

AC-DC POWER SUPPLIES

UNIVERSAL INPUT, 65 WATT

MEDICAL APPLICATIONS

MUI65 SERIES



FEATURES

- Universal Input Range
- Operating Temperature Range: -25° to 80°C (with derating)
- Compact Package: 2.00" × 3.00" × 1.16"
- Mounting Options: Screw Terminal, Chassis Mount, Din Rail, Open Type, Enclosed (Standard)
- High Efficiency: Up to 92%
- Active Power Factor Correction
- Low Leakage Current Under 75µA
- Built-in EMI Class A Filter
- 2000VAC Input to Output 2 MOPP Isolation
- Class I and Class II Protection
- Medical Safety Approvals: UL, CE and ANSI/AAMI ES60601-1, EN60601-1 and IEC60601-1 3rd Edition
- RoHS Compliant to 2011/65/EU
- 0.11 Watt Low Standby Power Consumption
- Operating Altitude 5000M

SELECTION GUIDE

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

Input Range Vac	Output Voltage Vdc	Output Current at Convention Cooled 60°C Ta A	Max. Output Power W	Input Power at No Load W	Efficiency %	Model Number
85 - 264	5	10	50	0.11	90	MUI65-5S
85 - 264	7.5	8.67	65	0.11	90	MUI65-7S
85 - 264	9	7.23	65	0.11	91	MUI65-9S
85 - 264	12	5.42	65	0.11	92.5	MUI65-12S
85 - 264	15	4.34	65	0.11	93.5	MUI65-15S
85 - 264	24	2.71	65	0.11	93.5	MUIH65-24S
85 - 264	24	2.71	65	0.11	92	MUI65-24S
85 - 264	28	2.33	65	0.11	93.5	MUIH65-28S
85 - 264	28	2.33	65	0.11	91.5	MUI65-28S
85 - 264	36	1.81	65	0.11	92.5	MUI65-36S
85 - 264	48	1.36	65	0.11	93	MUI65-48S
85 - 264	53	1.24	65	0.11	92.5	MUI65-53S

- MUIO:** Open Type
MUIT: Chassis Type
MUID: Din Rail
MUI: Enclosed (Standard)
Suffix "T": Screw Terminal

MUI65 SERIES

Input Specifications			Output Specifications			
Voltage range	85 Min., 264 Max., Vac	AC input	Output power, Watt	65 Max.		
	120 Min., 370 Max., Vdc	DC input	Initial set voltage accuracy, %	-1 Min., 1 Max.	230Vac and Full Load	
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	1.6 Max.	100Vac and full load	Load regulation, %	-0.7 Min., 0.7 Max.	No Load to Full Load, 5Vout	
	0.9 Max.	240Vac and full load		-0.5 Min., 0.5 Max.	Output Voltages	
No load input power, Watts	0.11 Typ.	230Vac		-0.6 Min., 0.6 Max.	10% Load to 90% Load, 5Vout	
			-0.4 Min., 0.4 Max.	10% Load to 90% Load, Others		
Leakage current, μ A	75 Max.	264Vac	Voltage adjustability, %	-20 Min., 10 Max.	Single Output, 53Vout	
				-10 Min., 10 Max.	Single Output, Others	
Start-up time, ms	1000 Max.		Minimum load, %	0 Typ.		
Rise time, ms	20 Typ.		Ripple and noise, mVp-p	Measured by 20MHz bandwidth		
Hold-up time, ms	16 Typ.	115Vac and full load		75 Typ.	With a 10 μ F/25V 1206 X7R MLCC, 5Vout, 7.5Vout, 9Vout, 12Vout, 15Vout	
				75 Typ.	With a 1 μ F/50V 1206 X7R MLCC, 24Vout, 28Vout, 36Vout	
Input inrush current, A	60 Max.	230Vac	150 Typ.	With a 0.1 μ F/100V 1206 X7R MLCC, 48Vout, 53Vout		
Input protection	T3.15A/250Vac	Internal fuse in line and neutral	Temperature coefficient, %/°C	-0.02 Min., 0.02 Max.		
			Transient response peak deviation, %	3Vout, Max.	Load step change from 50-75% at 2.5A/ μ s	
			Transient response recovery time, μ s	600		
			Over voltage protection, %	125 Min., 140 Max.	% of Vout(nom); Latch mode	
			Over load protection, %	145 Typ.	% of Iout rated; Hiccup mode	
			Short circuit protection	Continuous, automatic recovery		

General Specifications			
Isolation voltage, Vac	1 minute (2MOPP isolation)	Input to Output	4000 Min.
		Input (Output) to F.G.	2500 Min.
Isolation resistance, G Ω	500Vdc		0.1 Min.
Switching frequency, kHz	230Vac	5Vout	60 Typ.
		7.5Vout	80 Typ.
		9Vout	70 Typ.
		Others	120 Typ.

Environmental Specifications			
Operating ambient temperature, °C	Natural Convection with derating	-40 Min.	85 Max.
Storage temperature range, °C		-40 Min.	85 Max.
Operating altitude, m	Vertical direction by natural convection (20LFM)		5000 Max.
Shock		IEC60068-2-27	
Vibration		IEC60068-2-6	
Relative humidity	Non-condensing	5% to 95% RH	

MUI65 SERIES

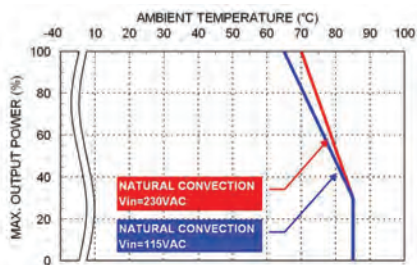
Physical Specifications		EMC Specifications				
Design meet safety standard	ANSI/AAMI, ES60601-1, IEC60601-1, EN60601-1		Specifications	Conditions	Level	
Weight, g	117 (4.13oz)	MUIO	EMI ⁽¹⁾	EN55011, EN55022 and FCC Part 18	Conducted	Class B
					Radiated	Class B
	157 (5.54oz)	MUIT	Harmonic currents	EN61000-3-2	Full load	Class A
			Voltage flicker	EN61000-3-3		
	172 (6.07oz)	MUI	ESD	EN61000-4-2	Air ±8KV and Contact ±6KV	Perf. Criteria A
Radiated immunity			EN61000-4-3	20V/m	Perf. Criteria A	
Fast transient			EN61000-4-4	±2KV	Perf. Criteria A	
Surge			EN61000-4-5	DM ±1KV and CM ±2KV	Perf. Criteria A	
193 (6.81oz)	MUID	Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A	
		Power frequency magnetic field	EN61000-4-8	10 A/M	Perf. Criteria A	
		Dip and interruptions	EN61000-4-11	EN60601-1-2	230Vac 50Hz, 30%, 500mS	Perf. Criteria A
					230Vac 50Hz, 60%, 100mS	Perf. Criteria A
	230Vac 50Hz, >95%, 10mS			Perf. Criteria A		
	230Vac 50Hz, >95%, 5000mS			Perf. Criteria B		
Dimensions	2.00" × 3.00" × 1.16" (50.8mm × 76.2mm × 29.46mm)					
MTBF	1.494 × 10 ⁶ hrs, MIL-HDBK-217F, Full load					
				100Vac 50Hz, 30%, 500mS	Perf. Criteria A	
				100Vac 50Hz, 60%, 100mS	Perf. Criteria B	
				100Vac 50Hz, >95%, 10mS	Perf. Criteria A	
				100Vac 50Hz, >95%, 5000mS	Perf. Criteria A	

Note:

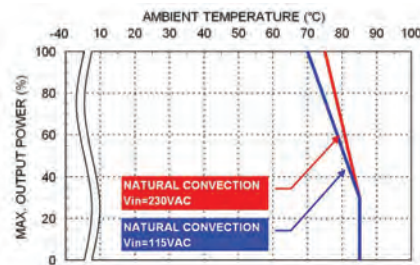
1. External components may be required for Class I application. For further information, please contact Polytron Devices, Inc.

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

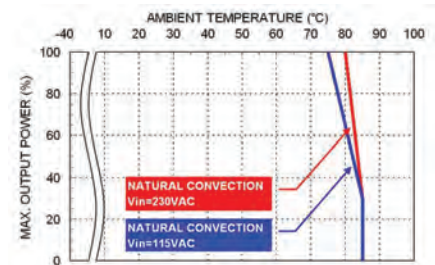
Characteristic Curve



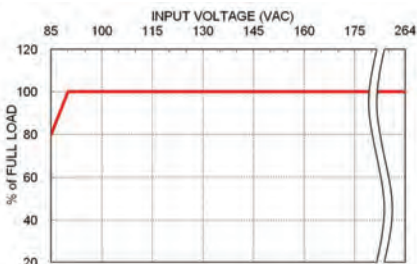
Derating Curve vs. Ambient Temperature
MUI65-XXS XX=7.5, 9, 28Vdc Output



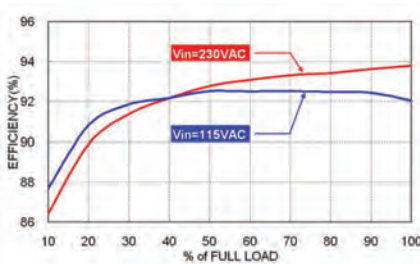
Derating Curve vs. Ambient Temperature
MUI65-XXS XX=12, 24, 36, 48, 53Vdc Output



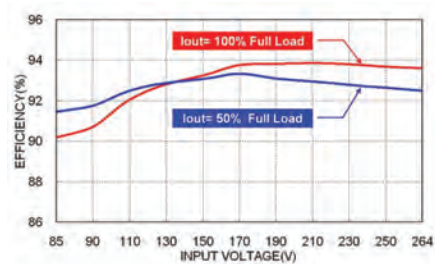
Derating Curve vs. Ambient Temperature
MUI65-XXS XX=15, 24, 28Vdc Output



Derating Curve vs. Input Voltage



Efficiency vs. Output Load



Efficiency vs. Input Voltage

MUI65 SERIES

Pin Connectors

CON1: INPUT CONNECTOR

PIN	
1	Line
3	Neutral

MATES WITH

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

CON2: OUTPUT CONNECTOR

PIN	
1, 2	-Vout
3, 4	+Vout

MATES WITH

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

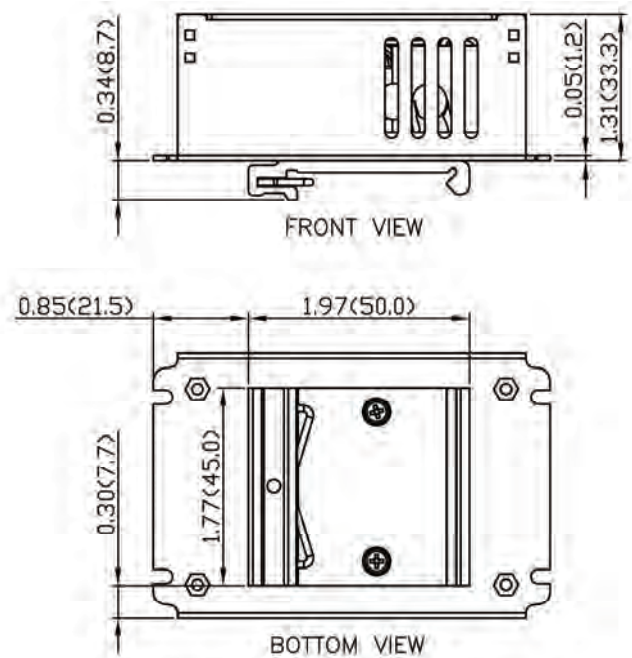
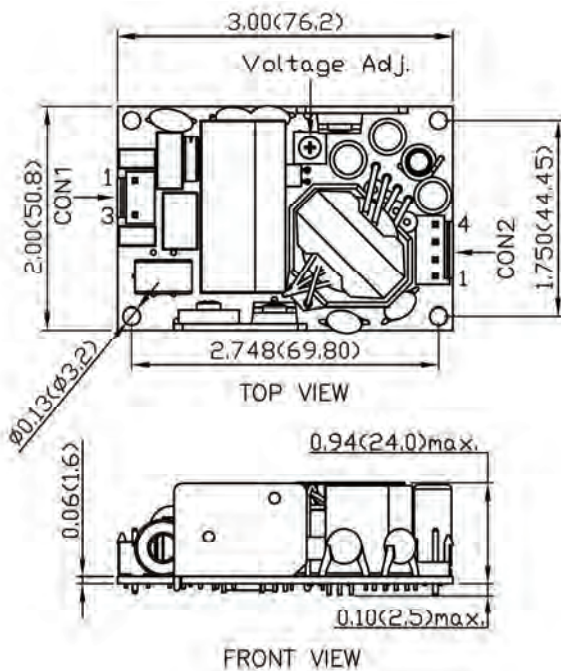
Note:

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

Mechanical Drawing

Open Type

DIN Rail Type



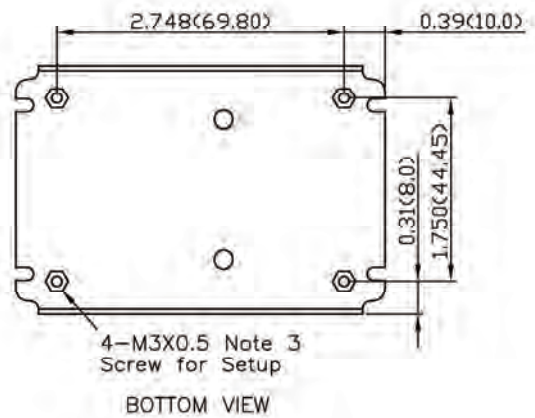
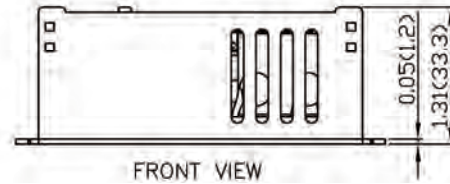
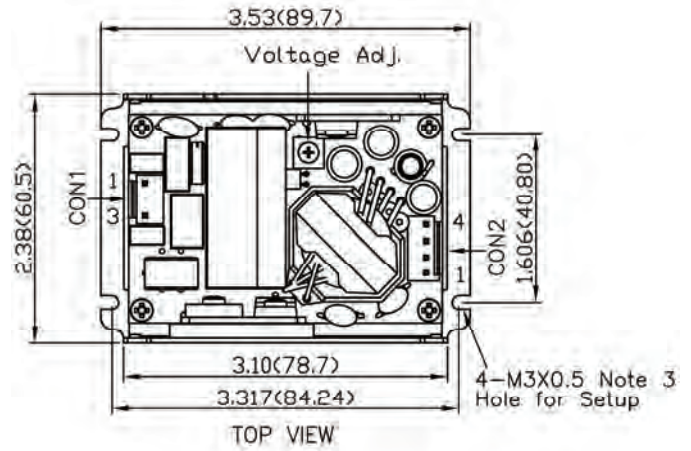
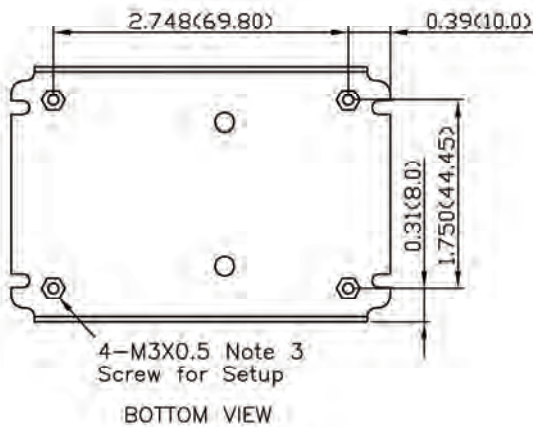
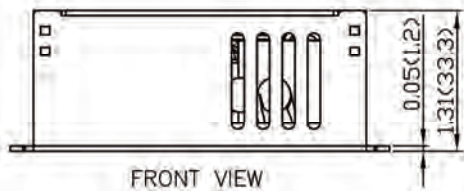
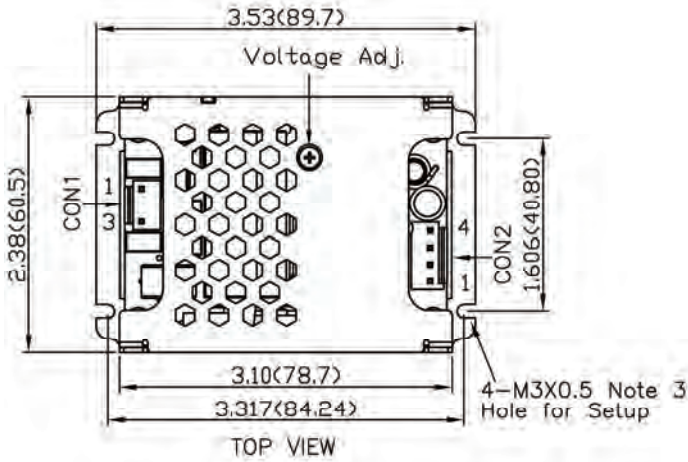
1. All dimensions in inch (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
3. M3 × 0.5 screw locked torque MAX
5Kgf.cm/0.49N.m

MUI65 SERIES

Mechanical Drawing

Enclosed Type

U Chassis Type

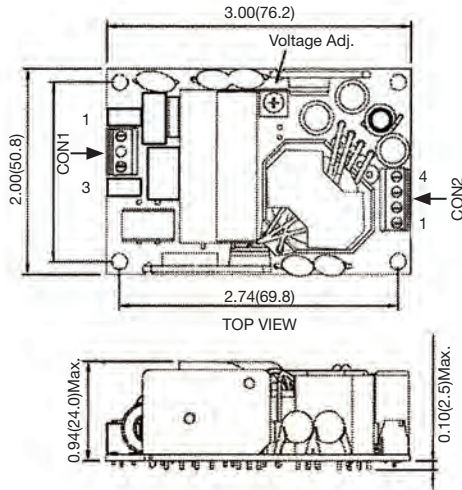


1. All dimensions in inch (mm)
2. Tolerance :x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
3. M3 × 0.5 screw locked torque MAX
5Kgf.cm/0.49N.m

MUI65 SERIES

Mechanical Drawing

Screw Terminal



CON1: INPUT CONNECTOR

PIN	
1	Line
3	Neutral

MOUNTING HOLES MARKED WITH

Must be connected to safety earth for CLASS 1 application

Screw locked torque MAX 2Kgf.cm/0.2N.m

Wire dimension range 26 - 16AWG

CON2: OUTPUT CONNECTOR

PIN	
1, 2	-Vout
3, 4	+Vout

Screw locked torque MAX 2Kgf.cm/0.2N.m

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