	EN61000-4-3	Level 3		A
Fast / Burst Transient	EN61000-4-4	Level 4		A
Surge Immunity	EN61000-4-5	Level 3		A
Conducted RF Immunity	EN61000-4-6	Level 3		A
Power Frequency Magnetic Field	EN61000-4-8	Level 3		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		B
Voltage Fluctuations	EN61000-4-14	Class 3		A

Approvals / Accreditations	
IEC/EN 62368-1, UL62368-1 / CSA 22.2 No 62368-1	File E135494
IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1	File E135494
IEC/EN 60601-1, UL/CSA 60601-1, ANSI/AAMI ES60601-1 CAN/CSA-C22.2 No 60601-1-08	File E349607
IEC/EN 61010-1 (designed to meet)	
IEC/EN/UL/CSA 60065 (designed to meet)	
CE Mark (EN62368-1)	Low Voltage Directive (LVD)
UKCA (EN62368-1)	Electrical Equipment (Safety) Regulations, electromagnetic compatibility (EMC) and Restriction of Hazardous Substances (RoHS)
CB certificate and Report available on request	<i>Please check with technical sales for status of approvals</i>
Designed and manufactured under the control of ISO9001 and ISO13485 (including risk management).	

**Outline & Connection Drawings - Class I (with earth)**

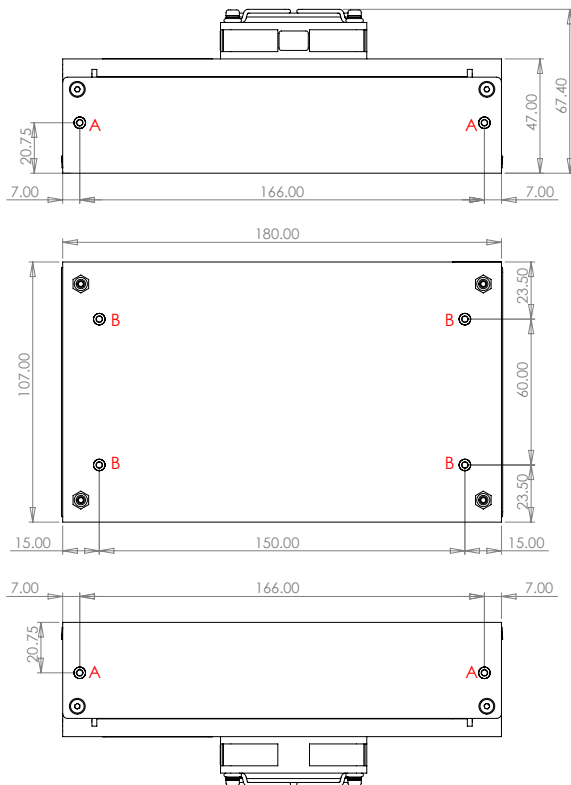


**Outline & Connection Drawings - Class II product**

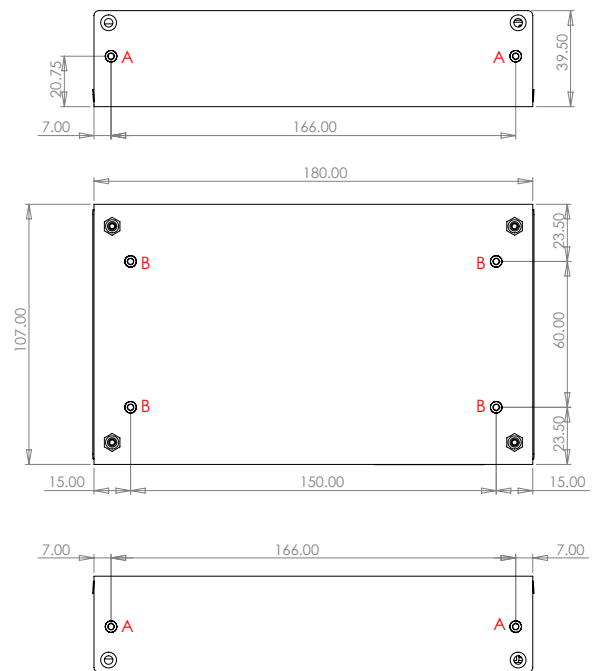


## Outline Drawings

### STANDARD CHASSIS + TOP FAN



### STANDARD CHASSIS



**A HOLES:** 4 OFF FIXING HOLES FOR M3, MAXIMUM PENETRATION 3mm.  
**B HOLES:** 4 OFF FIXING HOLES FOR M3 MAXIMUM PENETRATION 2.4mm  
 MAXIMUM TORQUE 0.5-0.6Nm  
 ALL TOLERANCES  $\pm 0.5$ mm

All specifications at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.



**TDK-Lambda France SAS**  
 Tel: +33 1 60 12 71 65  
 ttf.fr.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/fr



**Italy Sales Office**  
 Tel: +39 02 61 29 38 63  
 ttf.it.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/it



**Netherlands**  
 ttf.nl.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/nl



**TDK-Lambda Germany GmbH**  
 Tel: +49 7841 666 0  
 tlg.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/de



**Austria Sales Office**  
 Tel: +43 2256 655 84  
 tlg.at.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/at



**Switzerland Sales Office**  
 Tel: +41 44 850 53 53  
 tlg.ch.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/ch



**Nordic Sales Office**  
 Tel: +45 8853 8086  
 tlg.dk.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/dk



**TDK-Lambda UK Ltd.**  
 Tel: +44 (0) 12 71 85 66 66  
 tlu.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/uk



**TDK-Lambda Ltd.**  
 Tel: +9 723 902 4333  
 tli.powersolutions@tdk.com  
 www.emea.lambda.tdk.com/il-en



**TDK-Lambda Americas**  
 Tel: +1 800-LAMBDA-4 or 1-800-526-2324  
 tla.powersolutions@tdk.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  
 tlc.powersolutions@tdk.com  
 www.lambda.tdk.com.cn



**TDK-Lambda Singapore Pte Ltd.**  
 Tel: +65 6251 7211  
 tls.marketing@tdk.com  
 www.sg.lambda.tdk.com



**TDK India Private Limited, Power Supply Division**  
 Tel: +91 80 4039-0660  
 mathew.philip@tdk.com  
 www.sg.lambda.tdk.com

