*DIN*ergy™ MD120 SERIES

Features

- ✧ Compact size, high efficiency and DIN Rail mounting
- ✧ 100-240VAC wide-range auto-selection input
- ✧ Overcurrent, shortcircuit, and overvoltage protection
- ✧ DC OK LED Indicator w/remote indicator contact
- ✧ Adjustable DC output voltage
- ✧ Power boost for unusual start-up loading
- ✧ Parallel operation capable for power and redundancy
- ✧ Safety meets UL508, UL60950 and IEC60950
- ✧ CE EN61000-3-2 compliant active PFC filtering
- ✧ EMI meets FCC15 B, EN55022 B and CISPR22 B
- ✧ High reliability, MTBF>200,000 hrs
- ✧ Operating temperature: -10°C to 70°C
- ✧ 3 year warranty
- ✧ UL 1604 Class 1 Division 2 compliant

Applications

Micron *DIN*ergy™ units are suitable for industrial and commercial process and control systems, office facilities, telecom equipment, mechanical equipment, transport equipment, service and building automation, and electronic and electrical instrumentation.

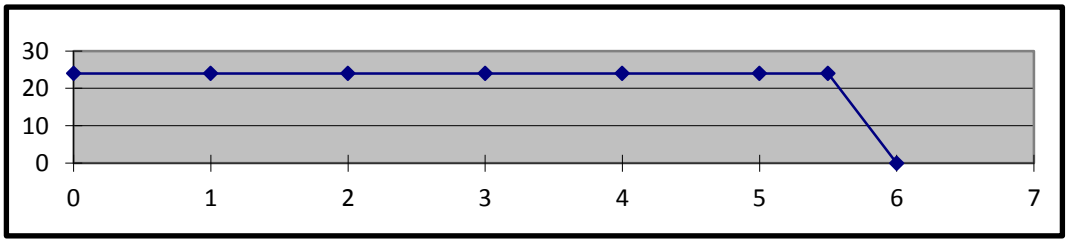
Specifications

Model	MD120-12-1	MD120-24-1	MD120-48-1
Input Voltage	Rated 100-240VAC, 90-350VDC		
	Range 85-264VAC		
Input Current	0.6A/240VAC, 1.3A/110VAC	0.7A/240VAC, 1.6A/110VAC	
Frequency	50-60Hz, ±6%		
Inrush Current	Typ.<15A		
Earth Leakage Current	<3.5mA		
Start-up Time	<1S		
PFC/Harmonics	>0.95/Meets EN61000-3-2		
Rated Output Voltage/Current	12VDC/8A	24VDC/5A	48VDC/2.5A
Output Pre-regulation (Set Point)	12.5±0.5%	24.5±0.5%	48.5±0.5%
Output Voltage Regulation	10-16VDC	22-28VDC	46-52VDC
Rated Output Current	8-6A	5-4.3A	2.5-2.3A
Min. Output Current	0A	0A	0A
Output Peak Current	120% of rated output current		
Efficiency	86%/230V	88%/230V	88%/230V
Ripple & Noise	<=100mV		
Load Regulation	1%		

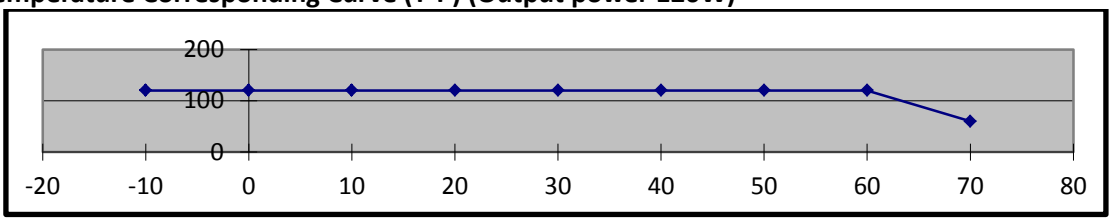
Voltage Regulation	0.5%		
Temperature Coefficient	0.02%/℃		
Hold-up Time	>=20mS		
Transient Overshoot	Load is changed from 50% to 100% step by step at a rate of 0.2A/μS, overshoot<500mV		
Reverse Voltage Immunity	<16V	<35V	<63V
Safety	UL60950, UL508, EN60950, UL 1604		
EMC	FCC 15B, EN55022 B, EN61000-3-2, IEC61000-4-2,3, 4, 5, 6,8& 11		
Reliability	MIL HDBK 217F, 200,000hrs		
Case Safety Standard	IEC60529, IP 20		
Pollution Standard	EN50178 Class 2		
Electrical Surge Protection	UL60950 Class I, PE is connected to ground		
Outside Dimension	2.56 (65.0) ╳ 4.13 (105.0) ╳ 4.89 (124.0)		
Weight	750g (1.37 lb)		

Performance

Output Characteristic Curve (I-V) (Output voltage 24VDC)



Temperature Corresponding Curve (T-P) (Output power 120W)



Protection

Method	Threshold	Mode
Fuse	3.15AT, 250V	Delay
Shortcircuit Protection	Automatic Recovery	Automatically recovers to normal operation after failure is removed.
Overcurrent Protection	125-135% of rated output	
Overvoltage Protection	110-130% of rated output	
Overheat Protection	95℃	

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Operational and Mounting Requirements (All Metal Cased *DIN*ergy Units)

Parallel Operation to Increase Output Power

To increase output power, the outputs of the same polarity of two identical units can be paralleled using load connection wires of the same gauge and length.

Parallel Operation for Redundancy Application

To increase reliability of the system, two units of the same model can be used for redundancy operation. In normal state, the units each provides 50% of load current. When failure occurs on the circuit of the unit 1, the unit 2 is able to immediately and automatically replace unit 1 to continue the operation and provides 100% load current. The same result applies when the failure occurs on the circuit of unit 2. In this application, a fuse or decoupling diode is added at the positive outputs of the two units.

Operating Environment

Operating temperature MDP Series: -10 to 60ºC
Operating temperature MD Series: -10 to 70ºC
Operating humidity: 5% to 90%RH, non-condensing
Storage and shipping temperature MDP Series: -25 to 85 ºC
Storage and shipping temperature MD Series: -40 to 85 ºC
Vibration: meet IEC 68-2-6
Shock: meet IEC 68-2-27

Cooling Method
MD Series
Air convection cooling is employed. From the ambient temperature of -10°C to 60°C, full rated output power available. From 60°C to 70°C, the unit is derated at 6W/1°C, and to half load when at 70°C.

Panel

Input Terminal

1). Connect L to AC line or DC positive pole.
2). Connect N to AC neutral or DC negative pole.
3). ⏚ (PE): connect to ground.

Output Terminal

1). DC OK output signal terminal
(not available on 30, 50 and 60 watt unit)
2). "+", DC positive output terminal (two)
3). "-", DC negative output terminal (two)

DC OK Indicator

1). The indicator lights up indicating the unit operates normally.
2). The indicator flashes indicating output voltage is over normal value or load shortcircuit, overload or overheat occurs on the secondary.
3). The indicator turns off indicating power failure or there is no AC input.

Active DC OK Output Signal Terminal

For users' convenience to remotely inspect the operating status of the unit, an active DC OK output signal terminal is provided inside the unit. Users can connect an indicator or the equivalent (40mA) between the terminal and output negative terminal for remote inspection. The indicator is similar as the DC OK indicator.

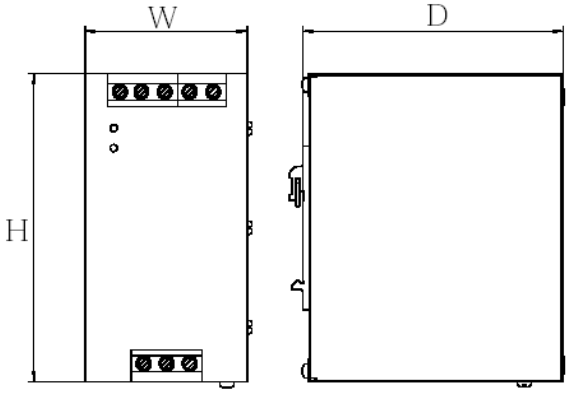
Output Voltage Adjustment Hole

By adjusting the potentiometer behind the panel hole with a small screwdriver while measuring the voltage across the positive terminal & negative terminal with a multimeter, the user can set the DC output voltage to a desired value.

Mounting Method

A TS35/7.5 or TS35/15 rail of certain length corresponding to the width of the unit is provided for convenient DIN rail mounting. The required mounting clearance space for left/right is 25mm each, and above/below is 70mm each.

Mechanical Specifications



Model	W (Width)	D (Depth)	H (Height)	Weight	Connectors	Torque lb/in
MD120	2.56" (65)	4.13" (105)	4.88" (124)	750g (1.65lbs)	AWG 24-10 (0.2 - 5.3mm^2)	4.4