

DRSI SERIES

AC - DC DIN RAIL MOUNTABLE POWER SUPPLY
INDUSTRIAL CONTROL EQUIPMENT



FEATURES

- UNIVERSAL INPUT 85~264VAC
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- HIGH EFFICIENCY UP TO 86%
- HIGH AVERAGE EFFICIENCY MEET ErP
- LOW STANDBY POWER CONSUMPTION
- 3 YEARS WARRANTY



MODEL LIST

DRSI - 24 x

05 : 05V OUT
12 : 12V OUT
24 : 24V OUT

BLANK : SPRING TERMINAL TYPE
A : SCREW TERMINAL TYPE

MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)	EFF. (avg.)
Single Output Models							
DRSI-05(A)	85~264 VAC	20 WATTS	+ 5 VDC	4 A	80%	82%	82%
DRSI-12(A)	85~264 VAC	24 WATTS	+ 12 VDC	2 A	83%	85%	83%
DRSI-24(A)	85~264 VAC	30 WATTS	+ 24 VDC	1.25 A	84%	86%	85%

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		65		KHz		
Isolation voltage	Input-Output	3,000 / 4,242			VAC / VDC		
	Input-FG	1,500 / 2,121			VAC / VDC		
	Output-FG	500 / 710			VAC / VDC		
Isolation resistance	Input-Output, @ 500VDC	100			MΩ		
Ambient temperature	Operating at Vi nom	-25		+ 71	°C		
Derating (see derating curve)	Vi nom, from +51°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	704,000		Hours		
		12V	721,000		Hours		
		24V	764,000		Hours		
Altitude during operation	EN 62368-1			5,000	m		
Dimension	Spring & Screw terminal type	L90 x W22.5 x D100			mm		
Cooling	Free air convection						
Installation position	Vertical (other direction may derating using)						
Pollution degree		2					

SPECIFICATION

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

INPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Rated input voltage	I _o nom		100		240	VAC
Absolute input max. range	T _a min ... T _a max, I _o nom	AC in	85		264	VAC
		DC in	120		375	VDC
Input current	V _i : 115 / 230 VAC, I _o nom			335 / 210		mA
Rated input current	V _i : 85 VAC, I _o nom				750	mA
Line frequency	V _i nom, I _o nom		47		63	Hz
Inrush current	V _i : 115 / 230 VAC , I _o nom				20 / 40	A
Power dissipation	V _i : 230 VAC, I _o nom	5V		5.0		W
		12V		4.9		W
		24V		5.7		W
Leakage current	Input-Output				0.25	mA
	Input-FG				3.5	mA
Standby power consumption	V _i nom, I _o = 0A				0.3	W

OUTPUT SPECIFICATIONS

Characteristics	Conditions		min.	typ.	max.	unit
Output voltage accuracy (Adjusted before shipment)	V _i nom, I _o max		0		+ 1	%
Minimum load	V _i nom		0			%
Line regulation	I _o nom, V _i min ... V _i max				± 1	%
Load regulation	V _i nom, I _o min ... I _o nom				± 1	%
Voltage trim range	V _i nom, 0.8 I _o nom	5V	4.75		5.5	V
		12V	11.4		15.6	V
		24V	22.5		28.5	V
Rated continuous loading	V _i nom	5V	4 A @ 5Vdc / 3.6 A @ 5.5 Vdc			
		12V	2 A @ 12Vdc / 1.6 A @ 15 Vdc			
		24V	1.25 A @ 24Vdc / 1 A @ 28.5 Vdc			
Hold up time	V _i : 115 / 230 VAC , I _o nom		20 / 50			ms
Turn on time	V _i nom, I _o nom				1,000	ms
	V _i nom, I _o nom → with 3500 μ F CAP				1,500	ms
Rise time	V _i nom, I _o nom				150	ms
	V _i nom, I _o nom → with 3500 μ F CAP				500	ms
Fall time	V _i nom, I _o nom				150	ms
Transient recovery time	V _i nom, I _o ~0.5 I _o nom				2	ms
Ripple & noise	V _i nom, I _o nom, BW = 20MHz				100	mV
Power back immunity	V _i nom, I _o nom 1 second	5V	7.5			VDC
		12V	22			VDC
		24V	35			VDC
Capacitor load	V _i nom, I _o nom				3,500	μ F
DC ON indicator threshold at start up (Green LED)	V _i nom, I _o nom	5V	4.0		4.5	VDC
		12V	9.6		10.8	VDC
		24V	19.2		21.6	VDC
Efficiency	V _i nom, I _o nom, P _o / P _i		Up to 86%, See model list and			typ efficiency curve

CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Input fuse			T2A / 250VAC internal			
Internal surge voltage protection	IEC 61000-4-5		Varistor			
Rated over load protection	V _i nom (see typ current limited curve)		140			%
Over voltage protection	V _i nom, 0.8 I _o nom (Auto Recovery)	5V	6.5		8.5	VDC
		12V	16.2		18	VDC
		24V	28.8		32.4	VDC
Output short circuit			Hiccup mode			
Degree of protection			IP20			

SPECIFICATION

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

APPROVALS AND STANDARDS

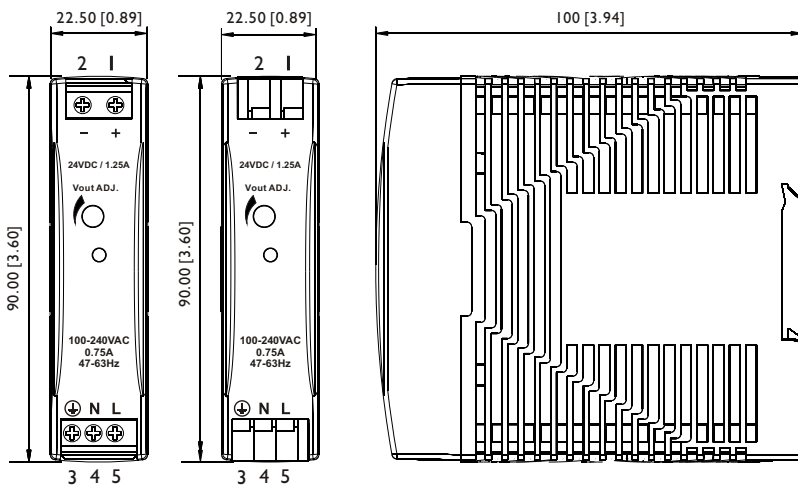
UL / cUL	UL 508 Listed, UL 1310 class 2 Power Recognized
cTUVus	UL 62368-1
TUV	EN 62368-1
CE	EN 61000-6-3, EN 55032 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 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 on 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	90 x 22.5 x 100 mm (3.6 x 0.89 x 3.94 inches)
Case material	Plastic
Weight	140 g
Packing	0.15 kg ; 60 pcs / 10 kg / 2.16 CUFT

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.

INSTALLATION

Ventilation / Cooling
Normal convection
All sides 25mm free space
For cooling recommended
Connector size range
Spring terminal:
AWG24-14 (0.2~2mm²) flexible / solid cable, 10 m/m stripping at cable end recommends
Screw terminal:
AWG26-12 (0.2~2.5mm²) flexible / solid cable, connector can withstand torque at maximum 5 pound-inches.
4-5 m/m stripping at cable end recommends
Use copper conductors only, 60 / 75°C

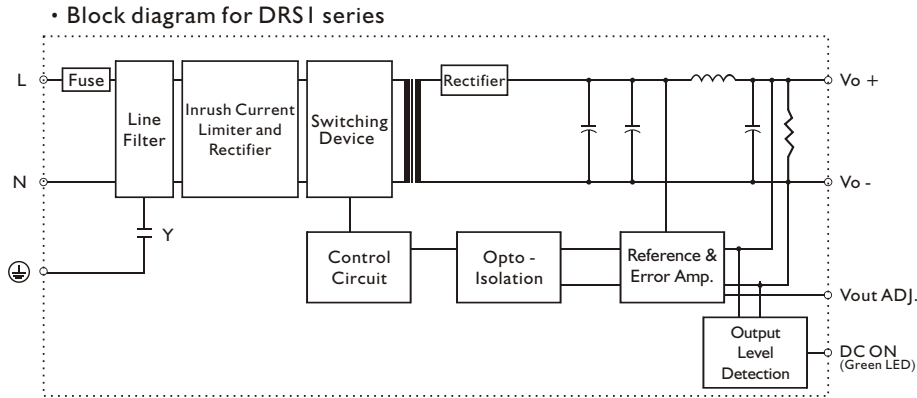
GENERAL TOLERANCE

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

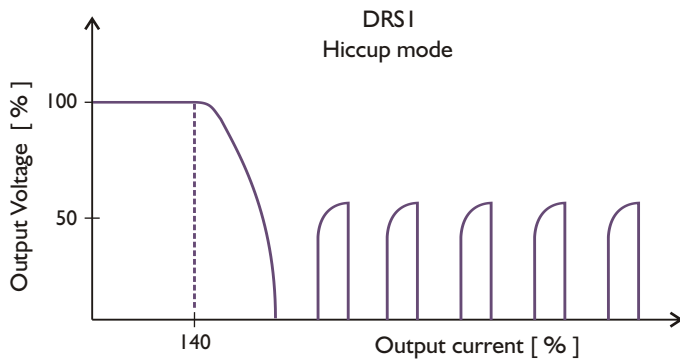
PIN ASSIGNMENT

PIN NO.	Designation	Description
1	OUT	V + Positive output terminal
2		V - Negative output terminal
3	IN	⊕ Ground this terminal to minimize high-frequency emissions
4		N Input terminals (neutral conductor, no polarity at DC input)
5		L Input terminals (phase conductor, no polarity at DC input)
	OTHER	DC ON Operation indicator LED
		Vout ADJ. Trimmer-potentiometer for Vout adjustment

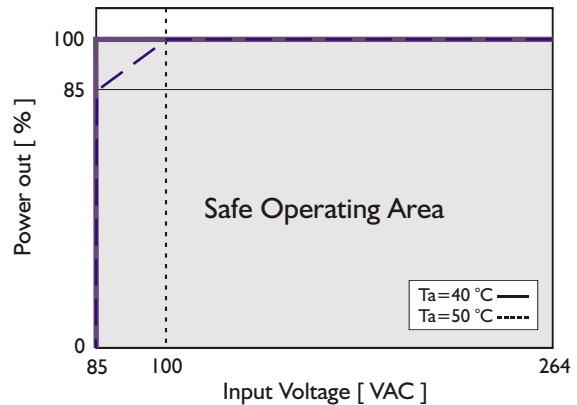
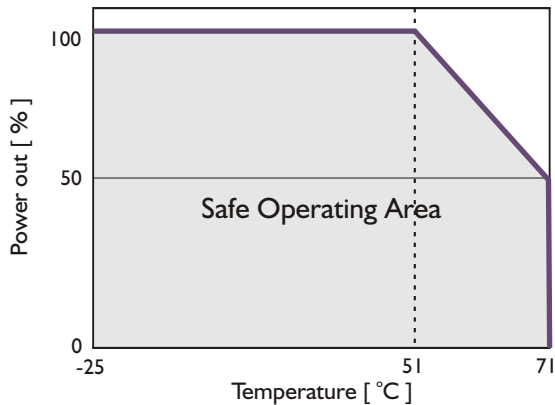
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE

