

AC-DC POWER SUPPLIES

UNIVERSAL INPUT, UP TO 40 WATTS

INDUSTRIAL APPLICATIONS

UI40 SERIES



FEATURES

- Universal Input Range
- Wide Input Voltage Range 85 - 264 Vac, 47 - 63 Hz
- Compact Package: 2.00" x 3.00"
- Built-In Class B EMI Filter
- Output Voltage Adjustable (Single Output Only)
- 3000 Vac Input to Output Reinforced Insulation
- Protection Type Class I and Class II
- Low Leakage Current Under 75 μ A
- Operating Altitude 5000M
- 3 Year Warranty
- Safety Meets: UL60950-1, EN60950-1, and IEC60950-1
- CE Marked: Design Meet IEC 61850-3
- Compliant to RoHS II & Reach

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 Convection Cooled 73°C Ta A	Max. Output Power W	Input Power at No Load W	Efficiency %	Model Number*
85 - 264	5	8	40	0.11	90	UI40-5SB
85 - 264	7.5	5.34	40	0.11	90	UI40-7.5SB
85 - 264	9	4.45	40	0.11	91	UI40-9SB
85 - 264	12	3.34	40	0.11	92	UI40-12SB
85 - 264	12	3.34	40	0.11	90	UI40-12SHB
85 - 264	15	2.67	40	0.11	92	UI40-15SHB
85 - 264	15	2.67	40	0.11	90	UI40-15SB
85 - 264	24	1.67	40	0.11	92	UI40-24SB
85 - 264	28	1.43	40	0.11	91	UI40-28SB
85 - 264	36	1.12	40	0.11	92	UI40-36SB
85 - 264	48	0.84	40	0.11	93	UI40-48SB
85 - 264	53	0.77	40	0.11	92.5	UI40-53SB



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UI40 SINGLE SERIES

Input Specifications			Output Specifications		
Voltage range	85 Min., 264 Max., Vac	AC input	Output power, Watt	40 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
			Load regulation, %	-0.7 Min., 0.7 Max.	No Load to Full Load, 5Vout
Input current, A	1 Max.	100Vac and full load		-0.5 Min., 0.5 Max.	Others
	0.5 Max.	240Vac and full load		-0.6 Min., 0.6 Max.	10% Load to 90% Load, 5Vout
No load input power, Watts	0.11 Typ.	230Vac		-0.4 Min., 0.4 Max.	Others
			Voltage adjustability, %	-20 Min., 10 Max.	Single Output, 53Vout
Leakage current, μ A	75 Max.	264Vac		-10 Min., 10 Max.	Single Output, Others
			Minimum load, %	0 Typ.	
Start-up time, ms	1000 Max.		Ripple and noise, mVp-p		Measured by 20MHz bandwidth
				75 Typ.	With a 10 μ F/25V 1206 X7R MLCC, 5Vout, 7.5Vout, 9Vout, 12Vout, 15Vout
Rise time, ms	20 Typ.			75 Typ.	With a 1 μ F/50V 1206 X7R MLCC, 24Vout, 28Vout, 36Vout
				150 Typ.	With a 0.1 μ F/100V 1206 X7R MLCC, 48Vout, 53Vout
Hold-up time, ms	25 Typ.	115Vac and full load	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
Input inrush current, A	60 Max.	230Vac	Transient response recovery time, μ s	600, Typ.	
			Over voltage protection, %	125 Min., 140 Max.	% of Vout(nom); Latch mode
Input protection	T3.15A/250Vac	Internal fuse in line and neutral	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	3000 Min.		
		Input (Output) to F.G.	2500 Min.		
Isolation resistance, G Ω	500Vdc		0.1 Min.		
Switching frequency, kHz	230Vac	5Vout		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				5000 Max.	
Shock		IEC60068-2-27			
Vibration		IEC60068-2-6			
Relative humidity	Non-condensing	5% to 95% RH			

UI40 SINGLE SERIES

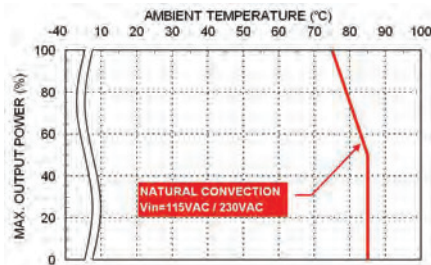
Physical Specifications			EMC Specifications				
Design meet safety standard	UL60950-1, EN60950-1, IEC60950-1		Specifications	Conditions		Level	
			EMI ⁽¹⁾	EN55011, EN55022 and FCC Part 15	Conducted Radiated	Class B Class B	
Weight, g	114 (4.02oz)	UIO	Harmonic currents	EN61000-3-2	Full load	Class A	
	154 (5.43oz)	UIT	Voltage flicker	EN61000-3-3			
			ESD	EN61000-4-2	Air ±15KV and Contact ±6KV	Perf. Criteria A	
			Radiated immunity	EN61000-4-3	20V/m	Perf. Criteria A	
			Fast transient	EN61000-4-4	±4KV	Perf. Criteria B	
	169 (5.96oz)	UI	Surge	EN61000-4-5	DM ±2KV and CM ±4KV	Perf. Criteria A	
	190 (6.70oz)	UID	Conducted immunity	EN61000-4-6	20 Vr.m.s	Perf. Criteria A	
			Power frequency magnetic field	EN61000-4-8	100 A/M	Perf. Criteria A	
			Dip and interruptions	EN60600-4-11		230Vac 50Hz, 30%, 20mS	Perf. Criteria A
						230Vac 50Hz, 30%, 500mS	Perf. Criteria A
	230Vac 50Hz, 60%, 1000mS	Perf. Criteria A					
	230Vac 50Hz, >95%, 10mS	Perf. Criteria A					
	100Vac 50Hz, >95%, 5000mS	Perf. Criteria B					
Dimensions	2.00” × 3.00” (50.8mm × 76.2mm)		Damped Oscillatory Wave	EN61000-4-18	DM ±1kV and CM ± 2.5kV	Perf. Criteria A	
MTBF	3.010 × 10 ⁶ hrs , MIL-HDBK-217F, Full load						

Note:

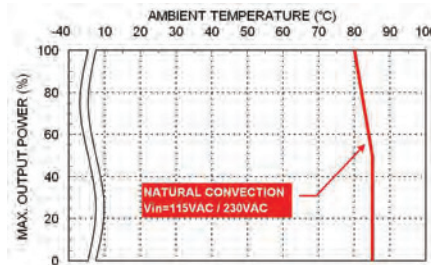
1. External components may be required for Class I application. For further information, please contact Polytron Devices, Inc.

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

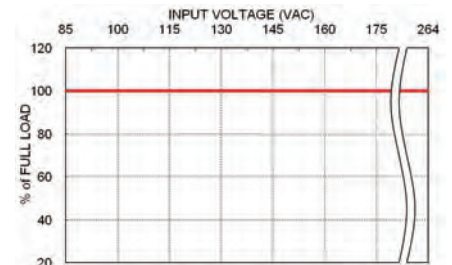
Characteristic Curve



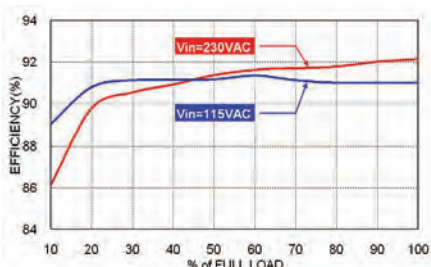
Derating Curve vs. Ambient Temperature



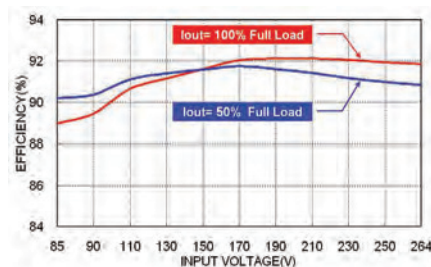
Derating Curve vs. Ambient Temperature



Derating Curve vs. Input Voltage



Efficiency vs. Output Load



Efficiency vs. Input Voltage

UI40 SINGLE 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

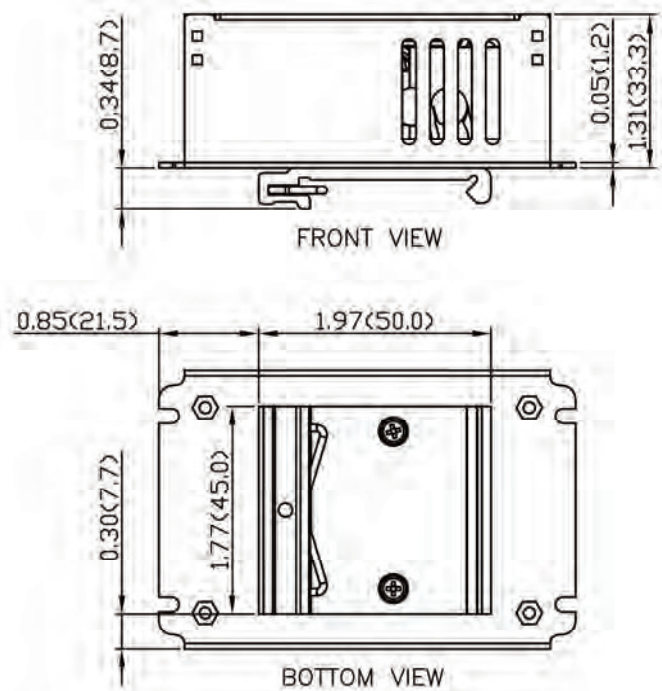
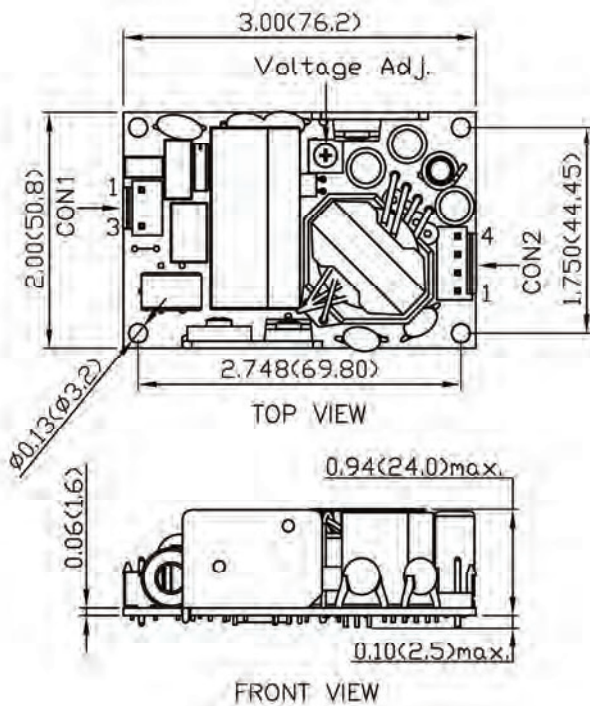
Note:

- 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



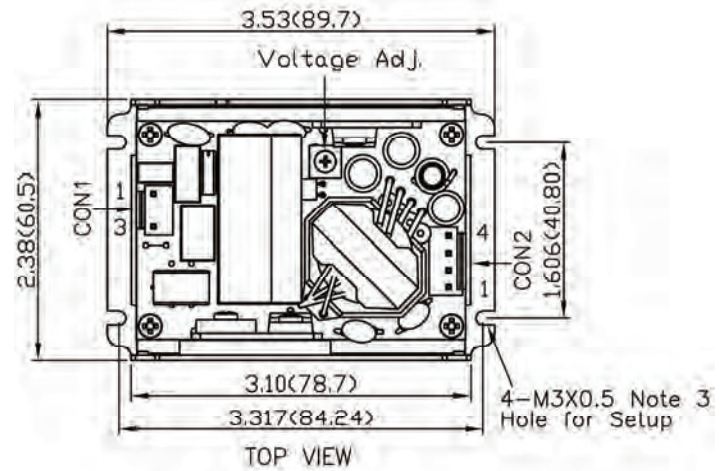
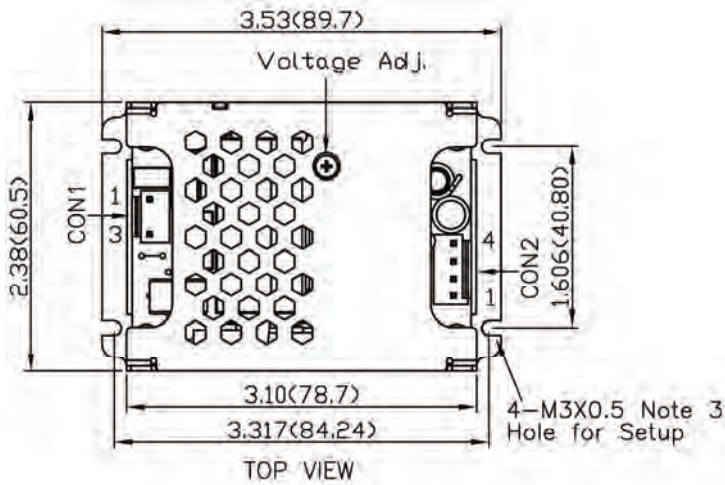
- All dimensions in inch (mm)
- Tolerance : $x.xx \pm 0.02$ ($x.x \pm 0.5$)
 $x.xxx \pm 0.01$ ($x.xx \pm 0.25$)
- M3 x 0.5 screw locked torque MAX 5Kgf.cm/0.49N.m

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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