

# MDR-24S Series

## Low Cost, 24W DIN Rail Mount Single Output AC/DC Power Supplies

New Industrial  
Supplies!!



### Key Features:

- 24W Output Power
- DIN Rail Mountable
- Universal AC Input
- Narrow 0.886" Case
- EN 60950 Approved
- 5, 12, & 24 VDC Outputs
- Meets EN 55022 Class B
- >200 kH MTBF
- **LOW COST!**



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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
				370	VDC
Input Frequency		47		63	Hz
Input Undervoltage Lockout		72		88	VAC
Inrush Current, Cold Start	110 VAC		16		A
	220 VAC		30		A

#### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±2.0		%
Line Regulation	Vin = ±10%		±0.1		%
Load Regulation (Note 1)	Iout = 10% to 90%		±1.0		%
Hold Time	230 VAC, Full Load		80		mSec
Ripple & Noise (20 MHz) (Note 2)			50		mV P-P
Over Current Protection	MDR-24-05S		4.4		A
	MDR-24-12S		2.4		
	MDR-24-24S		1.3		
Temperature Coefficient			±0.02		%/°C
Output Short Circuit	Continuous With Autorecovery				

#### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	Input - Output	3,000			VAC
Switching Frequency		60		100	kHz

#### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-25	+25	+70	°C
Storage Temperature Range		-25		+85	°C
Power Derating	3.75%/°C Above 55°C				
Humidity	RH, Non-condensing			95	%

#### Physical

Case Size	3.99 x 4.51 x 0.886 Inches (99.0 x 114.5 x 22.5 mm)				
Case Material	Green Plastic				
Case Protection	IP20				
Connection	Screw Terminal				
Mounting	35 mm DIN Rail				

#### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	200			kHours
Safety Standards	UL 1950, EN 60950, IEC 60950				
Safety Class	Class 1				
EMI Compliance	Compliance to EN 55011, EN 55022 (CISPR22) Class B				
EMS Immunity Compliance	Electrostatic Discharge (ESD)	EN 6100-4-2, 4kV/8 kV			
	RF Field Susceptibility	EN 6100-4-3, 3V/m			
	Fast Transients/Bursts On Mains Line	EN 6100-4-4, 2 kV			
	Surge	EN 6100-4-5, Level 3, 1 kV/2 kV			

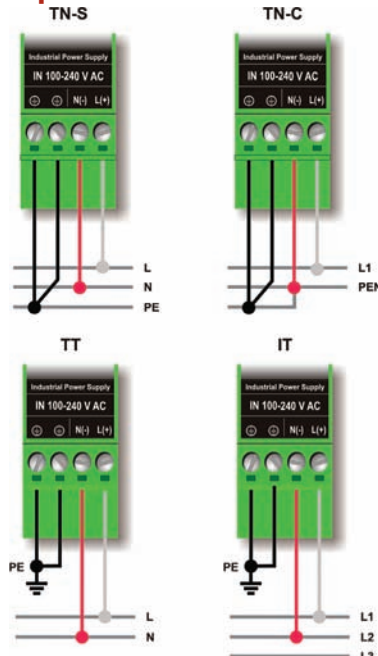
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Model Number	Rated Power (W)	Input			Output		Overvoltage Protection (VDC)	Efficiency (% Typ)	Fuse Rating Slow-Blow (A)
		Voltage (VAC)		Current (A)	Voltage (VDC)	Current (A) Max			
		Universal Range	115 VAC	230 VAC					
MDR-24S-05	20	90 - 264	0.45	0.22	5	4.0	6.5	75	3.15
MDR-24S-12	24	90 - 264	0.45	0.22	12	2.0	20.0	85	3.15
MDR-24S-24	24	90 - 264	0.45	0.22	24	1.0	30.0	87	3.15

**Notes:**

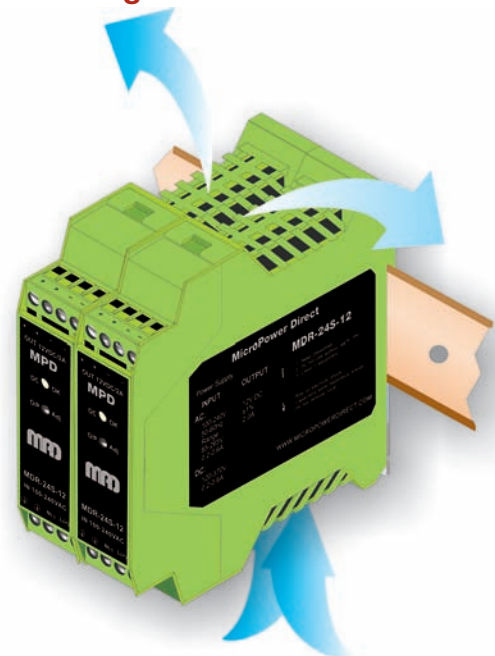
1. Load regulation is specified for a load change of 20% to 100%.
2. Overload protection is current limiting. The unit recovers automatically when the fault is removed.
3. Over voltage protection is a shut down type. The unit recovers automatically when the fault is removed.
4. The MDR-24 meets class 1 safety requirements with a proper PE connection. To insure compliance to EN 60950, it must be possible to switch off the unit using suitable disconnection device external to the power supply.
5. It is recommended that a fuse be used on the input of a power supply for protection. For the MDR-24 series, a 250 VAC 3.15A is recommended.

**Input Connection**



The MDR-24 series may be connected to single or three-phase AC networks as shown. All wires should be 14-25 AWG. For safety, all wires should be stripped approximately 7 mm, and any connections to the supply should only be made with the system power off. Do not operate without a proper PE connection.

**Mounting and Airflow**

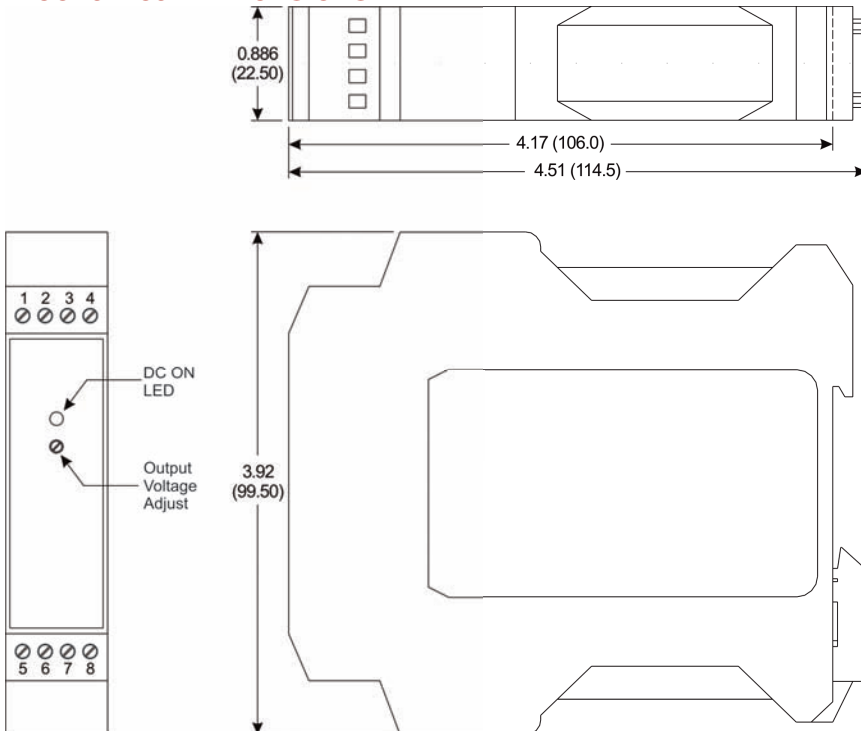


To allow proper ventilation, the MDR-24 series should be mounted so they are vertically orientated with approximately 2 inches (50 mm) of clearance above and below the unit. No minimum spacing is required between units. Ventilation holes should not be covered and proper derating should be followed.

**Connections**

Pin	Function
1, 2	DC Output (+V)
3, 4	DC Output (-V)
5, 6	Earth (PE)
7	AC/Neutral (N-)
8	AC/Line (L+)

**Mechanical Dimensions**



**Installation/Removal**

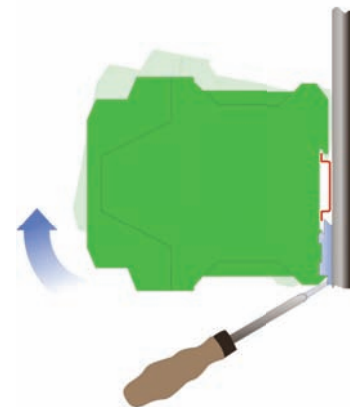
**Install**

To mount the unit to the DIN rail, tilt the unit rearwards from the top, fitting the mount over the top of the rail. Press back on the bottom front of the unit until it locks in place on the rail.



**Remove**

To remove the unit from the rail, pull the removal clip at the bottom rear of the unit downward with a screw driver. With the clip down, lift up on the unit from the bottom front until it clears the rail.



Before installation or removal all wiring should be disconnected and the main power to the system shut off.



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**Notes:**

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ±0.01 (±0.25)