

MPO-120S Series

Single Output, 180W Compact, Open Frame AC/DC Power Supplies



Key Features:

- 180W Output Power
- Universal 90-264 AC Input
- Power Factor Correction
- EN 60950 Approved
- High Efficiency
- Five Single Output Models
- Meets EN 55022 B
- >120 kHour MTBF



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Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	Universal	90		264	VAC
		120		370	VDC
Input Frequency		47		63	Hz
Input Current	See Model Selection Guide				
Inrush Current	Cold Start, 115 VAC			30.0	A Pk
	Cold Start, 230 VAC			60.0	
Power Factor Correction, See Note 1	115 VAC	0.99			W/VA
	230 VAC	0.95			
Safety Ground Leakage Current				0.50	mA

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage/Current	See Model Selection Guide				
Output Voltage Accuracy			±2.0		%
Line Regulation	V _{IN} = Min to Max		±1.0		%
Load Regulation	I _{OUT} = 5% to 100%		±1.0		%
Ripple & Noise (20 MHz), See Note 2	See Model Selection Guide				
Hold-Up Time	115 VAC	15			mSec
Temperature Coefficient			±0.03		%/°C
Over Voltage Protection	>125% V _{OUT} (Autorecovery)				
Overload Protection	See Note 3	130		180	%I _{OUT}
Short Circuit Protection	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input to Output	4,000			VAC
		5,656			VDC
	Input to Ground	2,000			VAC
Switching Frequency	Output to Ground	500			VAC
			65		kHz

EMI Characteristics

Parameter	Standard	Criteria	Level
Radiated Emissions	EN 55022		B
Conducted Emissions	EN 55022		B
Noise Immunity (EMS)	EN 55024		
Surge	EN 61000-4-4		±1 kV (L-N)
			±2 kV (L-FG & N-FG)

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Storage Temperature Range		-25		+85	°C
Cooling	Free Air Convection (See Derating Curve)				
Humidity	RH, Non-condensing			95	%

Physical

Size	See Mechanical Drawings (Page 4)				
Weight	5 V _{OUT} Model				12.33 Oz (350g)
	All Other Models				9.87 Oz (280g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	120			kHours
Safety Standards	UL 1950, EN 60950 (except 5 & 15 V _{OUT} models)				
Vibration	10~500 Hz, 2G 10 min/1 Cycle. Period of 60 min each along X, Y & Z Axis				

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Model Number	Input		Output					Max Output Power (W)	Voltage Adjust Range (VDC)	Max Ripple & Noise (mV)	Max Capacitive Load (μF)	Efficiency (% Typ)
	Current (A)		Voltage (VDC)	Current (A)								
	115 VAC	230 VAC		W/0 CFM	W/30 CFM	W/18 CFM	% Min.					
MPO-120S-05Y	2.0	1.0	5.0	20.0	30.0	---	5.00	150	4.7 - 5.3	100	100,000	87
MPO-120S-12Y	2.0	1.0	12.0	10.0	---	15.0	1.00	180	11.4 - 13.2	50	40,000	90
MPO-120S-15Y	2.0	1.0	15.0	8.0	---	12.0	1.00	180	13.5 - 16.0	50	35,000	90
MPO-120S-24Y	2.0	1.0	24.0	5.0	---	7.5	1.00	180	22.8 - 26.4	100	20,000	93
MPO-120S-48Y	2.0	1.0	48.0	2.5	---	3.75	1.00	180	45.6 - 52.0	200	1,200	93

For U-channel and enclosed models, see MPU-120S Datasheet

Notes:

- PFC meets EN61000-3-2.
- Ripple and noise is measured at 20 MHz bandwidth using a 0.1 μF and a 47 μF capacitor connected in parallel as close to the power supply terminals as possible.
- Overload protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
- These units will operate at no load without damage. However they may not meet all specifications. The recommended minimum load is given in the model selection chart above.
- Each unit includes an input fuse. Since this fuse is not field replaceable, it is recommended that an external fuse be used on the input of the power supply for protection. For these units, a 3A/250V slow blow fuse is recommended.

Model Number

MPO-120S-XXY

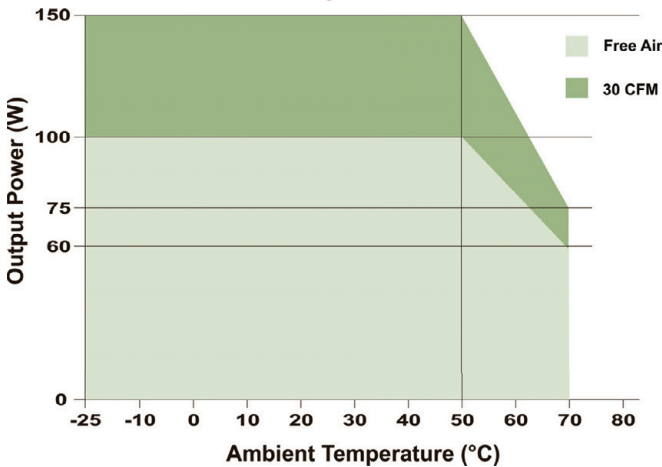
Mechanical Configuration
O = Open Frame
U = U-Channel

Outputs
S = Single

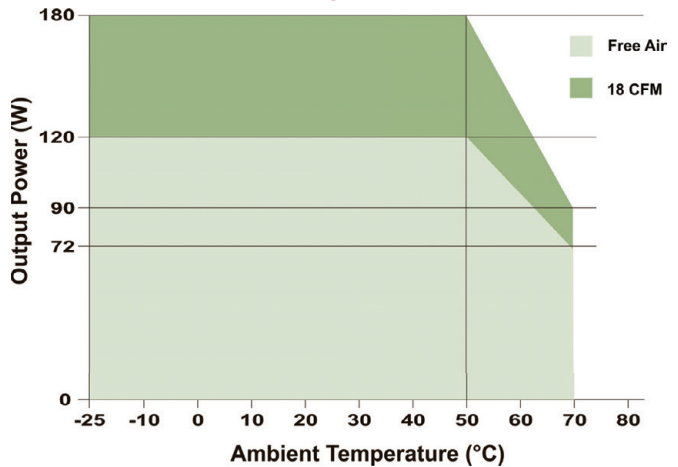
Output Voltage Selection
05 = 5 VDC 24 = 24 VDC
12 = 12 VDC 48 = 48 VDC
15 = 15 VDC

Connector Type
T = Terminal Block
A = Molex
B = Clamp Terminal Block

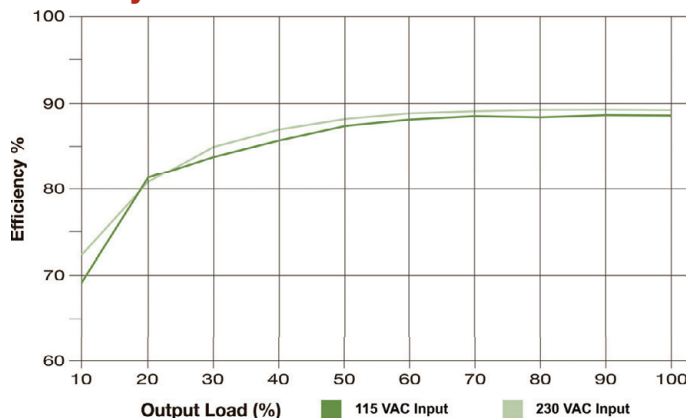
Temperature Derating: MPO-120S-05



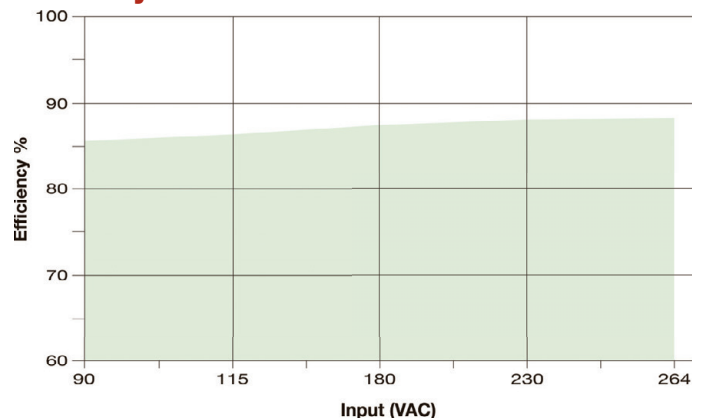
Temperature Derating: All Other Models



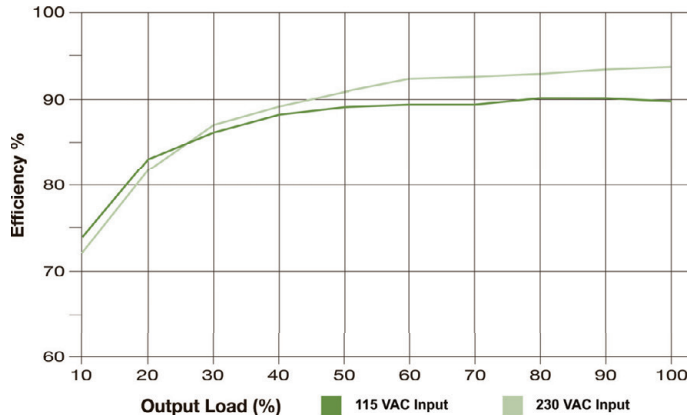
Efficiency vs Load: MPO-120S-05



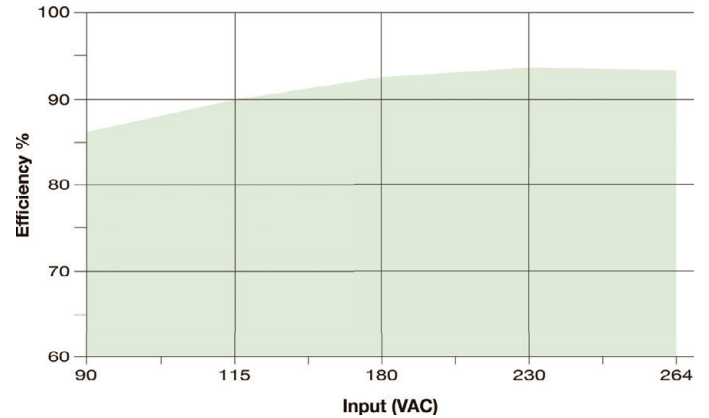
Efficiency vs VIN: MPO-120S-05



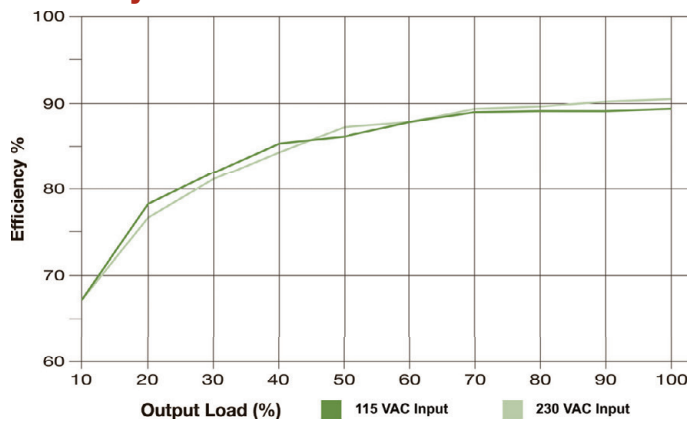
Efficiency vs Load: MPO-120S-12



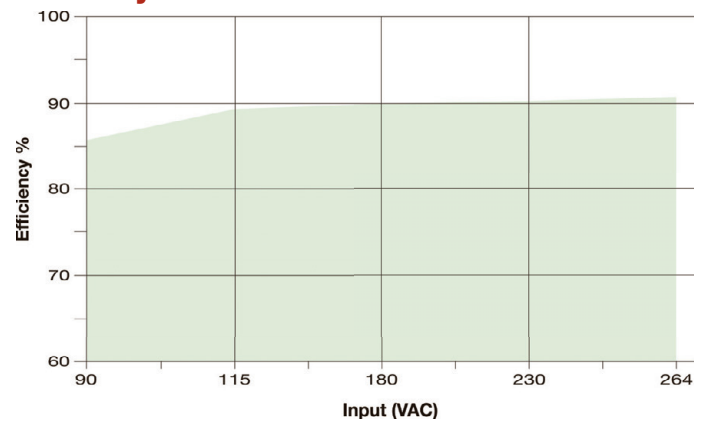
Efficiency vs VIN: MPO-120S-12



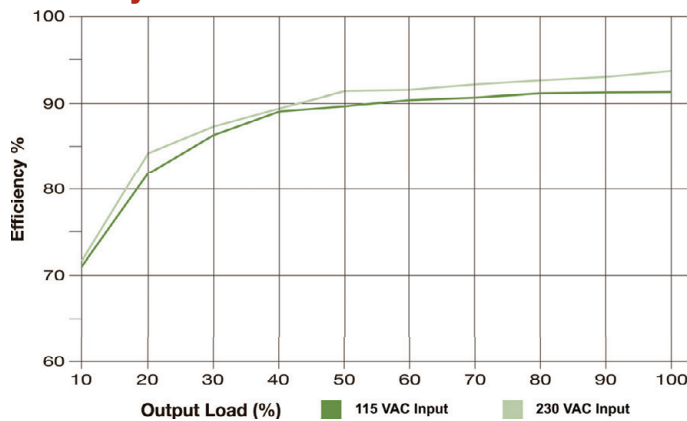
Efficiency vs Load: MPO-120S-15



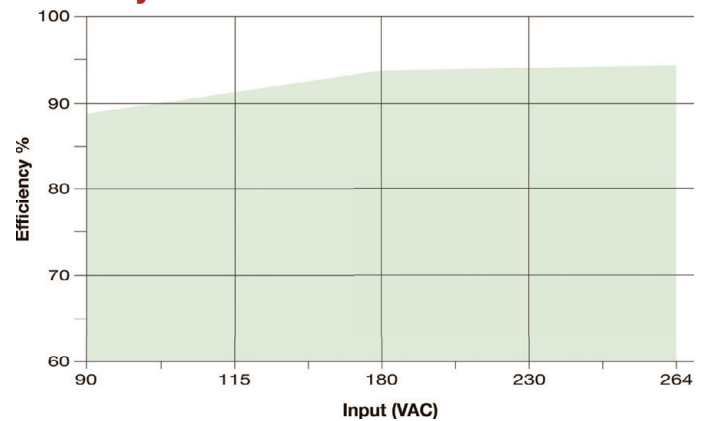
Efficiency vs VIN: MPO-120S-15



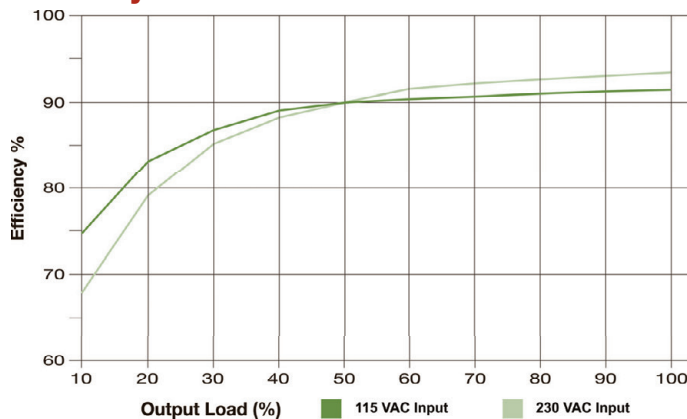
Efficiency vs Load: MPO-120S-24



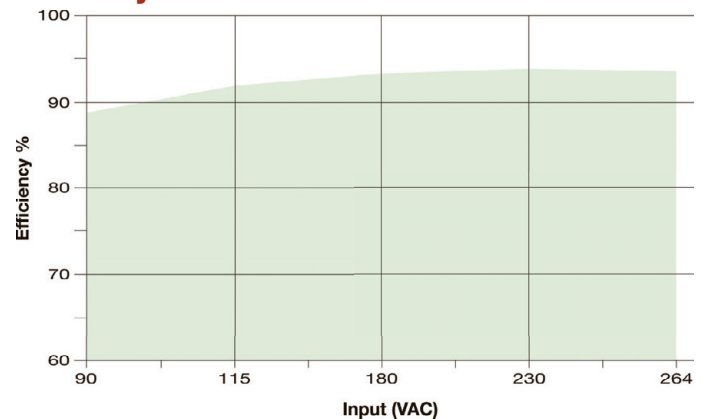
Efficiency vs VIN: MPO-120S-24



Efficiency vs Load: MPO-120S-48

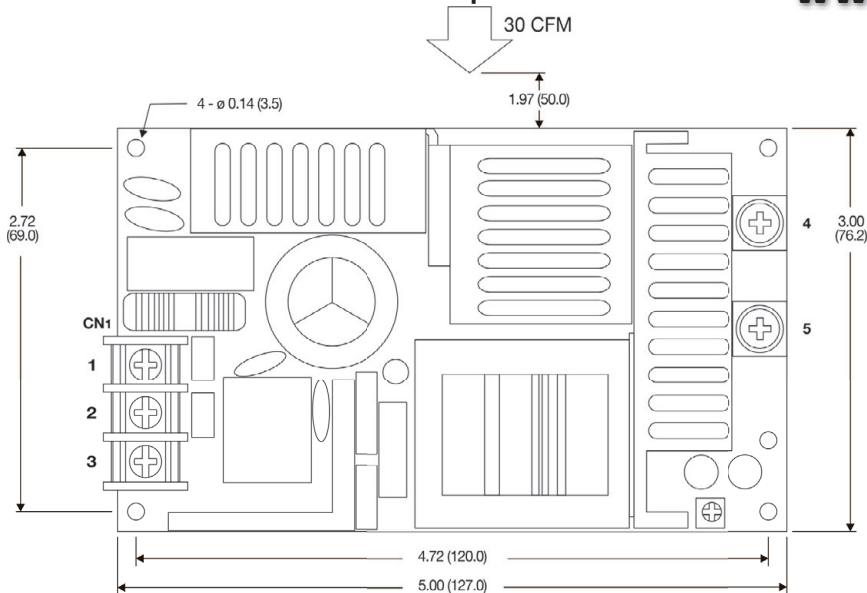


Efficiency vs VIN: MPO-120S-48



Mechanical Dimensions: 5V Output Model

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Connections

Input Connector (CN1):

- Barrier Strip Terminal Block:
- Anytek Connector: DG28S-B-03P:
- M3 Screws
- 3 terminals, 7.62 mm Centers
- Suitable Wire = 22 - 14 AWG

Term.	Function
1	AC-Line
2	AC-Neutral
3	Field Grnd

Output Connectors:

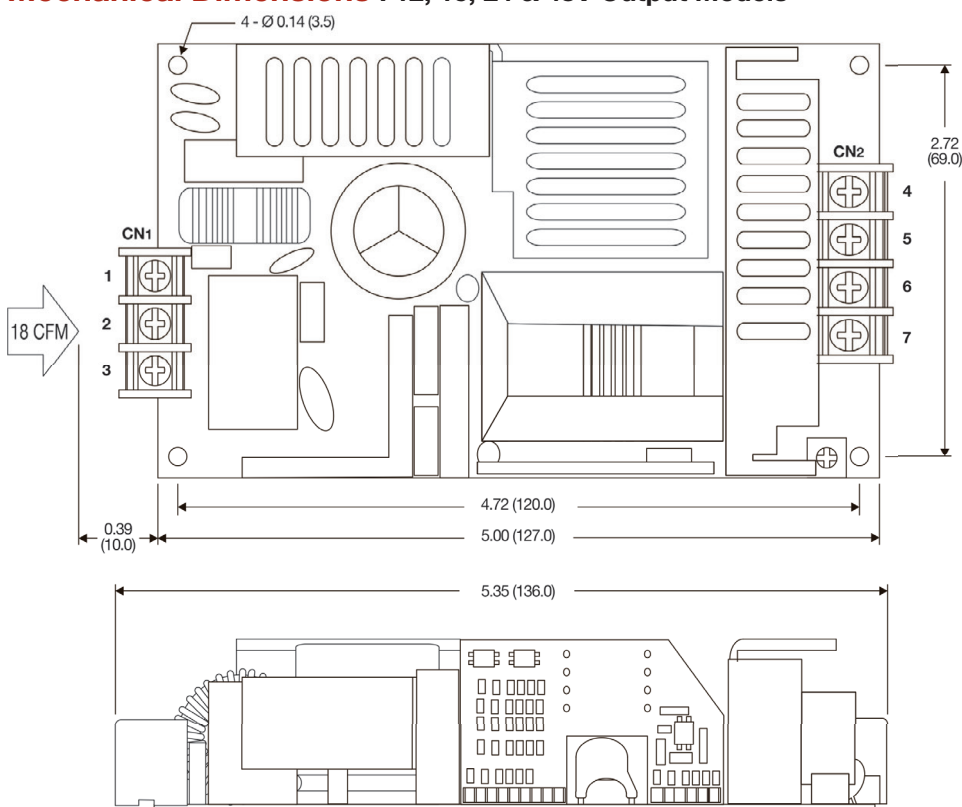
- Two PCB Terminals (Wire Lugs):
- PCB-50 (M5 Screws)
- Suitable Wire = 22 - 14 AWG

Term.	Function
4	+VOUT
5	-VOUT

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)

Mechanical Dimensions : 12, 15, 24 & 48V Output Models



Input Connector (CN1):

- Barrier Strip Terminal Block:
- Anytek Connector: DG28S-B-03P:
- M3 Screws
- 3 terminals, 7.62 mm Centers
- Suitable Wire = 22 - 14 AWG

Term.	Function
1	AC-Line
2	AC-Neutral
3	Field Grnd

Output Connector (CN2):

- Barrier Strip Terminal Block:
- Anytek Connector: DG28S-B-04P:
- M3 Screws
- 4 terminals, 7.62 mm Centers
- Suitable Wire = 22 - 14 AWG

Term.	Function
4	+VOUT
5	+VOUT
6	-VOUT
7	-VOUT

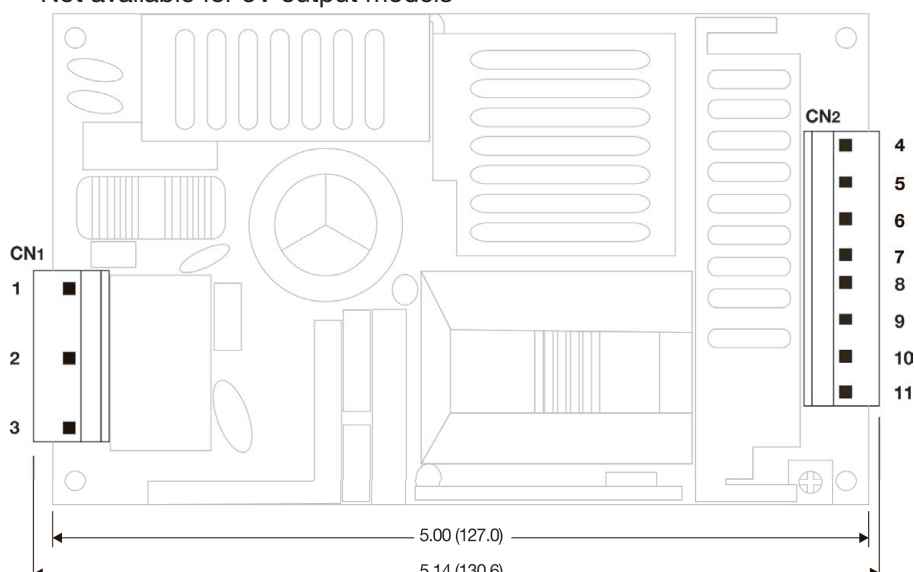
Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.02 (±0.50)

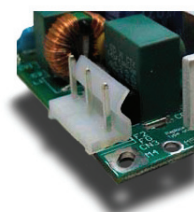
OPTIONAL CONNECTOR - "MOLEX" TYPE

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* Not available for 5V output models



Input



Output



Connections

Input Connector (CN1):

- "Molex" type connector:
Alex Connector: 8673W-050220
5 pins, 2 Removed
Mating Connector: 8639 type or equiv.

Pin	Function
1	AC-Line
2	AC-Neutral
3	Field Grnd

Output Connector (CN2):

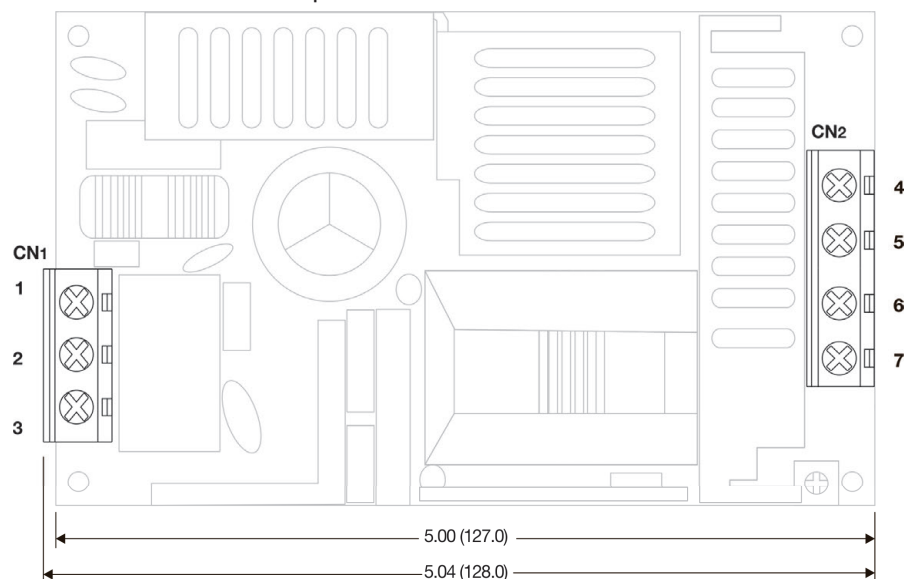
- "Molex" type connector:
Alex Connector: 8673W-080020
8 pins
Mating Connector: 8639 type or equiv.

Pin	Function
4	+VOUT
5	+VOUT
6	+VOUT
7	+VOUT

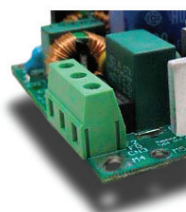
Pin	Function
8	-VOUT
9	-VOUT
10	-VOUT
11	-VOUT

OPTIONAL CONNECTOR - Clamp TYPE

* Not available for 5V output models



Input



Output



Connections

Input Connector (CN1):

- Clamp type connector:
Anytek Connector: TI03245
3 terminals, 7.5 mm Centers
Suitable Wire = 22 - 14 AWG

Term.	Function
1	AC-Line
2	AC-Neutral
3	Field Grnd

Output Connector (CN2):

- Clamp type connector:
Anytek Connector: TI04245
4 terminals, 7.5 mm Centers
Suitable Wire = 22 - 14 AWG

Term.	Function
4	+VOUT
5	+VOUT
6	-VOUT
7	-VOUT

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