

5" x 3" x 1.1"

Low profile

600W

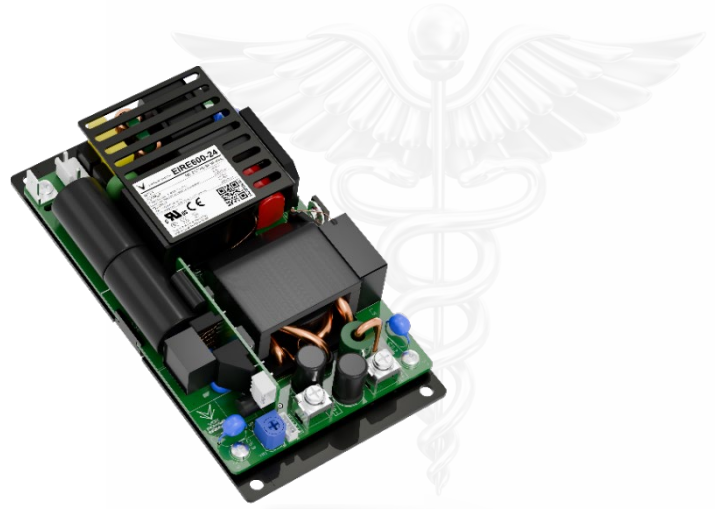
Fan cooled / Conduction cooled (115V_{AC})

450W

Convection cooled (115V_{AC})

BF Rated

Medical



Cool it your way. Power without compromise.

The EIRE600 series of open frame power supplies deliver 600 Watts of power in a miniature 5 x 3 x 1.1-inch package. The EIRE600 series is the ultimate solution for medical, home healthcare, industrial, household appliance or laboratory applications which require a high efficiency, BF rated, leading edge technology power solution with Class I or II installation capability. The EIRE600 series is designed to be a high reliability power solution which are produced in redundant minimum touch manufacturing locations. Standard output voltages of 12V, 24V, 36V and 48V are available, all of which have a wide adjustment range. The series includes internal dual line fusing, remote sensing, AC_OK signal, a 0.5A auxiliary fan supply, a 5V/2A output available for the user and protections against over-voltage, over-current, short circuit and over-temperature as standard. The series is approved to the latest medical (IEC/UL60601-1 edition 3.2) and industrial (IEC/UL62368-1 edition 3) standards. EMC emissions and immunity exceed the requirements of EN55035 and EN55032 class B and IEC/EN/UL60601-1-2 Edition 4.

MAIN FEATURES & BENEFITS



MEDICAL



INDUSTRIAL



COMM



LAB & ANALYSIS



HOUSEHOLD



3 YEAR WARRANTY

- | | | |
|--|---|---|
| <ul style="list-style-type: none"> 5" x 3" x 1.1" footprint 600W continuous output power 600W forced air or conduction cooled (115V_{AC}) and up to 450W convection cooled (115V_{AC}) 125% peak power (3 seconds) | <ul style="list-style-type: none"> Fan-less silent operation Class I or II installation Wide operating temperature range (-40°C to +85°C, Deratings apply) AC_OK signal 12V/0.5A auxiliary fan supply and 5V/2A user bias supply | <ul style="list-style-type: none"> Low EMC emissions (EN55032:2020 Class B) IEC/EN/UL60601-1 Ed. 3.2 (Medical Safety) IEC/EN/UL62368-1 Ed. 3 & 4 (Industrial Safety) IEC/EN/UL60601-1-2 Ed. 4 (Medical EMC) |
| <ul style="list-style-type: none"> Standard output voltages 12V, 24V, 36V & 48V Wide input voltage range (85V_{AC} – 264V_{AC}) Wide output voltage adjust range High efficiency (Up to 96%) Low standby power (0.6W active, 0.2W inhibited) Low leakage & touch current (<100uA) | <ul style="list-style-type: none"> Remote sensing Holdup (14mS 600W, 20mS 400W) Start into large capacitive load Operating altitude up to 5000m BF rated output | <ul style="list-style-type: none"> CE compliant RoHS3 & REACH compliant High reliability design 3-year warranty World class technical support Market leading technology |



COMPLIANT



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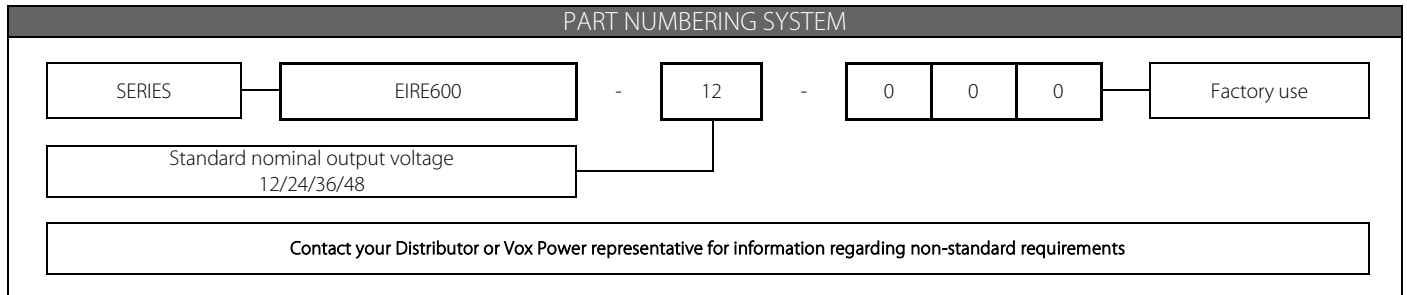
COMPLIANT



VERIFIED

MODEL SELECTION & ORDERING

Model	V _{NOM} (V)	V _{MIN} (V)	V _{MAX} (V)	I _{RATED} ⁽¹⁾ (A)	P _{RATED} ⁽²⁾ (W)	P _{PEAK} ⁽³⁾ (W)	V _{OVP} (%V _{NOM})	I _{OC} (%I _{RATED})	Efficiency ⁽⁴⁾ (%)
EIRE600-12	12	11.2	13.3	50	600	750	135	>130	94.7
EIRE600-24	24	22.4	27.1	25	600	750	135	>130	95.7
EIRE600-36	36	33.6	40.7	16.7	600	750	135	>130	96.2
EIRE600-48	48	44.7	54.2	12.5	600	750	135	>130	96.2
Notes	- Maximum continuous current. Do not exceed even when output voltage setting is below nominal. - Fan and conduction ratings. Refer to graphs for appropriate deratings. 3 seconds, 25% Duty. Average power $\leq P_{RATED}$ (Mains voltage and thermal deratings apply where appropriate). - V_{in} = 230V_{AC}, V_o = V_{NOM}, 100% load.								



SPECIFICATIONS

All specifications are measured @ T_A = 25°C, rated input & rated load unless otherwise stated)

SPECIFICATIONS					
Parameter	Details	Min	Typical	Max	Units
AC Input Voltage	Nominal range is 100V _{RMS} to 240V _{RMS} . DC voltage not allowed.	85		264	V _{RMS}
AC Input Frequency			50-60		Hz
Input Current	600W output at 115 V _{RMS} input.			6	Amps
Input Current Limit			8		Amps
Inrush Current	230V _{RMS} , 25°C (cold start).		30		Amps
Fusing	Live and Neutral lines fused (T8A/250V).			8	Amps
Efficiency	230V _{RMS} . Averaged among all models at 25%, 50%, 75% and 100% load. See graphs in User Manual.		95.0		%
Power Factor	230V _{RMS} , 600W.		0.99		
Holdup	600Watts, nominal output voltage at 115V _{RMS} input. 400Watts, nominal output voltage at 115V _{RMS} input.	12 18	14 20		mS mS
Standby Power Consumption	Output Inhibited. 230V _{RMS} . Compliant with ErP Lot 6 Off and Standby Modes Output ON. 230V _{RMS} . Compliant with ErP Lot 6 Standby Mode (with display).		0.2 0.6	0.25 1	Watts
Continuous Output Power	De-rate linearly from 600Watts at 115V _{RMS} to 420Watts at 85V _{RMS} .			600	Watts
Peak Output Power	3 seconds. Deratings apply.			750	Watts
Output Voltage	All Models. Initial Setting.	-1		1	%V _o
Load & Line Regulation ⁽³⁾	All Models. Measured at sense lines.	-50		50	mV
Ripple & Noise ⁽²⁾	12V Model. 20MHz BW, V _{PK-PK} . All other Models. 20MHz BW, V _{PK-PK} .			1.5 1	%V _o
Minimum Load	All Models.			0	Watts
Transient Response	25% to 75% I _{RATED} , 1A/uS. Recovery to within 10% of V _o .			6 1.5	%V _o mS
Turn on Rise Time	All Models. 10% to 70% of V _o .		3		mS
Turn on Delay	All Models, All V _{IN} , All loads.		450		mS
Temperature Coefficient	All Models.	-0.02		0.02	%V _o /°C
Over Current Protection	All Models. Auto Restart.		130		%I _{RATED}
Over Voltage Protection	All Models. Auto Restart.		135		%V _{NOM}
Over Temperature Protection	All Models. Auto Restart. Various component temperatures.		125		°C
5V Bias Supply Output Voltage	Internally referenced to main output's V _{OUT} .	4.85	5	5.15	V
5V Bias Supply Output Current	All Models. Deratings apply (see Power Ratings graphs).	0		2.0	A
5V Bias Supply Over Power Protection	Triggering this protection turns the whole power supply OFF. Auto Restart.		12		W
Inhibit Signal	Low Input level. 10kΩ pull-down impedance. High Input level. 10kΩ pull-down impedance.	0 3.3	5.0	1.0 6.0	V
Fan Supply ⁽³⁾	Voltage (All Models). Current (All Models) – Fan cooled. Current (All Models) – Conduction cooled. Current (All Models) – Convection cooled.	10.8 0 0 0		15.1 0.5 0.2 0.2	V A A A
AC_OK Signal	Voltage (Applied). Current (Sink only). Warning time (600W).			12 0.5	V mA
Remote Sense	Compensation voltage (positive and negative). Internal resistance to terminals. Offset to terminals (positive and negative combined).			0.75 100 100	V Ω mV
Reliability ⁽¹⁾	All Models.		1.1		FPMH
Warranty	T _{AMBIENT} ≤ 50°C, 18.2 CFM. Standard terms and conditions apply.			3	Years
Size	127 (L) x 76.2 (W) x 27.9 (H). See diagram for tolerance details.				mm
Weight	390				Grams
Notes	30°C ambient, 100% load, Fan cooled. SR332 Issue 2 Method I, Case 3, Ground, Fixed, Controlled To ensure reliability, component temperatures must be maintained below recommended levels in the end application. - Up to 3% for 12V or 2% for all other models in burst mode with no external capacitance. - Main output loaded >10%				

SAFETY SPECIFICATIONS

Parameter	Details	Min	Typical	Max	Units
Isolation Voltages	Input to Output (2 MOPP) ⁽¹⁾ Input to Functional Earth (1 MOPP) Output to Functional Earth (1 MOPP)			4000 2000 1500	V _{AC} V _{AC} V _{AC}
Insulation resistance (500V _{DC})	Input to Output, Input to Functional Earth, Output to Functional Earth	50			MΩ
Earth Leakage Current (Input to Functional Earth)	NC/SFC (Class I), 264Vac, 63Hz, 25°C.		255/429		μA
Touch Leakage Current (Input to Functional Earth)	NC (Class I/Class II), 264Vac, 63Hz, 25°C SFC (Class I/Class II), 264Vac, 63Hz, 25°C		39/178 178/306		μA
Patient Leakage Current (Output to Earth)	NC (Class I/Class II), 264Vac, 63Hz, 25°C SFC (Class I/Class II), 264Vac, 63Hz, 25°C		40/86 86/189		μA
Notes 1. Use DC equivalent voltage to test assembled unit. 2. NC = Normal Condition, SFC = Single Fault condition					

INSTALLATION SPECIFICATIONS

Parameter	Details	Parameter	Details
Equipment class	I or II ⁽¹⁾	Flammability Rating	94V-2
Overvoltage category	II	Ingress protection rating	IP10
Material Group	IIb (indoor use only)	Intended usage environment	Home Healthcare/Industrial/Home Appliance/Laboratory
Pollution degree	2		
Conditions of acceptability may apply. See UL report.			

ENVIRONMENTAL SPECIFICATIONS

Parameter	Details	Non-Operational		Operational		Units
		Min	Max	Min	Max	
Air Temperature	Operational limits subject to appropriate de-ratings	-40	+85	-40 ⁽¹⁾	85	°C
Humidity	Relative, non-condensing	5	95	5	95	%
Altitude		-200	5000	-200	5000 ⁽²⁾	m
Shock	IEC60068-2-27: Half sine, 3 axes, 3 positive & 3 negative.		50, 11		30, 18	g, mS
Vibration	IEC60068-2-6: Sine, 10 – 500 Hz, 3 axes, 1 oct/min., 10 cycles each axis IEC60068-2-64: Random, 5 – 500 Hz, 3 axes, 30 min.		0.02, 2.56		2 0.0122, 1	g g ² /Hz, g _{RMS}
Notes 1. Some specifications may not be met below -20°C. 2. Additional power derating may be necessary at high altitudes to ensure component temperatures remain within specification.						

ELECTROMAGNETIC COMPLIANCE – EMISSIONS

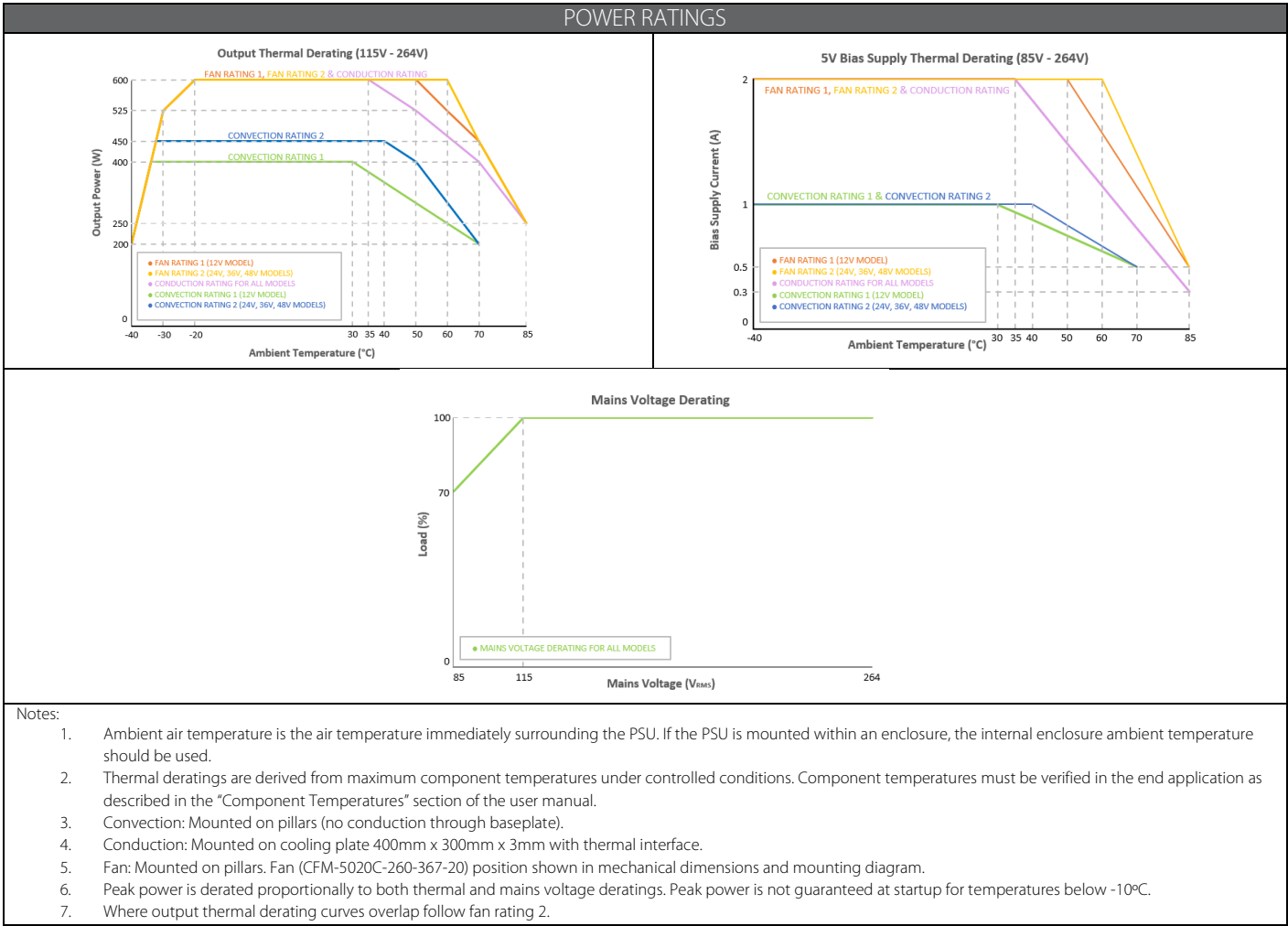
Phenomenon	Basic EMC Standard	Test Details
Radiated emissions, electric field	EN55011/32	Class B compliant
Conducted emissions	EN55011/32, CISPR 32/11	Class B compliant
Harmonic Distortion	IEC61000-3-2	Compliant
Flicker & Fluctuation	IEC61000-3-3	Compliant

ELECTROMAGNETIC COMPLIANCE – IMMUNITY

Phenomenon	Basic EMC Standard	Test Details
Electrostatic discharge	IEC61000-4-2	Test level 4: 15kV air, 8kV contact
Radiated RF EM fields	IEC61000-4-3	Test Level 3: (10V/m, 80MHz-2.7GHz) sine wave AM 80% 1kHz
Proximity fields from RF wireless communications equipment	IEC61000-4-3	Test levels as per IEC60601-1-2:2014 Table 9
Electrical Fast Transients/bursts	IEC61000-4-4	Test Level 3: (2kV Power, 1kV I/O) 5kHz(ed3) & 100kHz(ed4)
Surges	IEC61000-4-5	Test Level 3: 1kV L-N, 2kV L-E
Conducted disturbances induced by RF fields	IEC61000-4-6	Test Level 3: 10V, 0.15 to 80MHz sine wave AM 80% 1kHz
Power Frequency Magnetic Fields	IEC61000-4-8	Test level 4: 30A/m 50Hz
Voltage Dips	IEC61000-4-11 ⁽²⁾	0% 10ms (Criterion A, B ⁽³⁾), 0% 20ms (Criterion B ⁽³⁾) 70% 0.5s (Criterion A), 40% 0.2s (Criterion B)
Voltage Interruptions	IEC61000-4-11	0% 250/300 cycle as per IEC60601-1-2:2014 (Criterion B)
Voltage Sag Immunity	SEMI-F47-0706 ⁽²⁾	0% 20mS (Criterion B ⁽³⁾) 70% 0.5s, 80% 1s, 80% 10s, 90% continuous (Criterion A) 50% 0.2s (Criterion A at 240V and Criterion B at 100V)

Notes:
1. Criterion A = No degradation of performance or loss of function.
Criterion B = Temporary degradation of performance or loss of function is allowed, provided the function is self-recoverable.
Criterion C = Temporary loss of function is allowed but requires operator intervention to recover.
2. Tested at nominal range (100V to 240V). Line deratings applied where appropriate.
3. Criterion A is achieved for all input voltages when P_{out} ≤ 350W

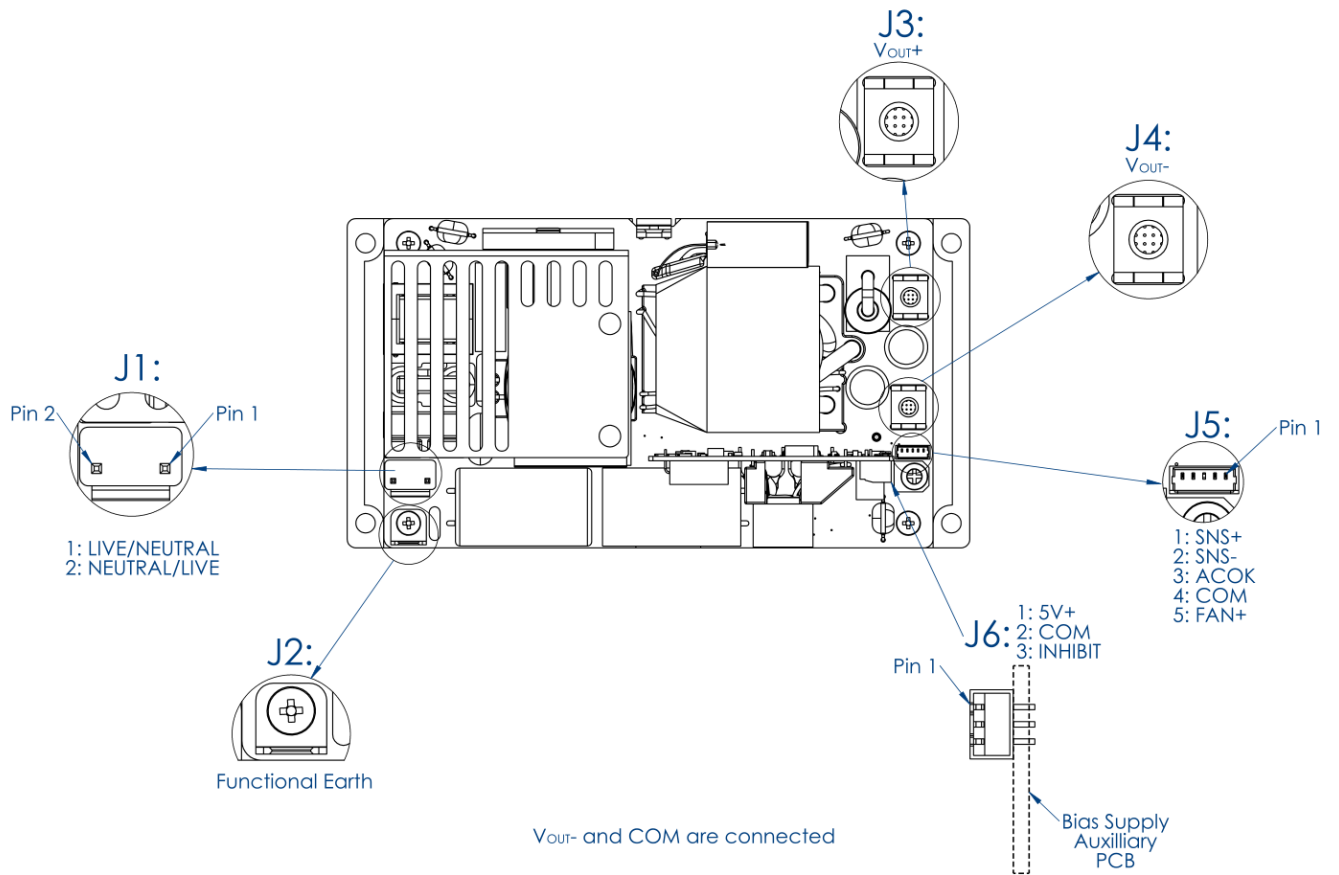
AGENCY APPROVALS		
Standard	Details	File
UL62368-1	Edition 3 2021 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements Edition 4 2025 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements	UL: E316486
IEC62368-1	Edition 3 2018 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements Edition 4 2023 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements	
CSA C22.22 No. 62368-1:19 CSA C22.22 No. 62368-1:25 IEC 60601-1:2005+A1:2012+A2:2020 CAN/CSA-C22.2 No.60601-1:08, CAN/CSA-C22.2 No.60601-1:14+A1+A2:2022	Edition 3 2021 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements Edition 4 2025 - Audio/Video, Information and Communication Technology Equipment - Part 1: Safety Requirements	
AAMI ES60601-1:2005+ AMD1:2012+AMD2:2021	Edition 3.2 - Medical electrical equipment— Part 1: General requirements for basic safety and essential performance	
CE MARK	Medical electrical equipment— Part 1: General requirements for basic safety and essential performance	
	LVD 2014/35/EU, EMC 2014/30/EU, RoHS 2011/65/EU + 2015/863	
Approval certificates available at www.vox-power.com		



MECHANICAL DIMENSIONS AND MOUNTING

SCREWS		
Location	Details	Tightening
Mounting holes (Screw from top side)	M4 Pan head Screw	0.5NM
The diagram illustrates the mechanical dimensions and mounting details of the EIRE600 module. The top view shows a rectangular module with a width of 144.00 and a height of 76.20. A cooling fan is mounted on top, with an airflow direction indicated by a downward arrow. The fan has a diameter of 70.00 and is positioned 50.00 from the top edge. The module features four mounting holes (J1, J2, J3, J4) and two additional points (J5, J6). The distance between J1 and J2 is 64.80, and between J3 and J4 is 25.47. The distance between J2 and J3 is 135.50. The distance between J4 and J5 is 18.20, and between J5 and J6 is 14.60. The side view shows a height of 27.10 and a distance of 9.30 from the mating face of J1. The bottom view shows a width of 127.00. The detail view shows a distance of 14.60 from the mating surface of J3 and J4.		
MOUNTING DETAILS		
Notes: If mounting for conduction cooling, attach the baseplate to a heatsink, cooling plate or equipment enclosure through the four mounting holes shown in the diagram above. It is recommended to use a thermal interface material (such as TI900) between the baseplate and the mounting surface to ensure efficient cooling.		

CONNECTOR DETAILS



MATING CONNECTORS

Ref.	Details	Manufacturer	Housing	Terminal
J1 - Mains Input	2 Pin, 7A, 250V _{AC} , 7.92mm, with Friction lock, 18-20 AWG ⁽¹⁾	JST ^(3,4)	VAR-2 ⁽²⁾	SVA-41T-P1.1
J2 - Functional Earth	FASTON, PIDG series, Positive lock 0.25EX	TE Connectivity	-	165536-1
J3 & J4 - Output Power	M4 Screw terminal	-	-	-
J5 - Signals	5 Pin, 1.25mm, with Friction lock, 28-32 AWG	Molex ^(3,4)	510210500	500588000
J6 - Bias Supply	3 Pin, 2mm, with Friction Lock, 24 AWG	Hirose	DF3-3S-2C ⁽²⁾	DF3-2428

- Notes
1. Recommended Cable 18-20AWG, 300V, >7A, 105°C.
 2. Connectors J1 and J6 are rated for minimum operating temperatures of -25°C and -30°C, respectively. For continuous operation below these temperatures, please consult Vox Power.
 3. Direct equivalents may be used for any connector parts.
 4. All cables should be appropriately sized to handle the required current with minimal temperature rise and must be rated 105°C min, equivalent to UL1015.

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