



**BEAR**  
POWER SUPPLIES

## BP Series Encapsulated AC/DC Power Supplies

- Industrial Safety Rated: IEC/UL/CSA/EN 62368-1
- Medical Safety Rated: IEC/ANSI/CSA/EN 60601-1
- 2 MOPP & BF Leakage
- EMC Emission: CISPR11 Class B
- Immunity: IEC 60601-1-2, 4<sup>th</sup> Edition
- Universal AC input: 90-264VAC, 47-63Hz
- Single output: 5-24 V, 5-30W
- TUV certified and CE marked
- Operating temperature: -40 to +70°C (with derating)
- Low inrush current
- Long life in harsh environments (MTBF 350,000 hours)
- RoHS compliant
- 3 Year Warranty

### Operation of the Enable Function

**Applies to Series:**  
BP3 through BP7

Most BP Series power converters feature an Enable pin that can be used to turn the converter on (open) or off (shorted to the "-" terminal).

This unique feature allows you to mount the power supply at the rear of the system chassis, near the AC line input, and control it from an ON / OFF switch on your system's front panel without taking the primary AC power to the front panel.

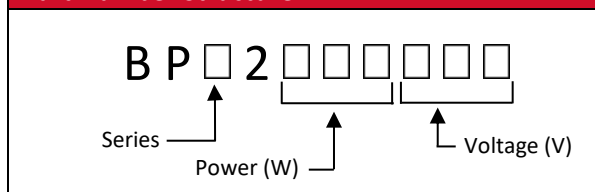
The Enable pin is referenced to the output negative terminal (labeled "-") and is thus isolated from the primary.

When left open, the Enable pin typically floats at about +4.6V. The input impedance for this node is greater than 10KΩ.

### BP Series Operating Specifications

	Condition	Min	Typical	Max
<b>Input</b>				
Input voltage (VAC)		90		264
Input frequency (Hz)		47		63
Input current (A)			▼	
5W output	110/220 VAC		0.1 / 0.06	
10W output	110/220 VAC		0.2 / 0.11	
15W output	110/220 VAC		0.28 / 0.19	
30W output	110/220 VAC		0.55 / 0.37	
Inrush current (A peak)	264 VAC			4
Earth Leakage current (µA)				500
Turn on Delay (Seconds)				0.5
<b>Output</b>				
Output voltage		See product charts pages 5-6		
Output current		See product charts pages 5-6		
Minimum Load (A)		0		
Output voltage accuracy (%)				+/- 2
Line regulation (%)				+/- 0.5
Load Regulation (%)	No Load to Full Load			+/- 1
Overshoot (%)				1
Noise & ripple pk-pk (%) - 10% load to full load	20MHz Filter		0.5	1
Transient Response Time(µSec) - 10% load to full load			500	
Temperature coefficient (%)			+/- 0.1	+/- 0.3
Hold-up time (ms)	115 VAC full load		15	
Capacitive Load (µF)				10000
Over-voltage protection (%)		105	115	130
Overload protection (%)	Auto recover		120	
Short Circuit Protection	Continuous, auto recover			
Patient Leakage Current	264VAC			500uA

### Part Number Structure



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	Condition	Min	Typical	Max
<b>General</b>				
Efficiency			82.5	
Switching frequency			▼	
5W and 10W Output		70		90
15W and 30W Output		60		80
MTBF			▼	
5W and 10W Output	MIL-HDBK-217F at 25C GB		>350KHrs	
15W and 30W Output			>350KHrs	
<b>Output</b>				
Isolation Voltage (VDC) – Primary to Secondary	Equivalent to 4000VAC		5656	
Isolation Voltage (VDC) – Primary to Chassis Ground	Equivalent to 1500VAC		2121	
Isolation	Two MOPP (Double)			
Minimum Creepage for two MOPP	8mm			
<b>Environmental</b>				
Operating temp range (°C)	Full load	- 40		+ 60
Operating temp range (°C)	Half load	- 40		+ 70
Storage temp range (°C)		- 40		+ 85
Cooling			Convection	
Operating Humidity (%)	Non-Condensing	0		95
Altitude			3000m	
<b>EMC &amp; Safety</b>				
Safety Approvals -Industrial			IEC 62368-1:2019 3 <sup>rd</sup> UL 62368-1:2019 3 <sup>rd</sup> CAN/CSA C22.2 No. 62368-1:2019 EN62368-1:2014+A17:2017	
Safety Approvals – Medical			IEC 60601-1/A1:2012 EN60601-1:2006/A1:2013 ANSI/AAMI ES 60601-1/A1:2012 AAMI ES 60601-1:2005+A1 CAN/CSA-C22.2 No. 60601-1:2014	
Conducted Emissions	Tested at 120VAC & 230VAC		IEC 55011 (CISPR11), Class B	
Radiated Emissions	Tested at 120VAC & 230VAC		IEC 55011 (CISPR11), Class B	
Harmonic Current	Tested at 120VAC & 230VAC		IEC 610000-3-2, Class A	
Voltage Fluctuations	Tested at 120VAC & 230VAC		IEC 61000-3-3	
ESD Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-2, Level 4, Criteria A	
RF Field Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-3, Level 3, Criteria B	
EFT Burst Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-4, Level 3, Criteria A	
Surge Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-5, Level 3, Criteria A	
Conducted Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-6, 6Vrms, Criteria A	
Magnet Field Immunity	Tested at 120VAC & 230VAC		IEC 61000-4-8, Level 4, Criteria A	
Voltage Dips and Interruptions	Tested at 120VAC & 230VAC		EN 61000-4-11 70%, 40%, 0%, Criteria A, A, B	

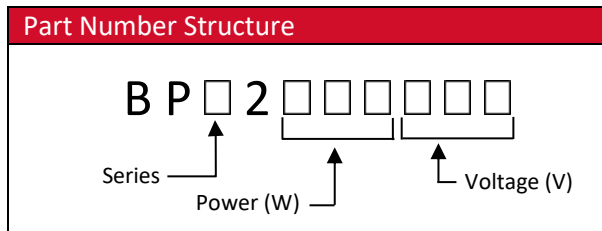
\* All specifications are measured at 25C, nominal input, full load, and humidity < 75%, unless specified otherwise

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## BP Series Encapsulated AC/DC Power Supplies



Series	Part Number	Input Connector	Output Connector	Power (W)	Voltage (V)
BP1	BP12005050	PCB Pin	PCB Pin	5W	5V
	BP12005120				12V
	BP12005150				15V
	BP12005240				24V
	BP12010050	PCB Pin	PCB Pin	10W	5V
	BP12010120				12V
	BP12010150				15V
	BP12010240				24V
	BP12015050	PCB Pin	PCB Pin	15W	5V
	BP12015120				12V
	BP12015150				15V
	BP12015240				24V
BP3	BP32005050	IEC320 C6	PCB Pin	5W	5V
	BP32005120				12V
	BP32005150				15V
	BP32005240				24V
	BP32010050	IEC320 C6	PCB Pin	10W	5V
	BP32010120				12V
	BP32010150				15V
	BP32010240				24V
	BP32015050	IEC320 C6	PCB Pin	15W	5V
	BP32015120				12V
	BP32015150				15V
	BP32015240				24V
	BP32030050	IEC320 C6	PCB Pin	30W	5V
	BP32030120				12V
	BP32030150				15V
	BP32030240				24V

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## BP Series Encapsulated AC/DC Power Supplies

Series	Part Number	Input Connector	Output Connector	Power (W)	Voltage (V)
BP4	BP42005050	Terminal Block	Terminal Block	5W	5V
	BP42005120				12V
	BP42005150				15V
	BP42005240				24V
	BP42010050	Terminal Block	Terminal Block	10W	5V
	BP42010120				12V
	BP42010150				15V
	BP42010240				24V
	BP42015050	Terminal Block	Terminal Block	15W	5V
	BP42015120				12V
	BP42015150				15V
	BP42015240				24V
	BP42030050	Terminal Block	Terminal Block	30W	5V
	BP42030120				12V
	BP42030150				15V
	BP42030240				24V
BP6	BP62005050	IEC320 C6	Terminal Block	5W	5V
	BP62005120				12V
	BP62005150				15V
	BP62005240				24V
	BP62010050	IEC320 C6	Terminal Block	10W	5V
	BP62010120				12V
	BP62010150				15V
	BP62010240				24V
	BP62015050	IEC320 C6	Terminal Block	15W	5V
	BP62015120				12V
	BP62015150				15V
	BP62015240				24V
	BP62030050	IEC320 C6	Terminal Block	30W	5V
	BP62030120				12V
	BP62030150				15V
	BP62030240				24V
BP7	BP72005050	Terminal Block	Terminal Block	5W	5V
	BP72005120				12V
	BP72005150				15V
	BP72005240				24V
	BP72010050	Terminal Block	Terminal Block	10W	5V
	BP72010120				12V
	BP72010150				15V
	BP72010240				24V
	BP72015050	Terminal Block	Terminal Block	15W	5V
	BP72015120				12V
	BP72015150				15V
	BP72015240				24V
	BP72030050	Terminal Block	Terminal Block	30W	5V
	BP72030120				12V
	BP72030150				15V
	BP72030240				24V

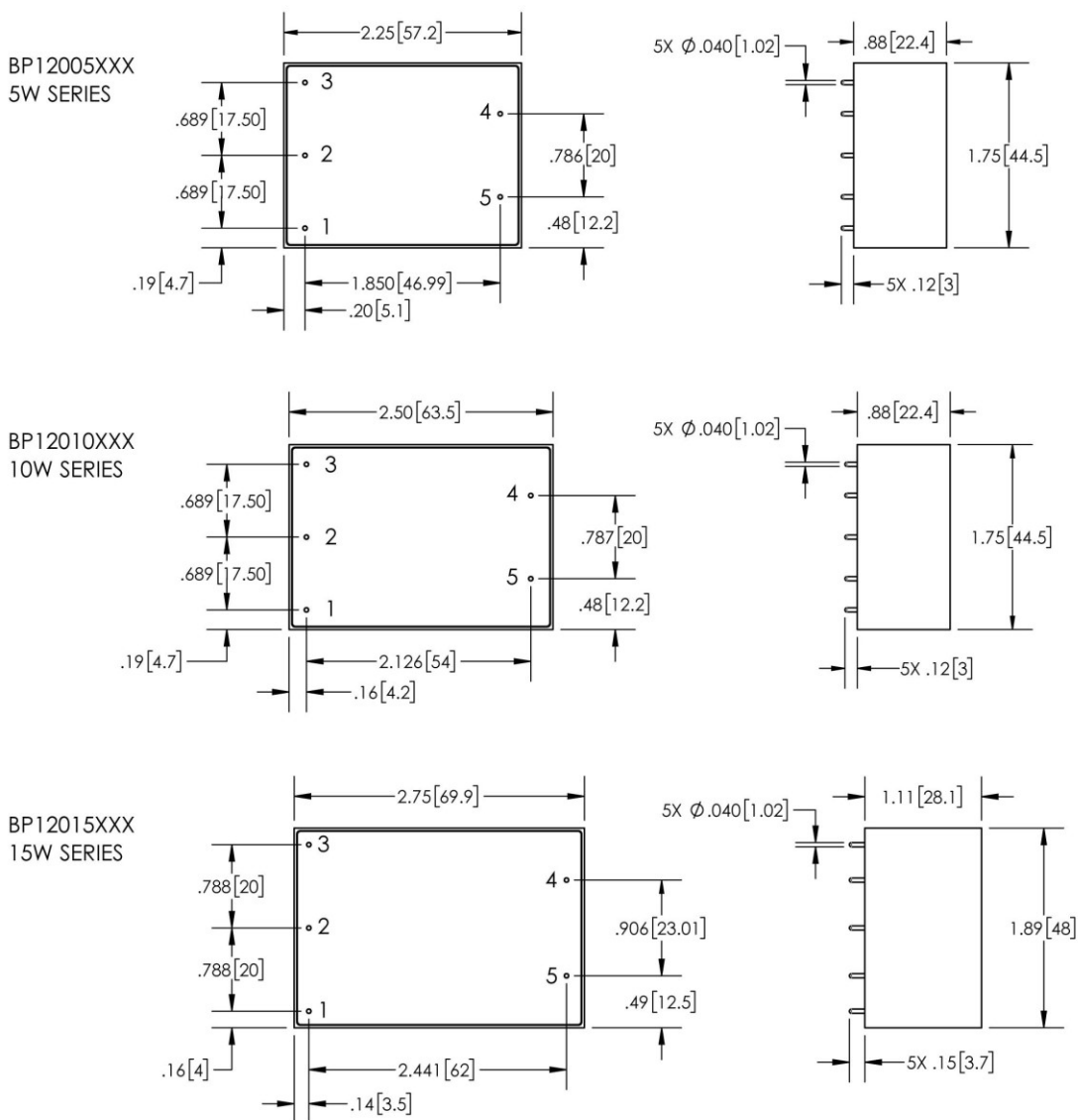
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## BP Series Encapsulated AC/DC Power Supplies

### MECHANICAL CONFIGURATION BP12XXX SERIES - PCB MOUNT SINGLE OUTPUT



Dimensions are in inches [mm]  
Tolerances: .XX +/- .02 [.50]  
.XXX +/- .010 [.250]  
Case Material: Diallyl Phtalate (UL 94V-0)  
Construction: Epoxy Encapsulated

Pin #	Function
1	AC - Ground
2	AC - Neutral
3	AC - Line
4	+Vout
5	-Vout

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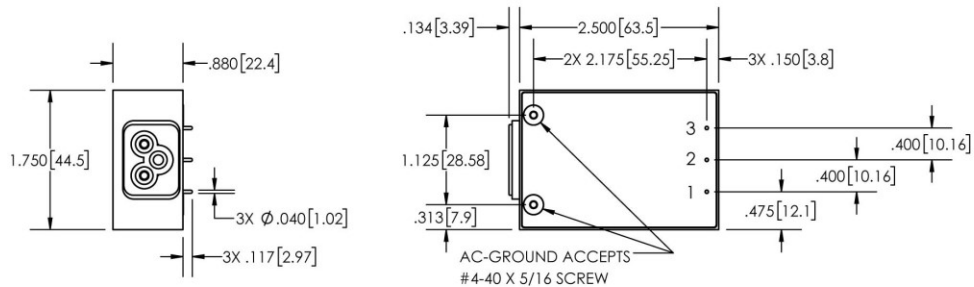


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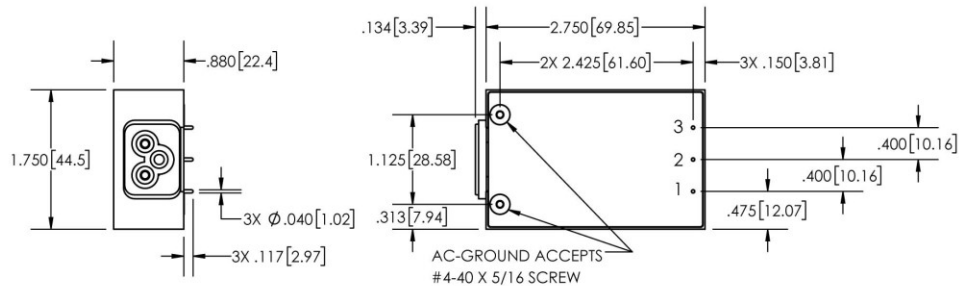
## BP Series Encapsulated AC/DC Power Supplies

### MECHANICAL CONFIGURATION BP32XXX SERIES - 3 PIN AC INPUT SINGLE OUTPUT

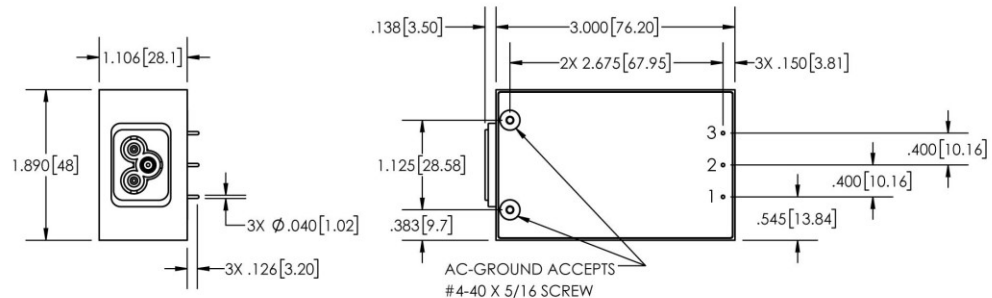
BP32005XXX  
5W SERIES



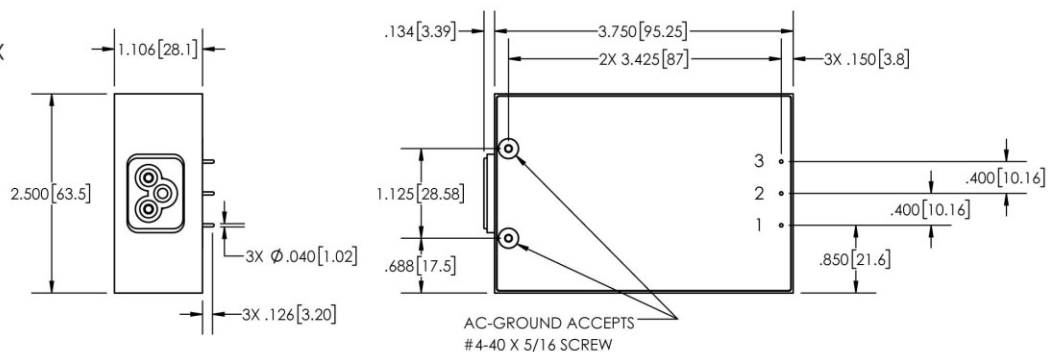
BP32010XXX  
10W SERIES



BP32015XXX  
15W SERIES



BP32030XXX  
30W SERIES



Dimensions are in inches [mm]  
Tolerances: .XX +/- .02 [.50]  
.XXX +/- .010 [.250]  
Case Material: Diallyl Phtalate (UL 94V-0)  
Construction: Epoxy Encapsulated

Pin #	Function
1	Enable
2	-Vout
3	+Vout

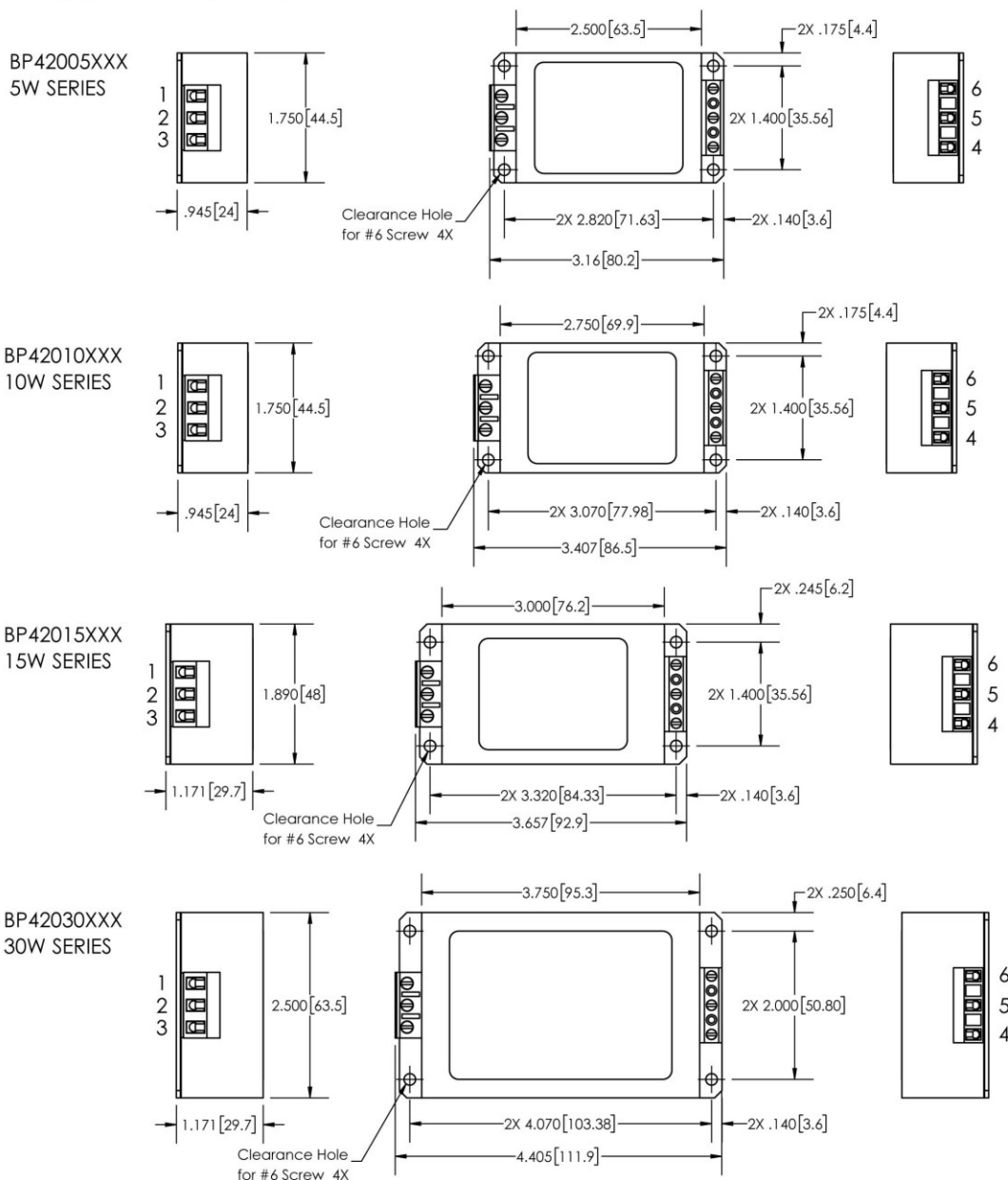
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## BP Series Encapsulated AC/DC Power Supplies

### MECHANICAL CONFIGURATION BP42XXX SERIES - CHASSIS MOUNT SINGLE OUTPUT TERMINAL BLOCK INPUT & OUTPUT



Dimensions are in inches [mm]  
Tolerances: .XX +/- .02 [.50]  
.XXX +/- .010 [.250]  
Case Material: Diallyl Phtalate (UL 94V-0)  
Construction: Epoxy Encapsulated

Pin #	Function
1	AC - Line
2	AC - Ground
3	AC - Neutral
4	+Vout
5	-Vout
6	Enable

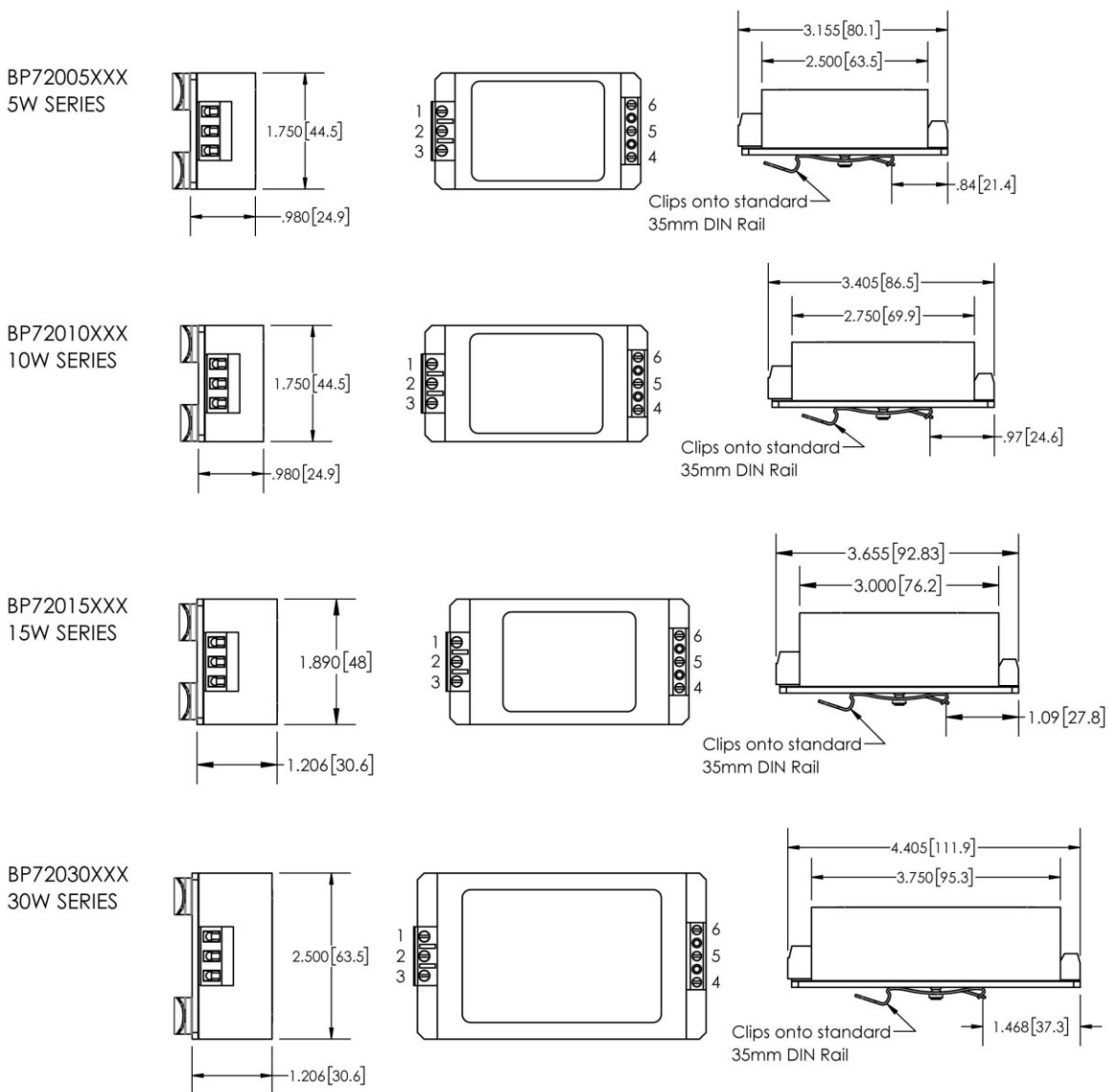
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## BP Series Encapsulated AC/DC Power Supplies

### MECHANICAL CONFIGURATION BP72XXX SERIES - DIN RAIL MOUNT 5W,10W,15W & 30W SINGLE OUTPUT TERMINAL BLOCK INPUT & OUTPUT



Dimensions are in inches [mm]  
Tolerances: .XX +/- .02 [.50]  
.XXX +/- .010 [.250]  
Case Material: Diallyl Phtalate (UL 94V-0)  
Construction: Epoxy Encapsulated

Pin #	Function
1	AC - Line
2	AC - Ground
3	AC - Neutral
4	+Vout
5	-Vout
6	Enable

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