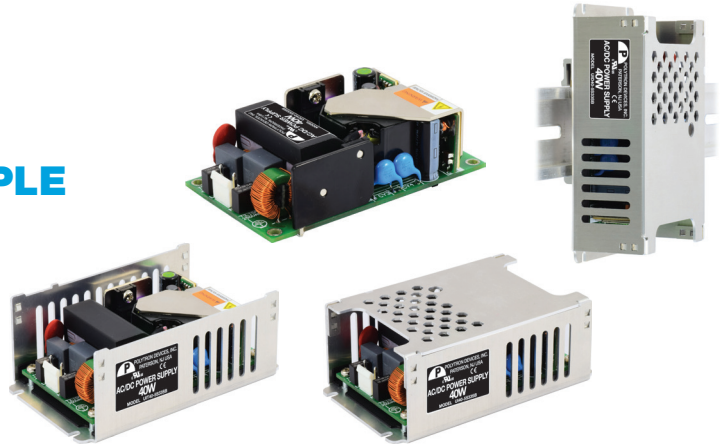


AC-DC POWER SUPPLIES

UNIVERSAL INPUT, DUAL AND TRIPLE OUTPUT, UP TO 40 WATTS

INDUSTRIAL APPLICATIONS

UI40 SERIES



FEATURES

- Universal Input Range: 85 - 264 Vac, 47 - 63 Hz
- Dual and Triple Output Voltage
- Compact Package: 2.00" × 3.00"
- Open Frame, Enclosed, Chassis Mount, and Din Rail Options
- Built-In Class B EMI Filter
- Output Voltage Adjustable
- 3000 Vac Input to Output Reinforced Insulation
- Protection Type Class I and Class II
- Low Leakage Current Under 75µA
- Operating Altitude 5000M
- 3 Year Warranty
- Safety Meets: IEC/EN/UL 60950-1, 62368-1
- CE Marked
- Compliant to RoHS II & Reach

SELECTION GUIDE

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

Output 1			Output 2			Output 3		Max. Capacitor Load µF	Max. Output Power W	Efficiency %	Model Number*
Voltage Vdc	Current (Normal) A	Current (Max.) A	Voltage Vdc	Current (Normal) A	Current (Max.) A	Voltage Vdc	Current (Max.) A				
+5	5	8	+3.3	4	6	-	-	12000/2000	40	89.5	UI40-5S33SB
+12	2.1	3.34	+5	4	6	-	-	1750/2000	40	89	UI40-1212S5SB
+12	2.1	3.34	+3.3	4	6	-	-	1750/2000	40	90	UI40-12S33SB
+15	1.7	2.67	+5	4	6	-	-	1670/2000	40	88.5	UI40-15S5SB
+24	1.05	1.67	+5	4	6	-	-	440/2000	40	86	UI40-24S5SB
+28	0.72	1.43	+5	4	6	-	-	220/2000	40	85.5	UI40-28S5SB
+5	5	8	+3.3	4	6	-5	0.5	10000/2000/420	40	89	UI40-5S-33B
+5	5	8	+3.3	4	6	+12	0.5	10000/2000/420	40	89	UI40-5S33S12SB
+5	5	8	+3.3	4	6	-12	0.5	10000/2000/420	40	89	UI40-5S33SN12SB
+12	2.1	3.34	+5	4	6	-5	0.5	1750/2000/420	40	88.5	UI40-12S-5B
+12	2.1	3.34	+5	4	6	-12	0.5	1750/2000/420	40	88	UI40-5S-12B
+12	2.1	3.34	+3.3	4	6	+5	0.5	1750/2000/420	40	88.5	UI40-12S33S5SB
+12	2.1	3.34	+3.3	4	6	-12	0.5	1750/2000/420	40	88	UI40-33S-12B
+15	1.7	2.67	+5	4	6	-15	0.5	1670/2000/420	40	88	UI40-5S-15B
+24	1.05	1.67	+5	4	6	+12	0.5	440/2000/420	40	86	UI40-24S5S12SB
+24	1.05	1.67	+5	4	6	-12	0.5	440/2000/420	40	86	UI40-24S5SN12SB

* Enclosed (Standard): Prefix UI
 Open Type: Prefix UIO
 Chassis Type: Prefix UIT
 Din Rail: Prefix UID

Screw Terminal: Suffix "T"
 Class II Protection Type: Suffix "B"
 Class I Protection Type: No Suffix

UI40 DUAL AND TRIPLE OUTPUT

Input Specifications			Output Specifications		
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.	230Vac and Full Load, Vout 1
Input frequency, Hz	47 Min., 63 Max.	AC input		-2 Min., 2 Max.	Vout 2, Vout 3
			Line regulation, %	-0.2 Min., 0.2 Max.	Low Line to High Line at Full Load
Input current, A	1.05 Max.	100Vac and full load	Load regulation, %	-0.5 Min., 0.5 Max.	No Load to Full Load, Vout 1
	0.55 Max.	240Vac and full load		-0.7 Min., 0.7 Max.	No Load to Full Load, Vout 3
No load input power, Watts	0.15 Max..	230Vac		-1.5 Min., 1.5 Max.	No Load to Full Load, Vout 2
				-0.7 Min., 0.7 Max.	0.1W No Load to Full Load
Leakage current, μ A	75 Max.	264Vac	Cross regulation, %	-1.5 Min., 1.5 Max.	Asymmetrical load 25%/100% FL
			Voltage adjustability, %	-10 Min., 10 Max.	Vout 1
Start-up time, ms	1000 Max.		Minimum load, %	0 Typ.	
				0.5 Typ.	Vout 3 is Full Load, Vout 1 + Vout 2
Rise time, ms	20 Typ.		Ripple and noise, mVp-p		Measured by 20MHz bandwidth
				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
				150 Typ.	15V
Input inrush current, A	60 Max.	230Vac		240 Typ.	24V
				280 Typ.	28V
Input protection	T3.15A/250Vac	Internal fuse		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	
			120 Typ.	12V	
			150 Typ.	15V	
			Temperature coefficient, %/ $^{\circ}$ C	-0.02 Min., 0.02 Max.	
			Transient response peak deviation, %	3 Vout, Max.	Load step from 50-75% at 2.5A/ μ s, Vout 1
			Transient response recovery time, μ s	600, Typ.	
			Over voltage protection, %	125 Min., 140 Max.	% of Vout(nom); Latch mode, Vout 1
			Over power protection, %	145 Typ.	% of nominal output power; Hiccup mode, Pout 1 + Pout 2
			Short circuit protection	Continuous, automatic recovery	

General Specifications				
Isolation voltage, Vac	1 minute (reinforced 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	Vout 1, 5V		70 Typ.
		Others		115 Typ.
		Vout 2		750 Typ.
		Vout 3		510 Typ.

UI40 DUAL AND TRIPLE OUTPUT

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	

Physical Specifications

Design meets safety standard	IEC/EN/UL 60950-1, 62368-1	
Weight, g	150 (5.29oz)	UIO
	198 (6.98oz)	UIT
	216 (7.62oz)	UI
	238 (8.40oz)	UID
Dimensions, inches (mm)	3.50 × 2.00 × 0.98 (88.9 × 50.8 × 24.9)	Open Type
	4.03 × 2.38 × 0.05 (102.4 × 60.5 × 1.2)	Enclosed Type
MTBF	1.716 × 10 ⁶ hrs, MIL-HDBK-217F, Full load	

EMC Specifications

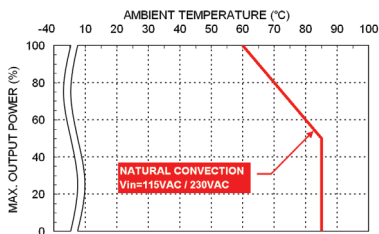
Specifications	Conditions	Level
EMI ⁽¹⁾	EN55011, EN55032 and FCC Part 15	Conducted Class B
		Radiated Class B
Harmonic currents	EN61000-3-2	Full load Class A
Voltage flicker	EN61000-3-3	
ESD	EN61000-4-2	Air ±15KV and Contact ±6KV Perf. Criteria A
Radiated immunity	EN61000-4-3	20V/m Perf. Criteria A
Fast transient	EN61000-4-4	±4KV Perf. Criteria A
Surge	EN61000-4-5	DM ±2KV and CM ±4KV Perf. Criteria A
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	
Damped Oscillatory Wave	EN61000-4-18	DM ±1kV and CM ± 2.5kV Perf. Criteria A

Note:

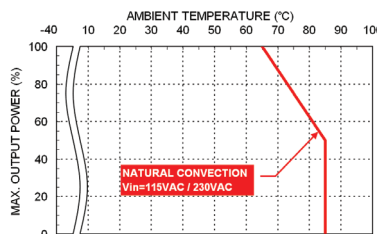
1. External components may be required for Class I application. For further information, please contact Polytron Devices, Inc.

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

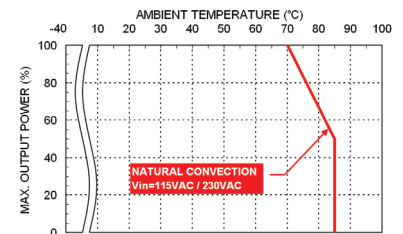
Characteristic Curve



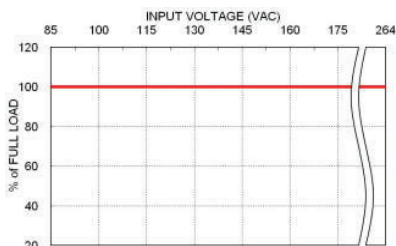
UI40-24S5SB, UI40-28S5SB
UI40-12S33S5SB, UI40-5S-15B, UI40-24S5SN12SB,
UI40-24S5S12SB, UI40-5S33S12SB



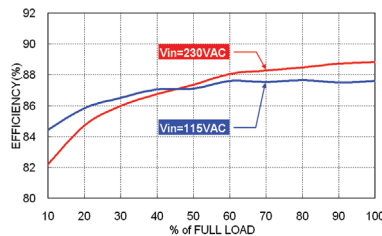
UI40-5S33SB, UI40-12S33SB
UI40-12S33S5SB, UI40-33S-12B



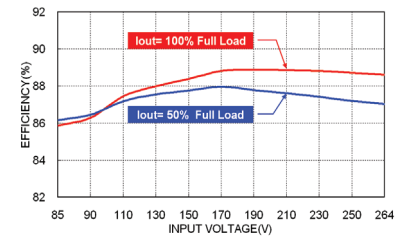
UI40-1212S5SB, UI40-15S5SB
UI40-12S-5B, UI40-5S-12B, UI40-5S-15B



Derating Curve vs. Input Voltage



Efficiency vs. Output Load



Efficiency vs. Input Voltage

UI40 DUAL AND TRIPLE OUTPUT

Pin Connectors

CON1: INPUT CONNECTOR

PIN	
1	Line
3	Neutral

CON2: OUTPUT CONNECTOR

PIN	
1	Vout3
2,3	Com
4,5	Vout2
6	Vout1

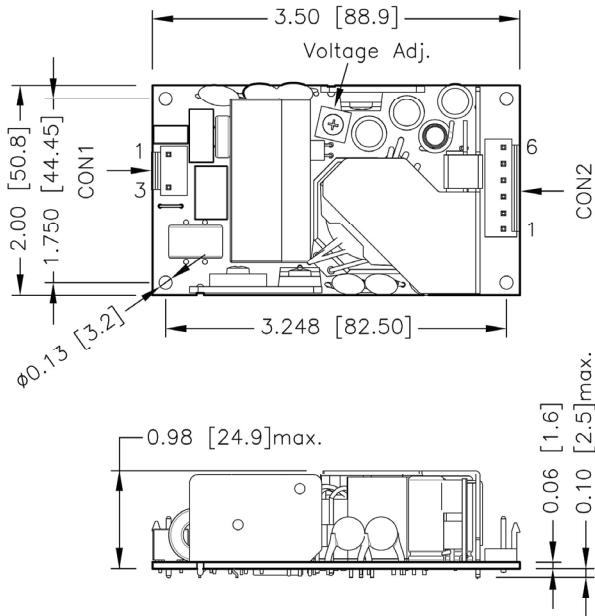
Note:

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

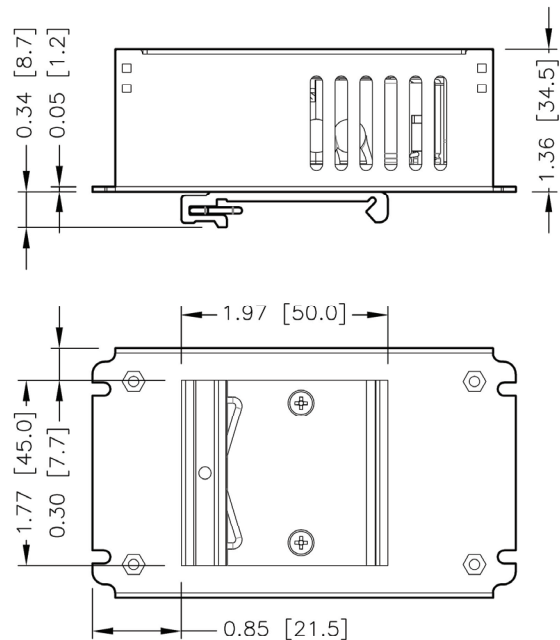
Mechanical Drawing

Open Type

DIN Rail Type



FRONT VIEW



BOTTOM VIEW

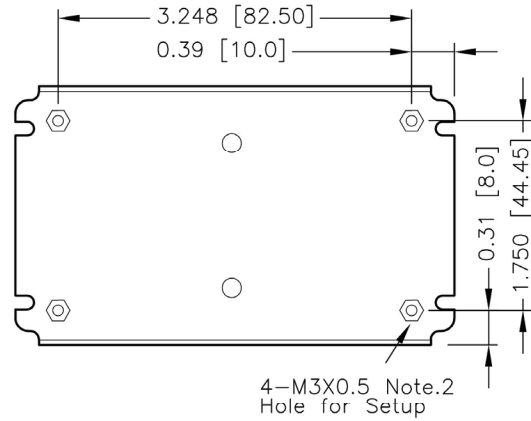
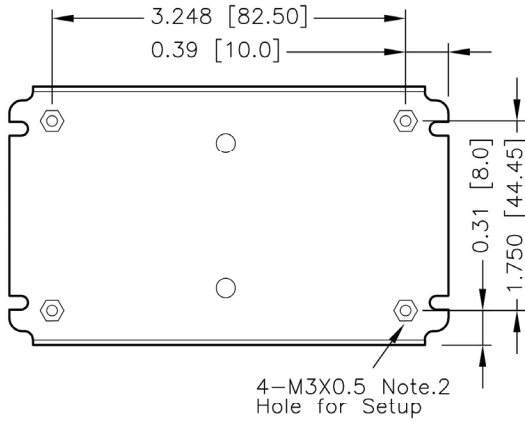
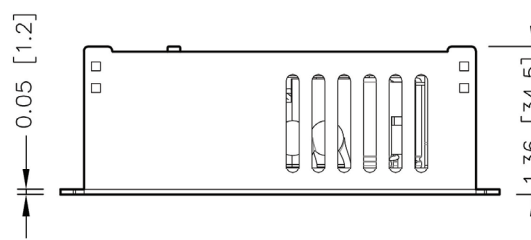
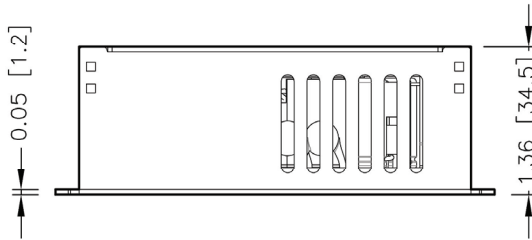
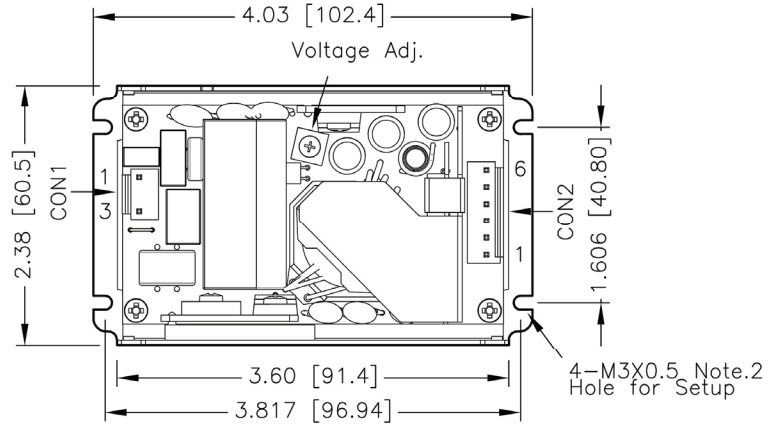
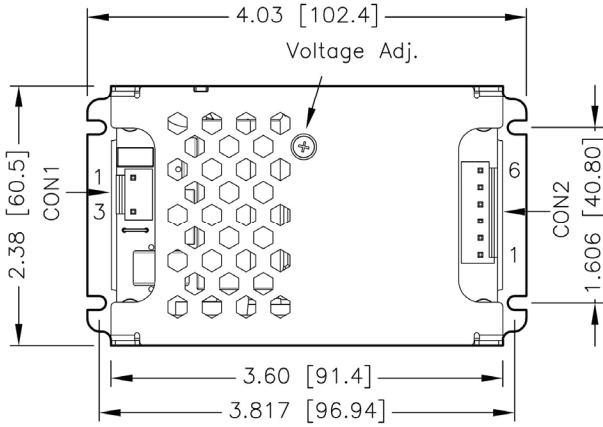
- All dimensions in inch (mm)
- Tolerance :x.xx±0.02 (x.x±0.5)
x.xxx±0.01 (x.xx±0.25)
- M3 × 0.5 screw locked torque MAX
5Kgf.cm/0.49N.m

UI40 DUAL AND TRIPLE OUTPUT

Mechanical Drawing

Enclosed Type

U Chassis Type



BOTTOM VIEW

BOTTOM VIEW

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