

AC-DC POWER SUPPLIES

UNIVERSAL INPUT, 40 WATT

MEDICAL APPLICATIONS, 2" × 3.5" PACKAGE

MUI40 DUAL AND TRIPLE OUTPUT



FEATURES

- 0.15 Watt Low Standby Power Consumption
- Ultra Low Cross Regulation Under 1.5%
- Universal Input Voltage Range 85 - 264 Vac, 47 - 63 Hz
- Built-in Class B EMI Filter
- Output Voltage Adjustable (Output 1 Only)
- 4000 Vac Input to Output 2MOPP Insulation
- Protection Type Class I and Class II
- Low Leakage Current Under 75 μ A
- Operating Altitude 5000M
- 5 Year Warranty
- Safety Approvals: ANSI/AAMI ES60601-1, EN60601-1 and IEC60601-1 3rd Edition
- CE Marked: IEC60601-1-2 ED4.0
- Compliant to RoHS II & Reach
- Dimensions: 2" × 3.5" (50.8 mm × 88.9 mm)

SELECTION GUIDE All specifications are typical at 230Vac input, full load and 25°C, unless otherwise noted.

Input Voltage Range Vac	Output 1			Output 2			Output3		Max. Output Power W	Efficiency %	Model Number*
	Voltage Vdc	Current (Normal) A	Max. Current A	Voltage Vdc	Current (Normal) A	Max. Current A	Voltage Vdc	Max. Current A			
85 - 264	5	5	8	3.3	4	6			40	89.5	MUI40-5S33SB
85 - 264	12	2.1	3.34	5	4	6			40	89	MUI40-1212S5SB
85 - 264	12	2.1	3.34	3.3	4	6			40	90	MUI40-12S33SB
85 - 264	15	1.7	2.67	5	4	6			40	88.5	MUI40-15S5SB
85 - 264	24	1.05	1.67	5	4	6			40	86	MUI40-24S5SB
85 - 264	28	0.72	1.43	5	4	6			40	85.5	MUI40-28S5SB
85 - 264	5	5	8	3.3	4	6	-5	0.5	40	89	MUI40-5S-33B
85 - 264	5	5	8	3.3	4	6	12	0.5	40	89	MUI40-5S33S12SB
85 - 264	5	5	8	3.3	4	6	-12	0.5	40	89	MUI40-5S33SN12SB
85 - 264	12	2.1	3.34	5	4	6	-5	0.5	40	88.5	MUI40-12S-5B
85 - 264	12	2.1	3.34	5	4	6	-12	0.5	40	88	MUI40-5S-12B
85 - 264	12	2.1	3.34	3.3	4	6	5	0.5	40	88.5	MUI40-12S33S5SB
85 - 264	12	2.1	3.34	3.3	4	6	-12	0.5	40	88	MUI40-33S-12B
85 - 264	15	1.7	2.67	5	4	6	-15	0.5	40	88	MUI40-5S-15B
85 - 264	24	1.05	1.67	5	4	6	12	0.5	40	86	MUI40-24S5S12SB
85 - 264	24	1.05	1.67	5	4	6	-12	0.5	40	86	MUI40-24S5SN12SB



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Input Specifications			Output Specifications		
Input voltage range	85 Min., 264 Max., Vac	AC input	Output power, Watt	40 Max.	Pout1+Pout2+Pout3
	120 Min., 370 Max., Vdc	DC input	Initial set voltage accuracy, %	-1 Min., 1 Max. -2 Min., 2 Max.	230Vac and Full Load, Vout 1 Vout 2, Vout 3
Input frequency, Hz	47 Min., 63 Max.	AC input	Line regulation, %	-0.2 Min., 0.2 Max.	Low Line to High Line at Full Load
Input current, A	1.05 Max.	100Vac	Load regulation, %	-0.5 Min., 0.5 Max. -0.7 Min., 0.7 Max. -1.5 Min., 1.5 Max. -0.7 Min., 0.7 Max.	No Load to Full Load, Vout 1 Vout 3 No Load to Full Load, Vout 2 0.1W Load to Full Load, Vout 2
	0.55 Max.	240Vac	Cross regulation, %	-1.5 Min., 1.5 Max.	Asymmetrical load 25%/100% FL
No load input power, Watts	0.15 Typ.	230Vac	Voltage adjustability, %	-10 Min., 10 Max.	Vout 1
Leakage current, μ A	75 Max.	264Vac	Minimum load, %	0 Typ. 0.5 Typ.	Vout 3 is full load, Vout 1 + Vout 2
Start-up time, ms	1000 Max.		Ripple and noise, mVp-p	Measured by 20MHz bandwidth	
Rise time, ms	20 Typ.			100 Typ.	With a 10 μ F/25V 1206 X7R MLCC, Vout 1, 5V
Hold-up time, ms	25 Typ.	115Vac and full load		120 Typ.	With a 1 μ F/50V 1206 X7R MLCC, Vout 1, 12V
Input inrush current, A	60 Max.	230Vac		150 Typ.	With a 1 μ F/50V 1206 X7R MLCC, Vout 1, 15V
Input protection	T3.15A/250Vac	Internal fuse in line and neutral		240 Typ.	With a 1 μ F/50V 1206 X7R MLCC, Vout 1, 24V
				280 Typ.	With a 1 μ F/50V 1206 X7R MLCC, Vout 1, 28V
				100 Typ.	With a 10 μ F/25V 1206 X7R MLCC, Vout 2, All
				100 Typ.	With a 10 μ F/25V 1206 X7R MLCC, Vout 3, 5V
			Temperature coefficient, %/°C	-0.02 Min., 0.02 Max.	120 Typ.
			Transient response peak deviation, %	3Vout, Max.	With a 10 μ F/25V 1206 X7R MLCC, 12V
			Transient response recovery time, μ s	600, Typ.	With a 10 μ F/25V 1206 X7R MLCC, 15V
			Over voltage protection, %	125 Min., 140 Max.	
			Over power protection, %	145 Typ.	% of Vout(nom); Latch mode, Vout 1
			Short circuit protection	Continuous, automatic recovery	% of nominal output power; Hiccup mode, Pout 1 + Pout 2

General Specifications					
Isolation voltage, Vac	1 minute (2MOPP insulation)	Input to Output	4000 Min.		
		Input (Output) to F.G.	2500 Min.		
Isolation resistance, G Ω	500Vdc		0.1 Min.		
Switching frequency, kHz	230Vac	Vout 1, 5V		70 Typ.	
		Others		115 Typ.	
		Vout 2		750 Typ.	
		Vout 3		510 Typ.	

Environmental Specifications			
Operating ambient temperature, °C	With derating	-40 Min.	85 Max.
Storage temperature range, °C		-40 Min.	85 Max.
Operating altitude, m			5000 Max.
Shock		IEC60068-2-27	
Vibration		IEC60068-2-6	
Relative humidity	Non-condensing	5% to 95% RH	

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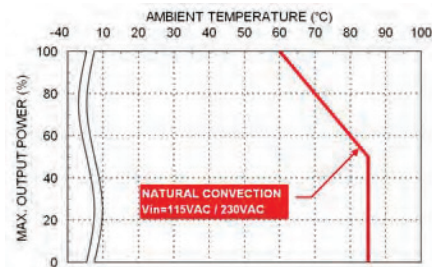
Physical Specifications			EMC Specifications			
Design meet safety standard	ANSI/AAMI, ES60601-1, IEC60601-1, EN60601-1		Specifications	Conditions	Level	
Weight, g	150 (5.29oz)	MUIO	EMI ⁽¹⁾	EN55011, EN55022 and FCC Part 18	Conducted	Class B
					Radiated	Class B
	198 (6.98oz)	MUIT	Harmonic currents	EN61000-3-2	Full load	Class A
	216 (7.62oz)	MUI	Voltage flicker	EN61000-3-3		
	238 (8.40oz)	MUID	ESD	EN61000-4-2	Air ±15kV and Contact ±8kV	Perf. Criteria A
Dimensions	2" × 3.5" (50.8 mm × 88.9 mm)		Radiated immunity	EN61000-4-3	20V/m	Perf. Criteria A
			Fast transient	EN61000-4-4	±2kV	Perf. Criteria A
MTBF	1.716 × 10 ⁶ hrs , MIL-HDBK-217F, Full load		Surge	EN61000-4-5	DM ±1kV	Perf. Criteria A
			Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A
			Power frequency magnetic field	EN61000-4-8	30 A/M	Perf. Criteria A
			Dip and interruptions	EN60601-1-2	0% of 240 Vac, 0.5 cycle	Perf. Criteria A
					0% of 240 Vac, 1 cycle	Perf. Criteria A
					70% of 240 Vac, 25/30 cycle	Perf. Criteria A
				EN61000-4-11	0% of 240 Vac, Single phase	Perf. Criteria B
					0% of 100 Vac, 0.5 cycle	Perf. Criteria A
					0% of 100 Vac, 1 cycle	Perf. Criteria B
					70% of 100 Vac, 25/30 cycle	Perf. Criteria A
					0% of 100 Vac, Single phase	Perf. Criteria B

Note:

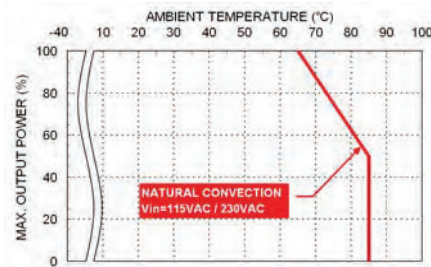
- External components may be required for Class I application. For further information, please contact Polytron Devices, Inc.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

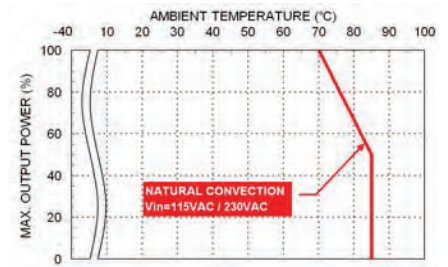
Characteristic Curve



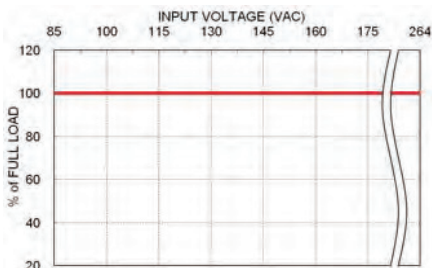
Derating Curve vs. Ambient Temperature



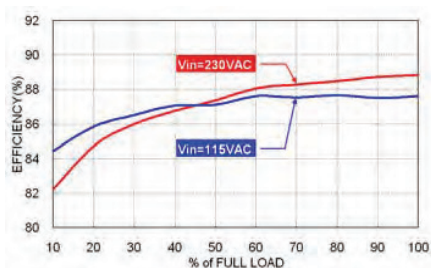
Derating Curve vs. Ambient Temperature



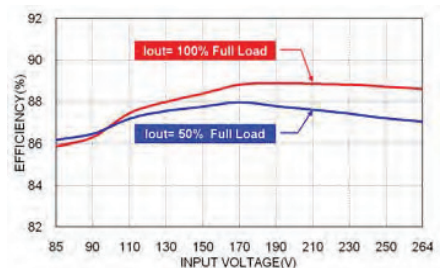
Derating Curve vs. Ambient Temperature



Derating Curve vs. Input Voltage



Efficiency vs. Output Load



Efficiency vs. Input Voltage

MUI40 DUAL AND TRIPLE OUTPUT

Pin Connectors

CON1: INPUT CONNECTOR

PIN	
1	Line
3	Neutral

MATES WITH

JST Housing	VHR-3N
JST Crimp Terminals	SVH-21T-P1.1

Note:

- Either one of four screws holes of Open/ Chassis Type can be considered as PE connection for Class I application.

CON2: OUTPUT CONNECTOR

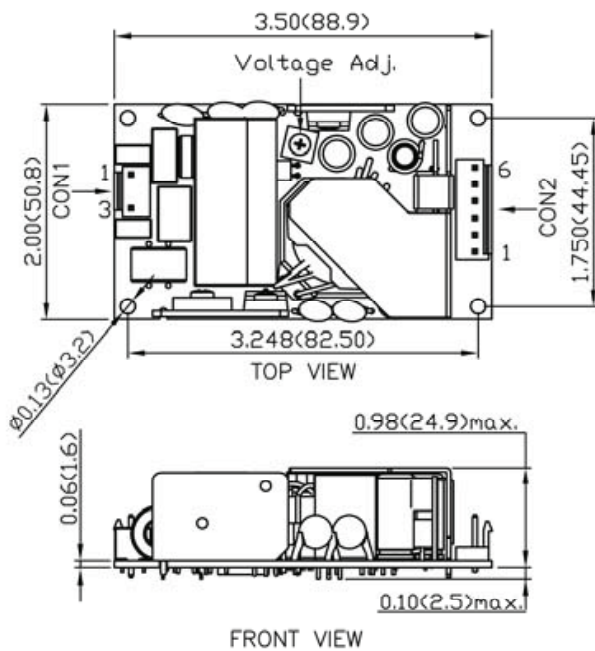
PIN	
1	Vout 3
2, 3	Com
4, 5	Vout 2
6	Vout 1

MATES WITH

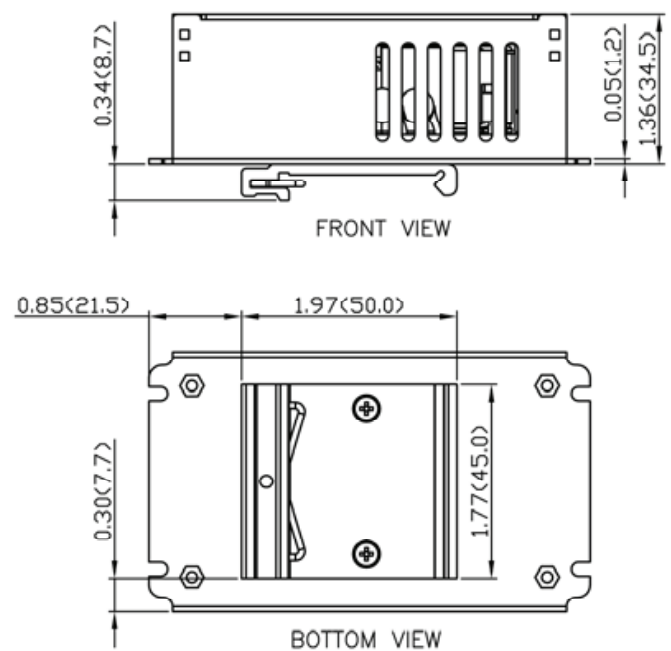
JST Housing	VHR-4N
JST Crimp Terminals	SVH-21T-P1.1

Mechanical Drawing

Open Type



DIN Rail Type



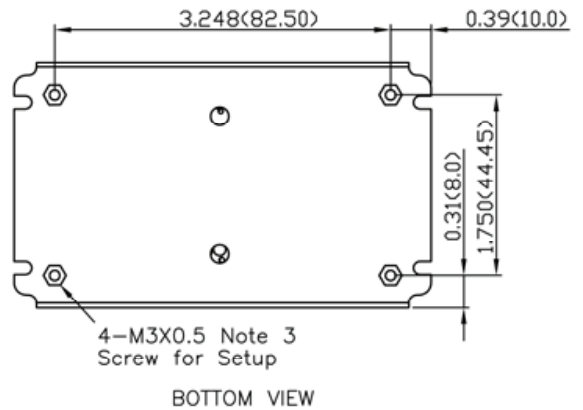
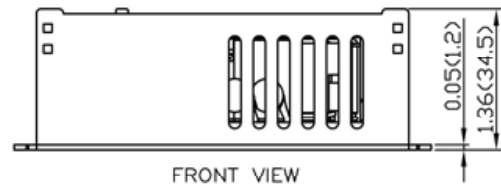
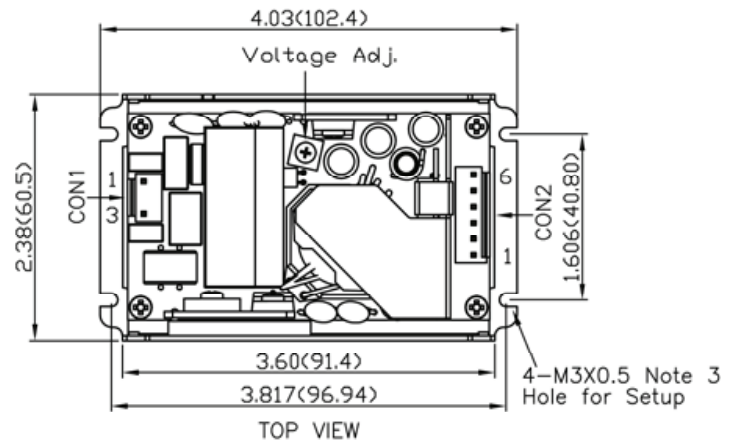
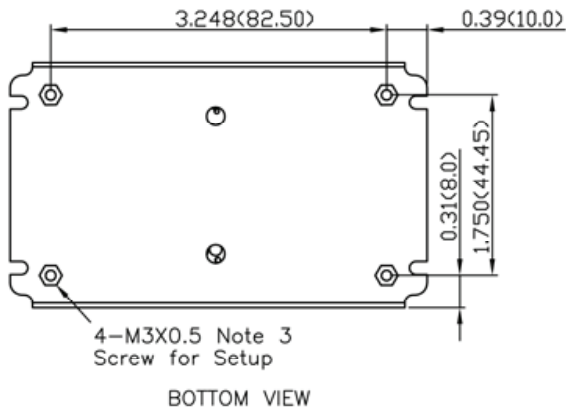
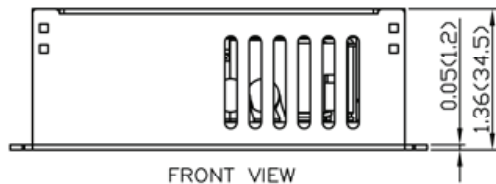
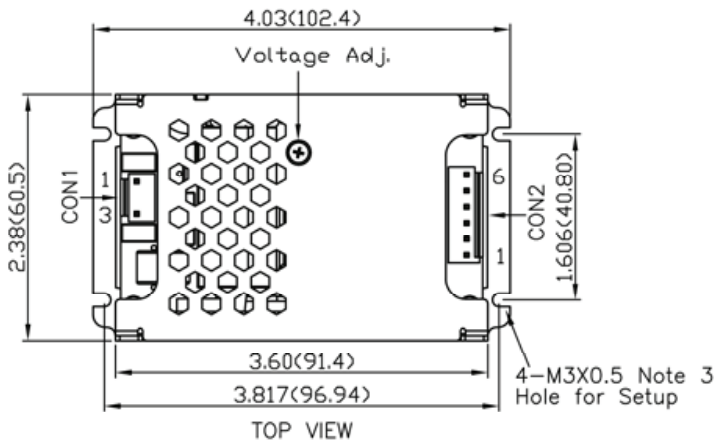
- All dimensions in inch (mm)
- Tolerance :x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
- M3 × 0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

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Mechanical Drawing

Enclosed Type

U Chassis Type



1. All dimensions in inch (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
3. M3 × 0.5 screw locked torque MAX 5Kgf.cm/0.49N.m