

AMR5 SERIES

AC - DC DIN RAIL MOUNTABLE POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT



FEATURES

- UNIVERSAL INPUT 90~264VAC
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- LOW PROFILE FOR BUILDING AUTOMATION
- 3 YEARS WARRANTY



MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)
Single Output Models						
AMR5-05	90~264 VAC	60 WATTS	+ 5 VDC	12000 mA	78%	80%
AMR5-12	90~264 VAC	72 WATTS	+ 12 VDC	6000 mA	83%	86%
AMR5-15	90~264 VAC	75 WATTS	+ 15 VDC	5000 mA	83%	86%
AMR5-24	90~264 VAC	100.8 WATTS	+ 24 VDC	4200 mA	86%	89%
AMR5-24LS	90~264 VAC	91.2 WATTS	+ 24 VDC	3800 mA	86%	89%

SPECIFICATION

All Specifications Typical At Nominal Line, Full Load, 25°C Unless Otherwise Noticed

GENERAL						
Characteristics	Conditions		min.	typ.	max.	unit
Switching frequency	Vi nom, Io nom		35		45	KHz
Isolation voltage	Input-Output		3000/4242			VAC / VDC
Isolation resistance	Input-Output, @ 500VDC		100			MΩ
Ambient temperature	Operating at Vi nom		-40		+ 71	°C
Derating (see derating curve)	Vi nom, from +61°C to +71°C				2.5	% / °C
Storage temperature	Non operational		-40		+ 85	°C
Relative humidity	Vi nom, Io nom		20		95	% RH
Temperature coefficient	Vi nom, Io min				± 0.03	% / °C
MTBF	Bellcore Issue 6 @40°C, GB	5V model		566000		Hours
		12V model		556000		Hours
		15V model		564000		Hours
		24V model		525000		Hours
		24LS model		527000		Hours
Altitude during operation	IEC 60068-2-13				4850	m
Dimension			L91 x W90 x D57			mm
Cooling	Free air convection					
Installation position	Vertical (other direction may derating using)					
Pollution degree			2			

INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	Io nom		100		240	VAC
Absolute input max. range	Ta min ... Ta max, Io nom	AC in	90		264	VAC
		DC in	120		375	VDC

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INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Input current	Vi : 115 / 230 VAC, Io nom	5V model	1.15 / 0.62		A
		12V, 15V models	1.35 / 0.72		A
		24V model	1.8 / 0.9		A
Rated input current	Vi : 90 VAC, Io nom	5V model		1.5	A
		12V, 15V models		1.7	A
		24V model		2.2	A
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom			30 / 60	A
Power dissipation	Vi : 230 VAC, Io nom	5V model	15.6		W
		12V model	12.9		W
		15V model	12.5		W
		24V model	12.2		W
		24LS model	11.9		W
Leakage current	Input-Output			0.25	mA

OUTPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	Vi nom, Io max	0		+ 1	%
Minimum load	Vi nom	0			%
Line regulation	Io nom, Vi min ...Vi max			± 1	%
Load regulation	Vi nom, Io min ...Io nom			± 1	%
Voltage trim range	Vi nom, 0.8 Io nom	5V model	5	5.5	VDC
		12V model	12	14	VDC
		15V model	13.5	16.5	VDC
		24V model	24	28	VDC
		24LS model	20	24.2	VDC
Rated continuous loading	Vi nom,	5V model	12A @ 5VDC / 10.5A @ 5.5VDC		
		12V model	6A @ 12VDC / 5.1A @ 14VDC		
		15V model	5A @ 15VDC / 4.5A @ 16.5VDC		
		24V model	4.2A @ 24VDC / 3.6A @ 28VDC		
		24LS model	3.8A @ 24VDC / 3.7A @ 24.2VDC		
Hold up time	Vi = 115 / 230 VAC, Io nom	5V, 12V models	16/60		ms
		15V, 24V models	10/60		ms
Turn on time	Vi nom, Io nom			1000	ms
Rise time	Vi nom, Io nom	→ with 3500 μF CAP			ms
	Vi nom, Io nom				ms
	Vi nom, Io nom	→ with 3500 μF CAP			ms
Fall time	Vi nom, Io nom			150	ms
Transient recovery time	Vi nom, I ~ 0.5 Io nom			2	ms
Ripple & noise	Vi nom, Io nom, BW = 20MHz			50	mV
Power back immunity	Vi nom, Io nom	5V model	7.5		VDC
		12V model	18		VDC
		15V model	22		VDC
		24V model	35		VDC
Capacitor load	Vi nom, Io nom			3500	μF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	5V model	3.5	4.5	VDC
		12V model	9	10.8	VDC
		15V model	11	13.5	VDC
		24V model	19.2	21.6	VDC
DC LOW indicator threshold after start up (Red LED)	Vi nom, Io nom	5V model	3.5	4.5	VDC
		12V model	9	10.8	VDC
		15V model	11	13.5	VDC
		24V model	19.2	21.6	VDC
Efficiency	Vi nom, Io nom, Po / Pi	Up to 89%, See model list and typ efficiency curve			

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CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			T3.15A / 250VAC internal			
Internal surge voltage protection	IEC 61000-4-5		Varistor			
Rated over load protection	Vi nom	5, 12, 15 & 24V model	110		150	%
		24LS model	102		108	%
Over voltage protection	Vi nom, Io nom (Auto Recovery)	5V model	5.75		6.5	VDC
		12V model	15		16.5	VDC
		15V model	18		20	VDC
		24V model	30		33	VDC
		24LS model	24.5		25.5	VDC
Output short circuit			Fold forward			
Degree of protection			IP20			

APPROVALS AND STANDARDS

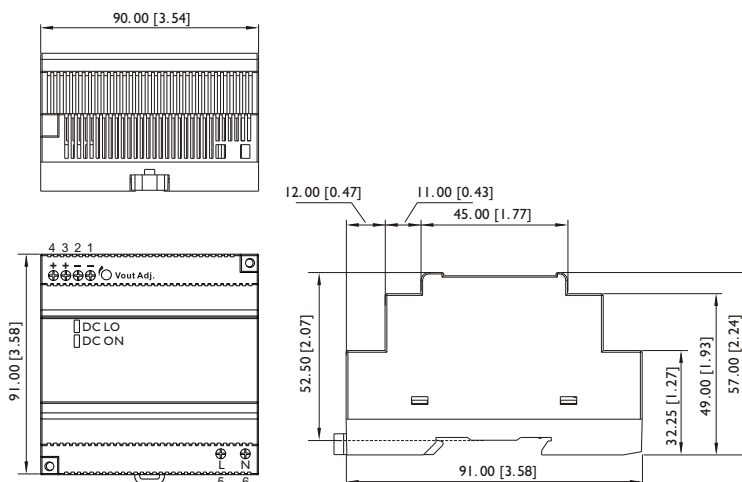
UL / cUL	UL 508 Listed UL 60950-1, UL 1310 Class 2 Power (24LS model only) Recognized ISA 12.12.01(Class I, Division 2, Groups A, B, C and D)
TUV	EN 60950-1, CB scheme
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 ENV 50204 Level 2, EN 61204-3
Vibration resistance	meet IEC 60068-2-6 (Mounting by rail : 10-500 Hz, 2G, along X, Y, Z each Axis, 60 min for each Axis)
Shock resistance	meet IEC 60068-2-27 (15G, 11ms, 3 Axis, 6 Faces, 3 times for each Face)

PHYSICAL CHARACTERISTICS

Case size	91 x 90 x 57 mm (3.58 x 3.54 x 2.24 inches)
Case material	Plastic
Weight	380g
Packing	0.44kg ; 40 pcs / 19kg / 2.28CUFT

MECHANISM & PIN CONFIGURATION

mm [inch]



CONSTRUCTION

Easy snap-on mounting onto the DIN-Rail (TS35/7.5 or TS35/15), unit sits safely and firmly on the rail; no tools required even to remove

INSTALLATION

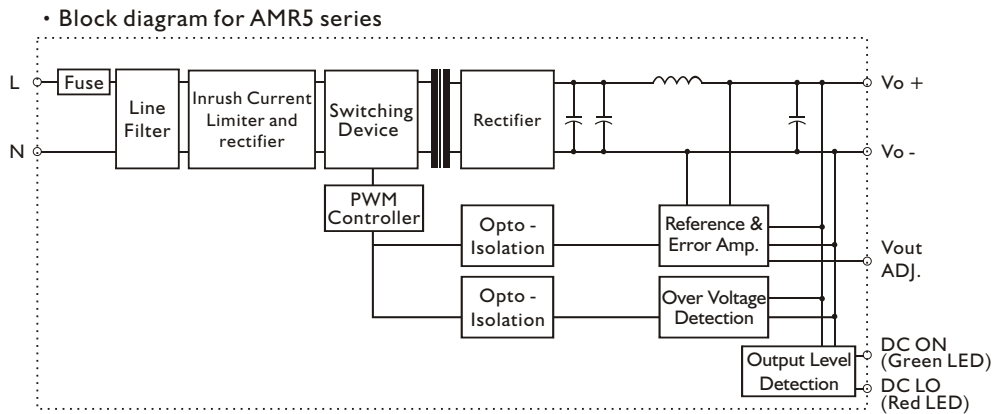
Ventilation / Cooling
Normal convection
All sides 25m/m free space
For cooling recommended
Connector size range
AWG24-12 (0.2~2.5mm²) flexible / solid cable
-Connector can withstand torque at maximum
6 pound-inches.
7m/m stripping at cable end recommends.
Use copper conductors only, 60/75 °C

GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]

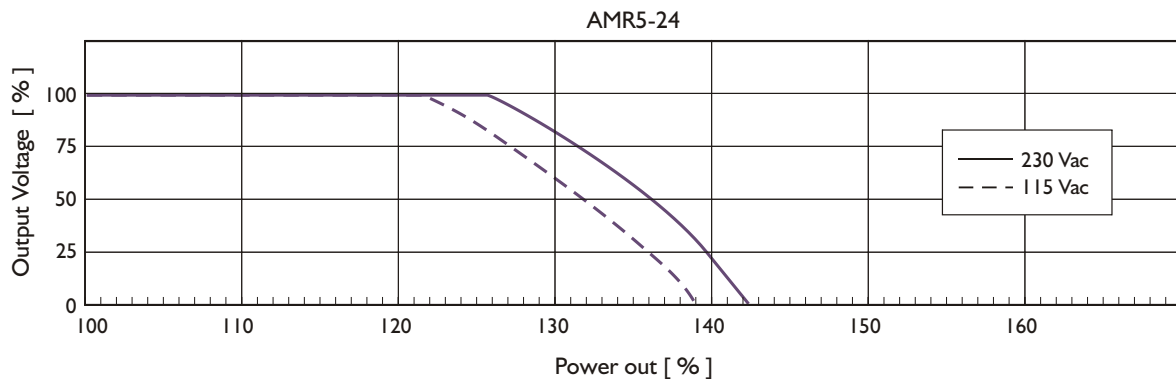
PIN ASSIGNMENT

PIN NO.	Designation	Description
1	OUT	-
2		-
3		+
4		+
5	IN	L
6		N
	OTHER	Vout ADJ.
		DC ON
		DC LO

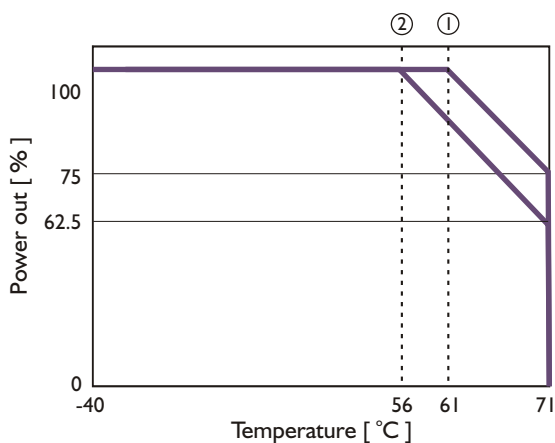
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



① For AMR5-12/15/24/24LS ② For AMR5-05

TYP. EFFICIENCY CURVE

