

2.4kW Programmable Power Supplies

Features	Benefits
• 2U high	Convenient package for system integration
• Variable speed fans	Minimises audible noise
• Constant current & voltage control	Flexible control options
• Built-in RS-232 / RS-485 & analogue programming interfaces	Suitable for Li-ion and other intelligent battery charging systems



Specifications					
Model	Units	EVA150-16-A	EVA300-8-A	EVA600-4-A	
Output Rating					
Rated Output Voltage	(1)	V	150	300	600
Rated Output Current	(2)	A	16	8	4
Rated Output Power	(1)	W	2400		
Input Characteristics					
Input Voltage Range / Freq.	(3)	-	Single Phase 170 ~ 265 Vac / 47 ~ 63Hz		
Efficiency (Typ.)	(4)	%	88		
Maximum Input Current	(4)	A	16.6		
Power Factor (Typ.)	(4)	-	0.99		
In-rush Current	5)	A	Less than 50		
Constant Voltage Mode					
Maximum Line Regulation	(6)	%	0.1% of rated output voltage +20mV		
Maximum Load Regulation	(7)	%	0.15% of rated output voltage +50mV		
Ripple and Noise (p-p, 20MHz)	(8)	mVp-p	150	300	450
Ripple r.m.s. 5Hz - 1MHz		mVRMS	50	100	150
Temperature Coefficient		ppm/°C			
Warm-up drift		%	Less than 0.2% of Rated Output Voltage over 30min following power on		
Remote Sense Compensation		-	5V per wire		
Up-prog. Response time, 0-Vomax.	(9)	ms	100	150	300
Down-prog. Response time, Full Load	(9)	ms	200	300	600
Down-prog. Response time, No Load	(10)	ms	2500	3500	6500
Transient Response Time		ms	Time for output voltage to recover within 0.5% of its rated output at 10~90% of rated output current. Output set-point: 10~100%, Local sense. Less than 2ms		
Hold-up time (Typ.)		ms	10ms Typical. At rated output power		
Constant Current Mode					
Maximum Line Regulation	(6)	%	0.1% of rated output current +20mA		
Maximum Load Regulation	(11)	%	0.15% of rated output current +50mA		
Ripple r.m.s. 5Hz - 1MHz	(12)	mA	60	30	15
Temperature Coefficient		ppm/°C	100		
Warm-up drift		-	Less than 0.4% of Rated Output Current over 30min following power on		

Specifications				
Model	Units	EVA150-16-A	EVA300-8-A	EVA600-4-A
Auxilliary Outputs				
Output Voltage : 15V	(14)	-	15V \pm 5%, 0.2A Max Load, Ripple & Noise 100mVp-p. Referenced internally to the negative output potential	
Output Voltage : 5V	(14)	-	5V \pm 5%, 0.2A Max Load, Ripple & Noise 100mVp-p. Referenced internally to IF_COM potential.	
Analog Programming and Monitoring				
Vout Voltage Programming		-	10~100%, 0.5~5V. Accuracy and linearity: \pm 1% of rated Vout.	
Iout Voltage Programming	(13)	-	0~100%, 0~5V. Accuracy and linearity: \pm 1% of rated Iout.	
Vout Resistor Programming		-	10~100%, 0.5~5kOhm full scale. Accuracy and linearity: \pm 2% of rated Vout.	
Iout Resistor Programming	(13)	-	0~100%, 0~5kOhm full scale. Accuracy and linearity: \pm 2% of rated Iout.	
ON / OFF Control		-	By electrical Voltage: 0~0.6V / 2~15V or dry contact	
Default SO Control: SW1-5 Down		-	OFF • Low or Short. ON • High or Open	
Output Current Monitor		-	0~5V. Accuracy: \pm 1%	
Output Voltage Monitor		-	0~5V. Accuracy: \pm 1%	
Power Supply OK Signal		-	4~5V • OK, 0~0.6V • Fail. 500 ohm series resistance.	
Parallel Operation		-	Possible, up to 4units in master/slave mode with two wires current balance connection.	
CV/CC Output Signal		-	Open collector. Maximum Voltage: 30V, maximum sink current: 10mA. CV mode • Open, CC mode • ON.	
Enable/Disable Input (At SW1-9: Up)		-	Dry contact. Open • OFF, Short • ON. Maximum Voltage at Enable/Disable input: 6V	
Local/Remote Analog Control (At SW1-1 and/or SW1-2: Up)		-	By electrical signal or Open/Short : 0~0.6V or Short • Remote, 2~15V or open • Local.	
Local/Remote Analog Indicator (At SW1-1 and/or SW1-2: Up)		-	Open collector. Maximum voltage:30V, maximum sink current: 10mA. Local • Open, Remote • ON.	
Programming and Readback (RS232 / 485)				
Vout Programming Accuracy		mV	Within 150mV	Within 300mV
Iout Programming Accuracy	(13)	mA	Within 48mA	Within 24mA
Vout Programming Resolution		mV	Within 18mV	Within 36mV
Iout Programming Resolution		mA	Within 1.92mA	Within 0.96mA
Vout Readback Accuracy		mV	300mV	600mV
Iout Readback Accuracy	(13)	mA	96mA	48mA
Vout Readback Resolution		mV	Within 18mV	Within 36mV
Iout Readback Resolution		mA	Within 1.92mA	Within 0.96mA
Protections Functions				
Over Voltage Protection (OVP)		-	Inverter shut-down, manual reset by AC input recycle or by communication port command.	
Over Voltage Trip Point		%	10%~110% of rated output voltage. Preset by communication port.	
Output Under Voltage Limit		-	Prevents from adjusting Vout below limit. Preset by communication port. Does not affect analog programming.	
Over Temperature Protection		-	Inverter shut-down. User selectable, latched or non latched.	
Rear Panel				
Indications CV Mode		-	Green LED for CV Mode Operation	
Indications CC Mode		-	Green LED for CC Mode Operation	
Indications Out Indicator		-	Green LED, Lights when the output is "ON"	
Indications Alarm Indicator		-	Red LED, Blinks in case of fault condition (OVP, OTP, Output Off by ENA,AC Fail)	

Specifications

Model	Units	EVA150-16-A	EVA300-8-A	EVA600-4-A
Environmental Conditions				
Operating Temperature	°C	-10°C ~ +45°C • 2400W (100% Load)•		
	°C	+50°C • 2000W (83% Load)•		
	°C	+60°C • 1200W (50% Load)•		
	°C	+70°C • 240W (10% Load)•		
	°C	(+45°C ~ +70°C • derate load by 3.6%/°C).		
Storage Temperature	-	-20°C ~ +85°C		
Operating Humidity	-	20~90%RH (No condensation)		
Storage Humidity	-	10~95%RH (No condensation)		
Altitude	m	Maximum 2000m		
Mechanical				
Cooling	-	Forced air cooling by internal fans.		
Weight (Typ.)	kg	Less than 7.5		
Size (W x H x D)	mm	250 x 86 x 445 (WxHxD) Refer to Outline Drawing.		
Vibration	-	MIL-810F, method 514.5. No Operating, 10.2m/s ² (1.04G) Constant. 10~500Hz X,Y,Z each 1Hr.		
Shock	-	Less than 20G, half sine, 11ms. Unit is unpacked.		
Safety				
Withstand Voltage	Vdc	Primary - Secondary Hazardous (Output / 15Vdc aux / Non Insulated Control): 4000VDC/1min		
		Primary - SELV (*15) (Communication / 5Vdc aux / Insulated Control): 4242VDC/1min		
		Primary - Ground: 2828VDC 1min.		
		Secondary Hazardous (Output / 15Vdc aux / Non Insulated Control) - SELV (*15) (Communication / 5Vdc aux / Insulated Control)		
		Secondary Hazardous (Output / 15Vdc aux / Non Insulated Control) - Ground: 2670VDC/1min.		
Insulation Resistance OUTPUT to GND	MΩ	More than 100MΩ at 25°C 70%RH.		
Safety	-	EN 60950-1: 2006 (Ed.2) + A11: 2009 UL 60950-1: 2007 (Ed.2), IEC 60950-1: 2005 (Ed.2), + A11:2009		
EMC				
Immunity	-	Designed to meet IEC61000-4-2(Level 3,2), -3(Level 2), -4(Level 3), -5(Level 3), -6(Level 2), -8(Level 1), -11		
Conductive Emission	-	Designed to meet EN55022-class A, FCC-Part 15 class A, VCCI-class A		
Radiated Emission	-	Designed to meet EN55022-class A, FCC-Part 15 class A, VCCI-class A		
Warranty	Years	5		

Notes

- Minimum voltage is guaranteed to maximum 10% of the rated output voltage.
- Minimum current is guaranteed to maximum 1% of the rated output current.
- For cases where conformance to various safety standards (UL, IEC etc.) is required, to be described as 190 - 240VAC (50/60Hz).
- At 200VAC input with rated output power.
- Not including EMI filter inrush current, less than 0.2ms.
- At 170 -265VAC, constant load.
- From No -load to Full - load, constant input voltage. Measured at the sensing point in Remote Sense.
- For 150V, 300V models: measured with JEITA RC-9131A (1:1) probe. For 600V model: measured with 10:1 probe.
- From 10% to 90% or 90% to 10% of rated output voltage, with rated, resistive load.
- From 90% to 10% of rated output voltage.
- For load voltage change, equal to the unit voltage rating, constant input voltage.
- The ripple is measured at 10 - 100% of rated output voltage and rated output current.
- The constant current programming readback and monitoring accuracy does not include the warm-up and load regulation thermal drift.
- Measured with JEITA RC-9131A (1:1) probe.
- SELV (Safety Extra Low Voltage):
- when Main Output is floating at any Output Voltage, or Main Output is grounded and Output Voltage ≤400Vdc,
Communication, 5Vdc aux and Insulated Control circuits meet all requirements of the Standard for SELV circuits;
- when Main Output is grounded and Output Voltage >400Vdc, Communication, 5Vdc aux and Insulated Control circuits are Hazardous.

Model Selector

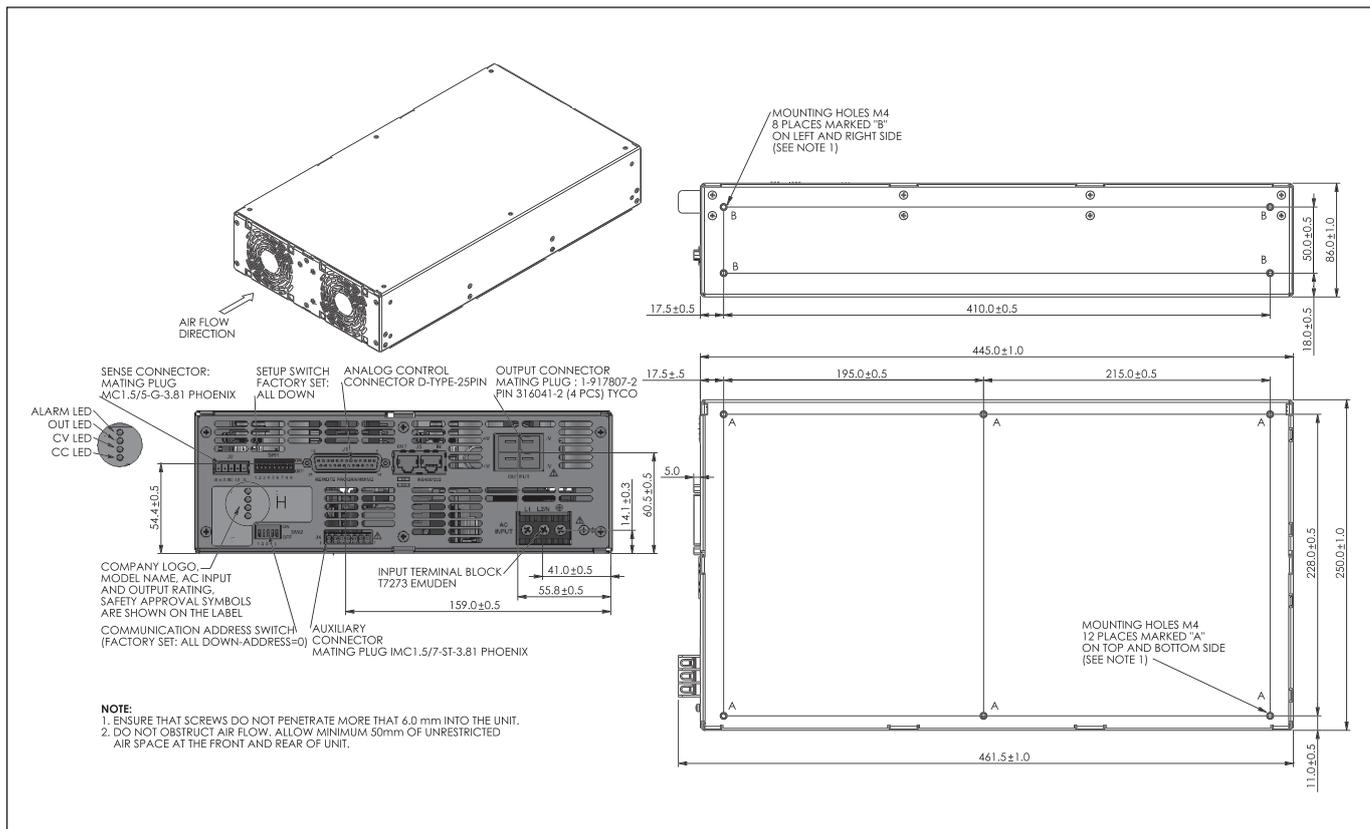
Model	Voltage Adjust Range (V)	Current Adjust Range (A)	Max Power (W)	Ripple 5Hz 1MHz (mV)	Noise 200MHz BW (mV)	Ripple 5Hz 1MHz (mV)	Efficiency (typical at full load) %
EVA150-16-A	15 - 150	0 - 16	2400	50	150	60	88
EVA300-8-A	30 - 300	0 - 8	2400	100	300	30	88
EVA600-4-A	60 - 600	0 - 4	2400	150	450	15	88

Accessories

Part Number

Serial Link Cable (included)	GEN/RJ45
Communication Cable RS485	GEN/485-9
Communication Cable RS232	GEN/232-9

EVA Series Outline Drawing



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