

MPU-120S Series



Single Output, 180W Compact, U-Channel AC/DC Power Supplies

Key Features:

- 180W Output Power
- Universal 90-264 AC Input
- Power Factor Correction
- EN 60950 Approved
- Compact U-Channel
- Five Single Output Models
- Meets EN 55022 B
- "Finger Safe" Cover Avail.
- DIN Rail Kit Available



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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	
	Output to Ground	500				
Switching Frequency			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 (Pages 3 & 4)					
Weight	U-Channel			13.47 Oz (0.382 kg)		
	With Cover			14.10 Oz (0.400 kg)		

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 Vout 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 Selection Guide

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

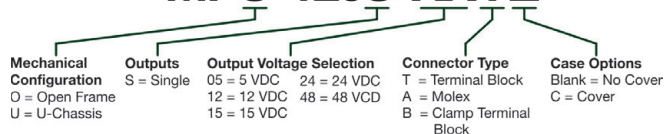
For open frame models, see MPU-120S Datasheet

Notes:

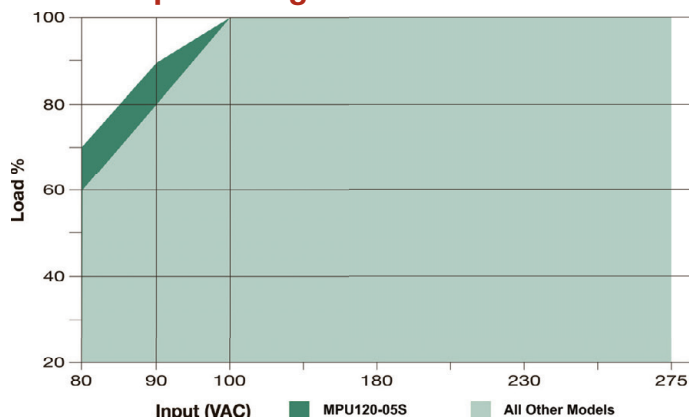
1. PFC meets EN61000-3-2.
2. Ripple and noise is measured at 20 MHz bandwidth using a 0.1 μ F and a 47 μ F capacitor connected in parallel as close to the power supply terminals as possible.
3. Overload protection is provided by a "hiccup mode" circuit. The unit recovers automatically when the fault condition is removed.
4. 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.
5. 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 15A/250V slow blow fuse is recommended.

Model Number

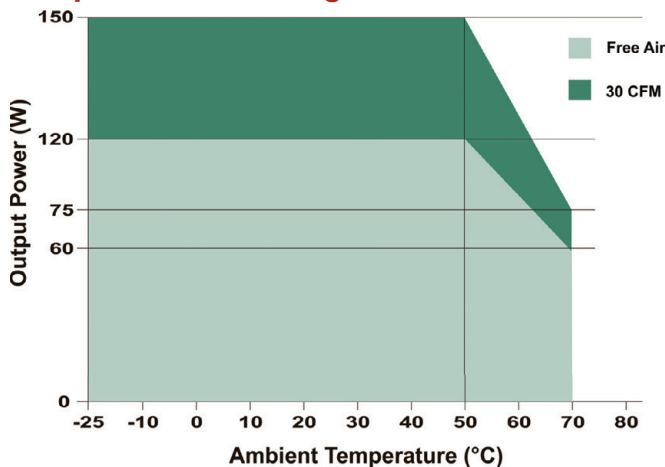
MPU-120S-XYZ



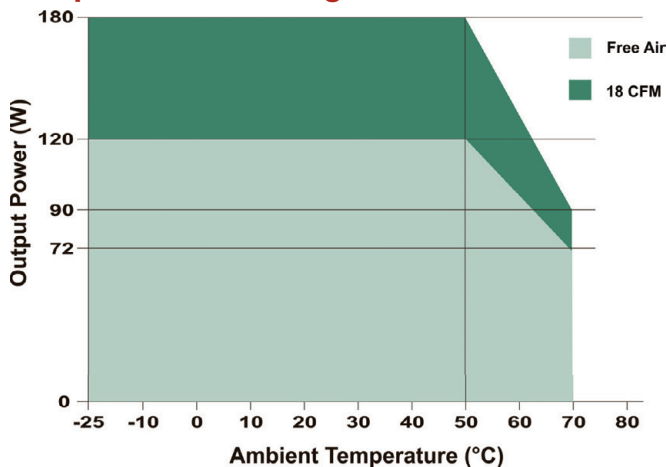
Load vs Input Voltage



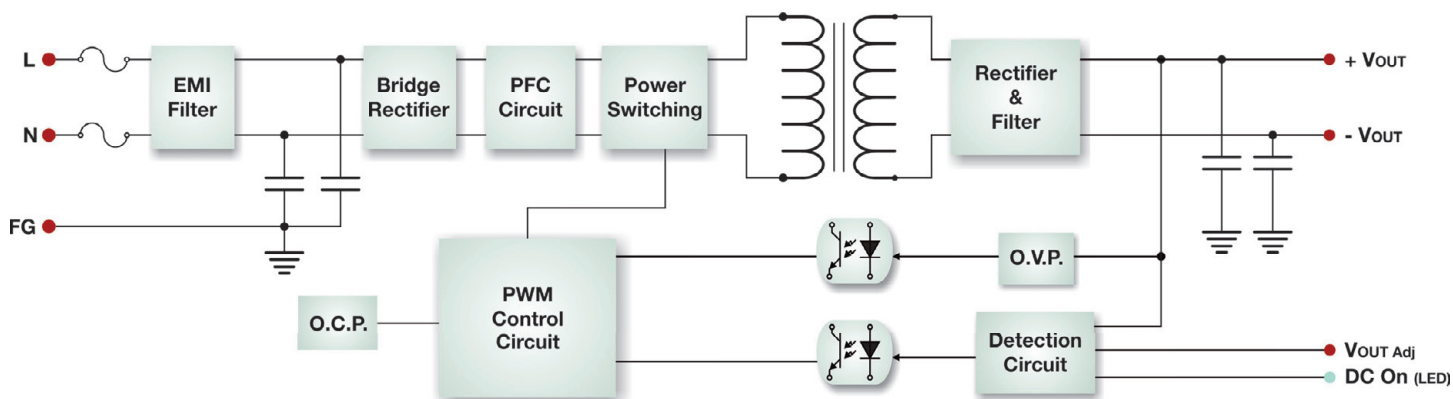
Temperature Derating: MPU-120S-05

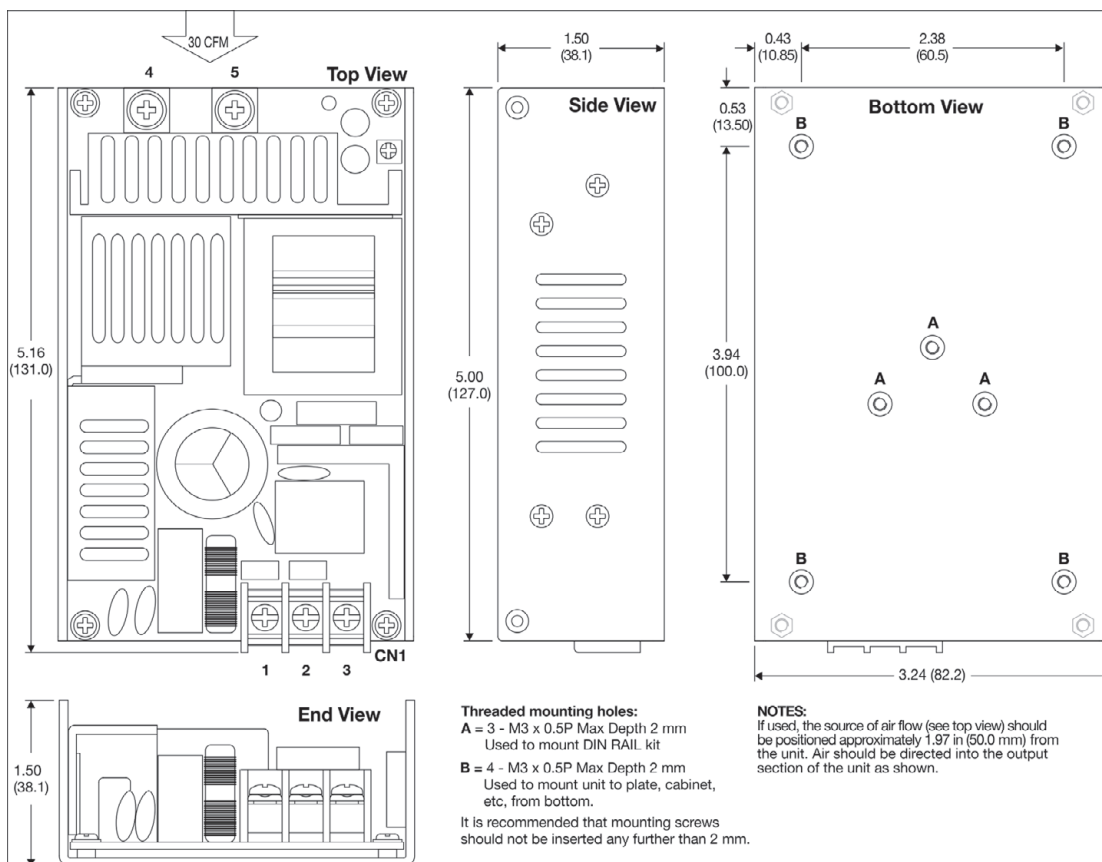


Temperature Derating: All Other Models



Block Diagram

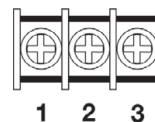




Connections

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:

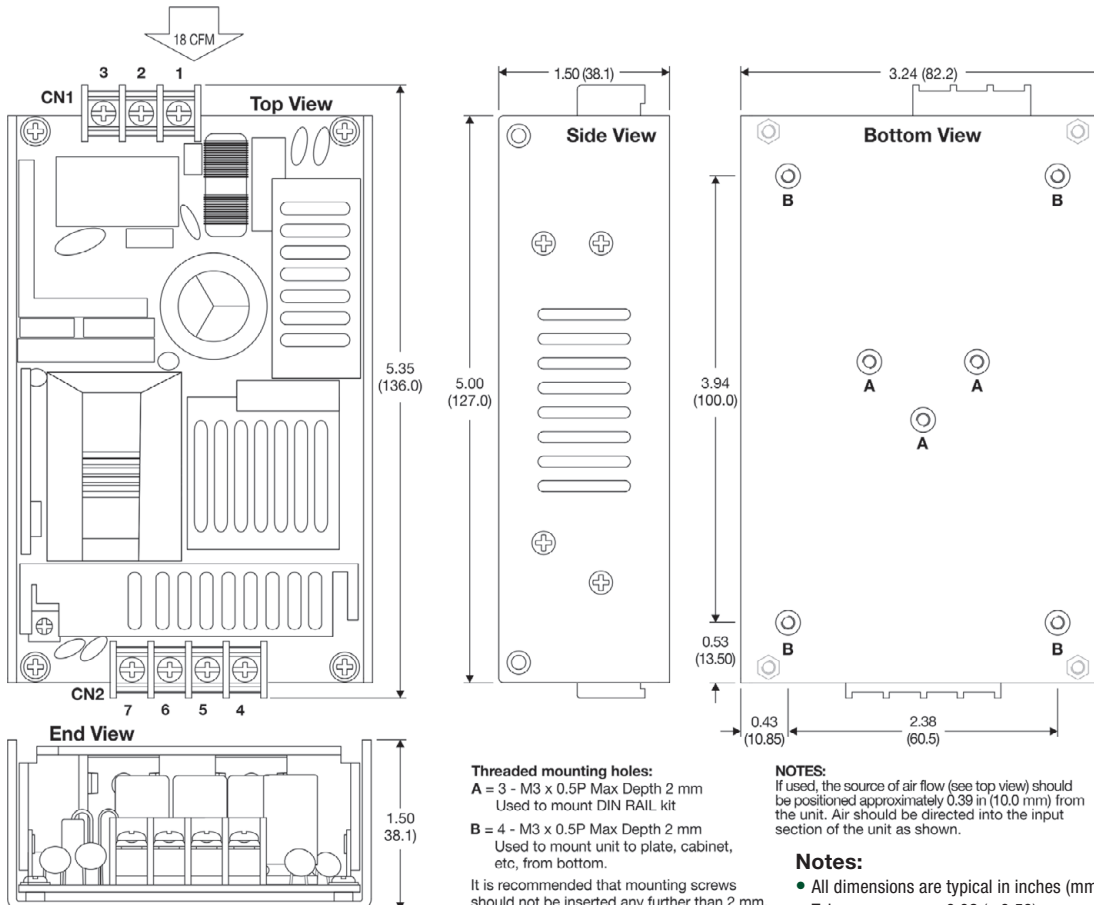
- Two PCB Terminals (Wire Lugs):
PCB-50 (M5 Screws)
Suitable Wire = 22 - 14 AWG

Term.	Function
4	+VOUT
5	-VOUT

Notes:

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

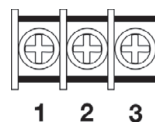
Mechanical Dimensions: All Other Models



Connections

Input Connector (CN1):

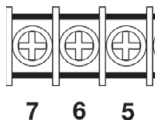
- Barrier Strip Terminal Block:
Anytek Connector: DG28S-B-03P:
M3 Screws
3 terminals, 7.62 mm Centers
Suitable Wire = 22 - 14 AWG



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

Output Connector (CN2):

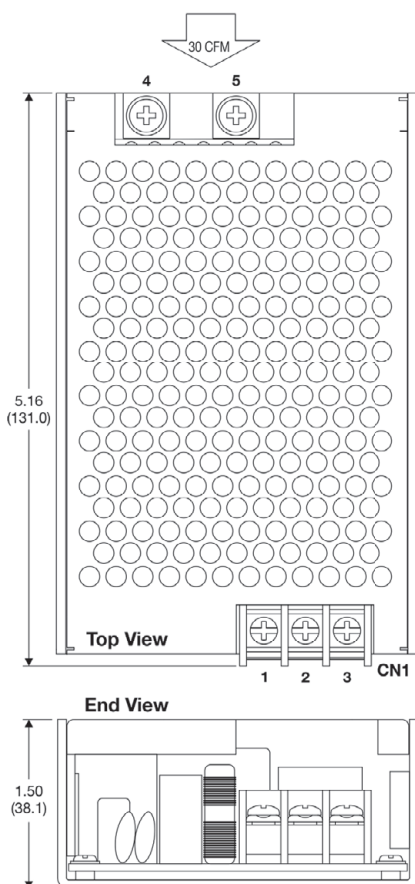
- Barrier Strip Terminal Block:
Anytek Connector: DG28S-B-04P:
M3 Screws
4 terminals, 7.62 mm Centers
Suitable Wire = 22 - 14 AWG



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

Mechanical Dimensions: 5V Output “E” Model

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Notes:

A = 3 - M3 x 0.5P Max Depth 2 mm
Used to mount DIN RAIL kit

B = 4 - M3 x 0.5P Max Depth 2 mm
Used to mount unit to plate, cabinet,
etc., from bottom.

If used, the source of air flow (see top view) should
be positioned approximately 1.97 in (50.0 mm) from
the unit. Air should be directed into the output
section of the unit as shown.

Notes:

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

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



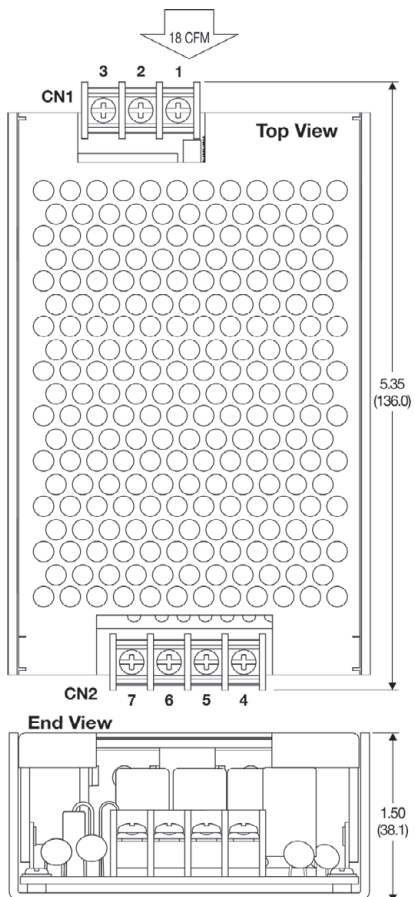
Term.	Function
1	AC-Line
2	AC-Neutral
3	Field Grnd

Output Connectors:

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

Term.	Function
4	+VOUT
5	-VOUT

Mechanical Dimensions: All Other “E” Models



Threaded mounting holes:

A = 3 - M3 x 0.5P Max Depth 2 mm
Used to mount DIN RAIL kit

B = 4 - M3 x 0.5P Max Depth 2 mm
Used to mount unit to plate, cabinet,
etc., from bottom.

It is recommended that mounting screws
should not be inserted any further than 2 mm.

NOTES:

If used, the source of air flow (see top view) should
be positioned approximately 0.39 in (10.0 mm) from
the unit. Air should be directed into the input
section of the unit as shown.

Notes:

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

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 Connector (CN2):

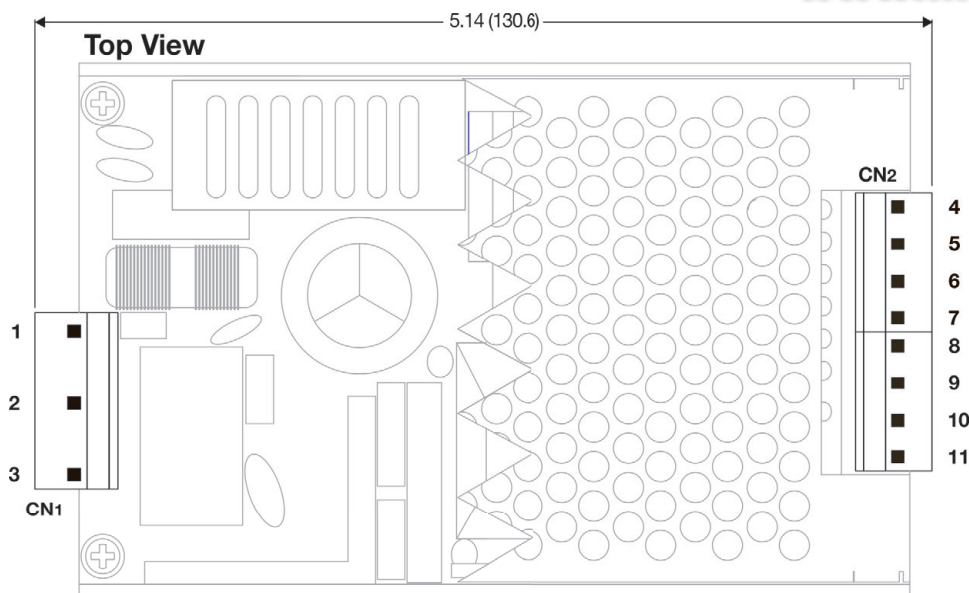
- Barrier Strip Terminal Block:
Anytek Connector: DG28S-B-04P:
M3 Screws
4 terminals, 7.62 mm Centers
Suitable Wire = 22 - 14 AWG



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

OPTIONAL CONNECTOR - "MOLEX" TYPE

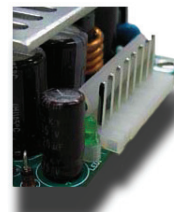
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Input



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

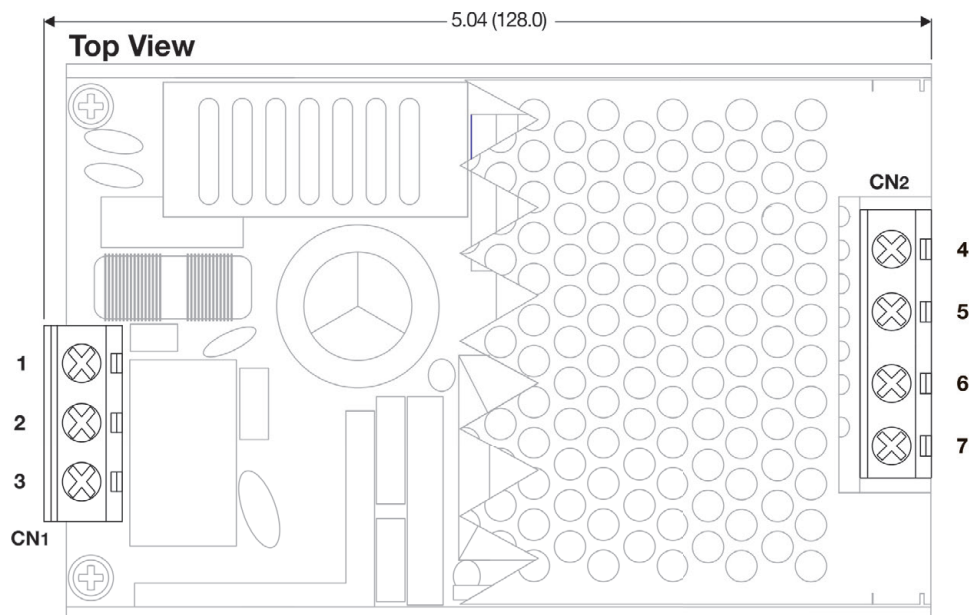
Output Connector (CN2):

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

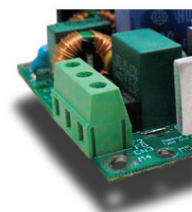
Pin	Function
4	+VOUT
5	+VOUT
6	+VOUT
7	+VOUT

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

OPTIONAL CONNECTOR - Clamp TYPE



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

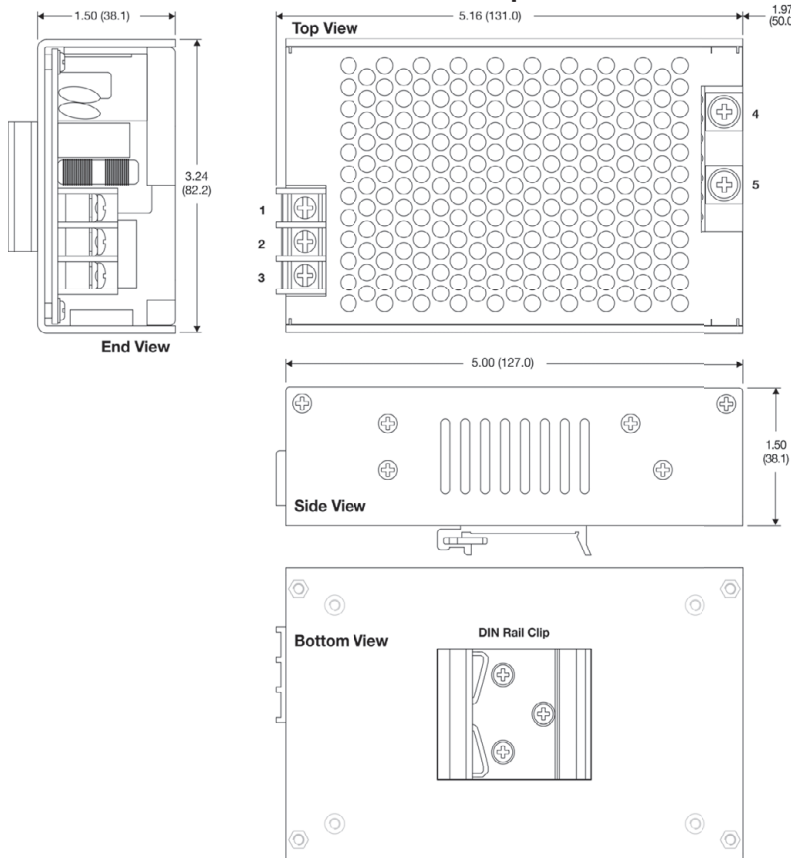
Output Connector (CN2):

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

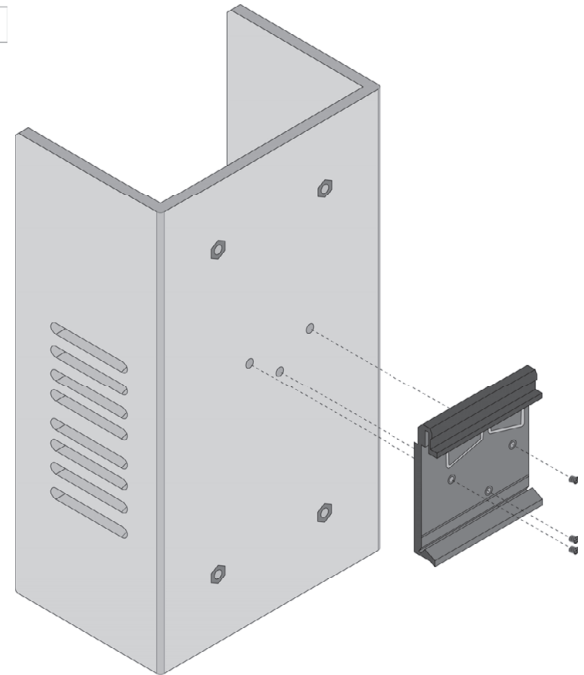
Term.	Function
4	+VOUT
5	+VOUT
6	-VOUT
7	-VOUT

OPTIONAL DIN Rail Mount: 5V Output Model

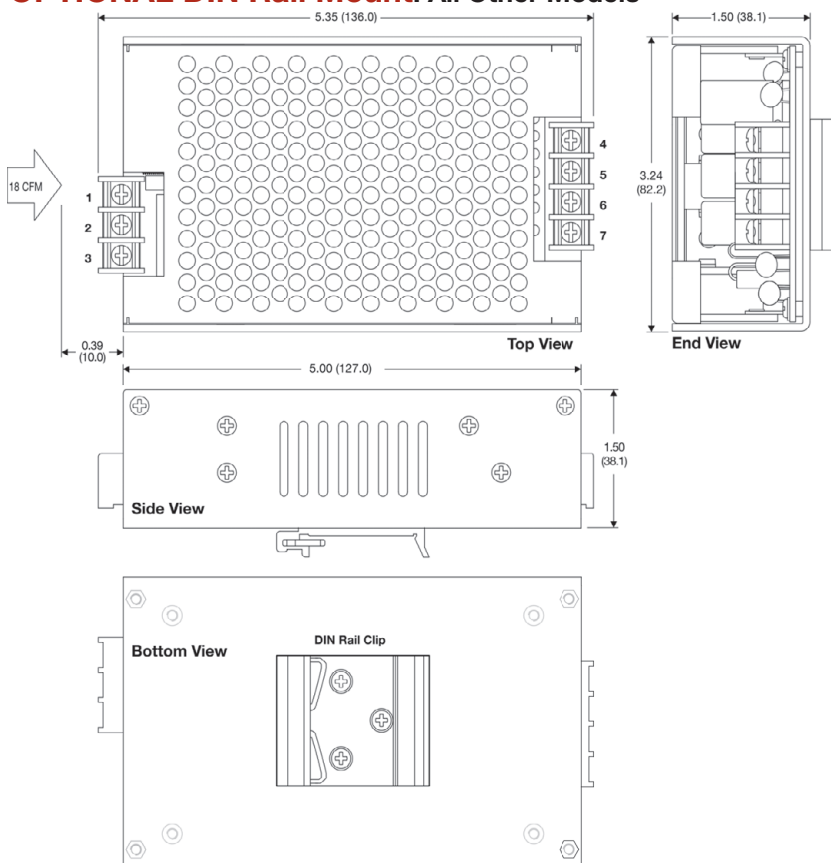
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DIN Rail Mounting Kit



OPTIONAL DIN Rail Mount: All Other Models



A DIN Rail Mounting kit is available from **MPD**, for use with **MPU-120™C** models. The kit contains a mounting clip and three screws.

The clip is attached to the bottom of the unit using the three threaded holes marked "A" on the mechanical diagrams. Screws should not be inserted over 2 mm into the threaded inserts,

To order the kit, ask for part no: **MPU-120S-DRK**

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