

OUTPUT VOLTAGES (single output modules)						OUTPUT VOLTAGES (twin output modules)									
Module	Adjustment Range (Volts)			Current (Amps)	Slots	Module	V1 Adjustment Range (Volts)			Current	V2 Adjustment Range (Volts)			Current (Amps)	Slots
A	4.5	-	5.5	60	2	E	5	-	16	8	5	-	16	8	1
AA	4.5	-	6.2	60	2	EB	4.5	-	5.5	9	4.5	-	5.5	9	1
B	4.5	-	5.5	25	1	EQ	4.5	-	5.5	9	2.7	-	3.9	9	1
BB	4.5	-	6.5	25	1	H	18	-	32	5 _c	18	-	32	5 _c	1
C	5	-	16	16 _a	1	P	18	-	29	5	5	-	16	8	1
D	18	-	29	8	1		Notes: a) 12A max above 12V b) Derate output current by 0.25A / V above 40V c) 1A max above 29V								
F	9	-	15.5	33	2										
G	17.5	-	29	25	2										
J	30	-	48	10 _b	2										
K	18	-	29	15	2										
L	1.8	-	3.2	25	1										
M	5	-	16	8	1										
N	18	-	32	5 _c	1										
Q	2.7	-	3.9	25	1										
R	2.7	-	3.9	60	2										
S	2.5	-	5.7	85	2										
T	1.8	-	3.2	60	2										
U	10	-	21	16	1										
W	4.5	-	5.5	15	1										
Z	4.5	-	5.5	25	1										

Isolation		
Input to Output	Reinforced	2 x MOOPs (3rd edition 60601) - 'LL', 'RL' and 'TL' variants of CA1000 only 4.3kVdc
Input to Earth	Basic	2.3kVdc
Output to Earth / Output to Earth		500Vdc

Output Specification		
Voltage / Current	See output voltages table	
Turn on time	1.5s max	at 90Vac (150Vac for CA1500) and 100% rated output power
Rise time	<50ms	to 90% of voltage, monotonic rise above 10%
Turn on overshoot	<5% or 250mV	Load type dependent, no overshoot with resistive load
Efficiency	75%	typical at 230Vac & 100% rated power, configuration dependent
Hold up	13ms min	at 90Vac and 100% rated power (8ms for CA1500 at 207Vac & 100% rated power)
Ripple and Noise	<2% or 100mV	pk-pk, using EIAJ test method & 20MHz bandwidth
Voltage Accuracy	<1%	of set voltage
Remote Sense	Yes	standard on single output modules
Minimum Load	No	on any output
Temperature Coefficient	<0.02%	of rated voltage per °C
Load Regulation	<0.5% or 25mV	for 0-100% load change, with sense connected (<2% without)
Line Regulation	<0.5%	for 90-264Vac input change (210 - 264Vac for CA1500)
Cross Regulation	<0.2%	for 100% load change on any output
Transient Response	<10%	of set voltage for 50% load change (above 25% load)
Recovery	500µs	for recovery to 1% or 100mV of set voltage (1000µs for 'S' module)
Over Voltage Protection	Standard	for all outputs
Over Current Protection	Standard	for all outputs
Short Circuit Protection	<150%	of rated current, when output voltage <1%
Over Temperature Protection	Yes	shuts down all outputs. Cycle ac off/on to reset Shutdown temperature varies according to ambient, output power and input voltage.

Environment	
Temperature	0°C to 70°C operational, -40°C to 70°C storage (max 12 months).
Derating	50°C to 70°C derate total output power and each output current by 2.5% per °C
Low Temp Startup	-20°C
Humidity	5 - 95% RH non condensing
Shock	3000 shocks, each of 10g (16ms) half sine
Vibration	10 - 200 Hz at 1.5g
Altitude	3000 metres operational (5000m non operational)
Pollution	Degree 2, Material group IIIb
IP Rating	IP 10

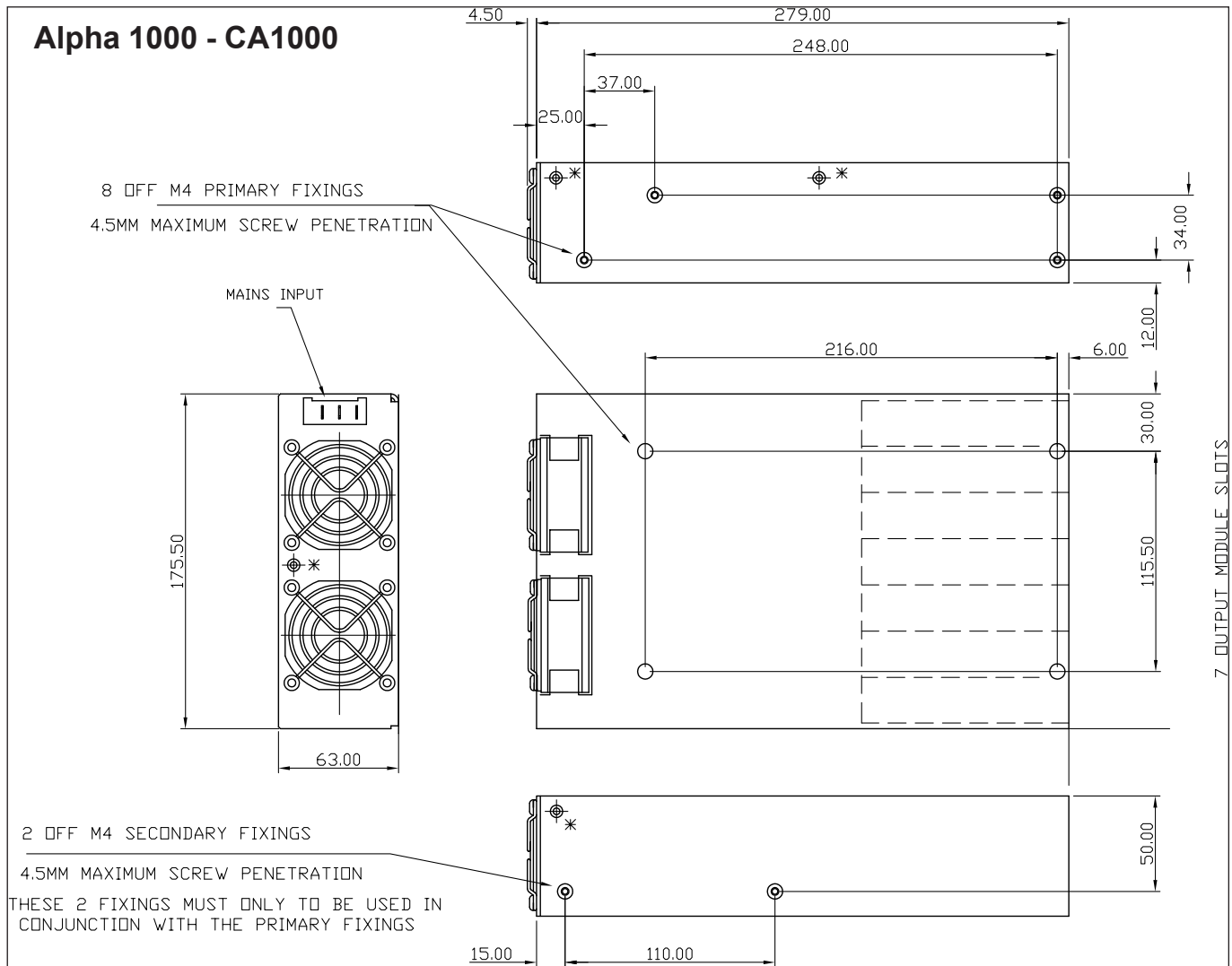
Product, Generic & Collateral Standards			
Low Voltage Power Supply, EMC	EN61204-3:2001	Compliant to High Severity Immunity	Class A emissions
Medical Electrical Equipment, EMC	EN61601-1-2:2001	Compliant	Class A emissions
Immunity for residential, commercial and light industrial environments	EN61000-6-1:2001	Compliant	
Immunity for industrial environments	EN61000-6-2:2001	Compliant	
Emissions for industrial environments	EN61000-6-4:2001	Compliant	

Emissions EN61000-6-3:2007, EN60601-1-2:2007		
Radiated Electric Field	EN55011, EN55022	(as per CISPR.11/22) Class A see application note for details. Only for 'S' type leakage variants.
Conducted Emissions	EN55011, EN55022	(as per CISPR.11/22) Class A Only for 'S' type leakage variants.
Conducted Harmonics	EN61000-3-2	Class A
Flicker	EN61000-3-3	Compliant - d _{max} only

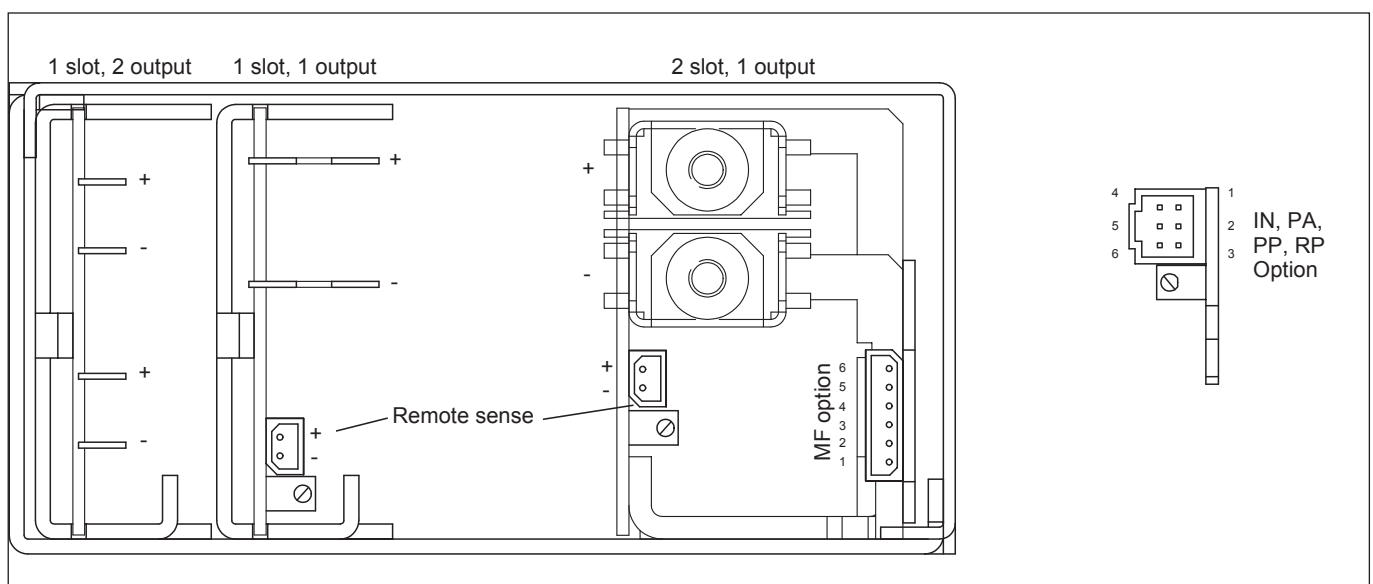
Immunity EN61000-6-2:2005, EN60601-1-2:2007				Criteria
Electrostatic Discharge	EN61000-4-2	Level 4	Air discharge 15kV, Contact discharge 8kV	A
Electromagnetic Field	EN61000-4-3	Level 3	12V/m	A
Fast / Burst Transient	EN61000-4-4	Level 4	ac input tested to 4kV dc output tested to 2kV Tested at 5kHz and 100kHz	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		A B for 5s interruptions
Voltage Fluctuations	EN61000-4-14	Class 3	For 100 - 240Vac nominal	A

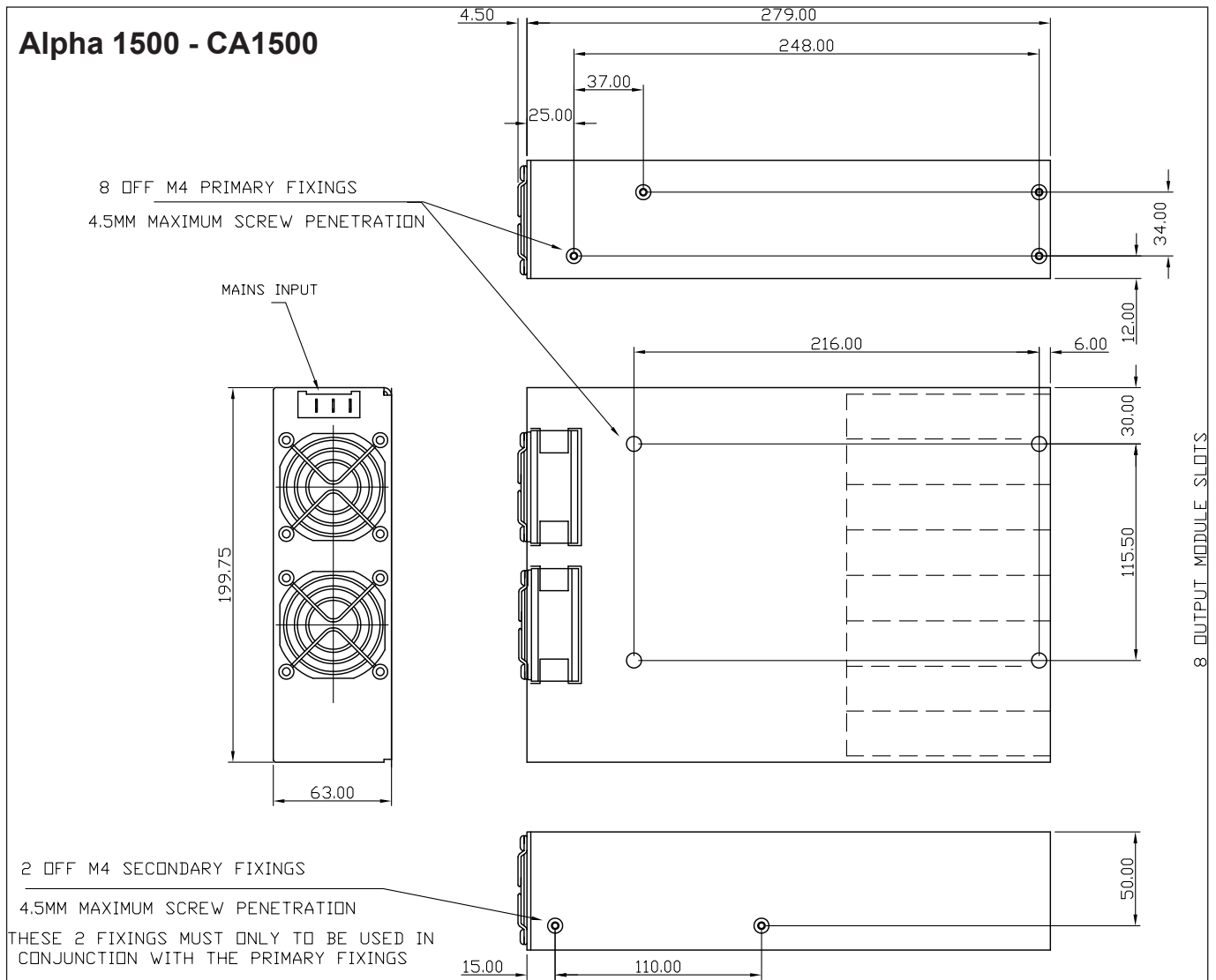
Approvals / Accreditations	
IEC/EN 60950-1, UL60950-1 / CSA 22.2 No 60950-1	File E135494
IEC/EN 60601-1, UL/CSA 60601-1, ANSI/AAMI ES60601-1 CAN/CSA-C22.2 No 60601-1-08	File E349607 (not CA1500, only for LL, RL and TL leakage variants)
CE Mark (EN60950-1)	LV Directive 2006/95/EC
CB certificate and Report 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).	

Alpha 1000 - CA1000



Option Connections





Option Connections					
Pin	IN option	PA option	PP option	RP option	MF option
1	n/c	+ Sense	+ Sense	+ Sense	Inhibit (low)
2	Module Good	Module Good	n/c	- Sense	5V supply
3	Inhibit	Star point	n/c	Control 2	Power Fail
4	n/c	- Sense	- Sense	n/c	0V
5	- Power	- Power	n/c	Control 1	Inhibit (high)
6	- Power	Star point	n/c	n/c	n/c



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