



## 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 89%
- HIGH AVERAGE EFFICIENCY MEET ErP (except 12V model)
- LOW STANDBY POWER CONSUMPTION
- 3 YEARS WARRANTY



### MODEL LIST

**DRS4- 24 x**

12 : 12V OUT  
24 : 24V OUT  
48 : 48V 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.)
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#### Single Output Models

DRS4-12(A)	85~264 VAC	90 WATTS	+ 12 VDC	7.5 A	84%	86%	86%
DRS4-24(A)	85~264 VAC	100 WATTS	+ 24 VDC	4.2 A	86%	88%	87%
DRS4-48(A)	85~264 VAC	100 WATTS	+ 48 VDC	2.1 A	87%	89%	88%

### 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				100	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 +46°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	12V 24V 48V		470,000 521,000 545,000		Hours Hours Hours
Altitude during operation	EN 62368-1				5,000	m
Dimension	Spring & Screw terminal type		L90 x W54 x D100			mm
Cooling	Free air convection					
Installation position	Vertical ( other direction may derating using )					
Pollution degree					2	



**SPECIFICATION**

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**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 DC in	85 120		264 375	VAC VDC
Input current	Vi : 115 / 230 VAC, Io nom			1800 / 900		mA
Rated input current	Vi : 85 VAC, Io nom				2300	mA
Line frequency	Vi nom, Io nom		47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom				40 / 60	A
Power dissipation	Vi : 230 VAC, Io nom	12V 24V 48V		18 17 16		W
Leakage current	Input-Output Input-FG				0.25 3.5	mA
Standby power consumption	Vi nom, Io = 0A				0.5	W

**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	12V 24V 48V	11.4 22.5 47		15.6 28.5 52.8	V
Rated continuous loading	Vi nom	12V 24V 48V		7.5 A @ 12Vdc / 6 A @ 15 Vdc 4.2 A @ 24Vdc / 3.5 A @ 28.5 Vdc 2.1 A @ 48Vdc / 1.85 A @ 52.8 Vdc		
Hold up time	Vi : 115 / 230 VAC , Io nom		20 / 70			ms
Turn on time	Vi nom, Io nom Vi nom, Io nom → With Capacitor load				1,500 2,000	ms
Rise time	Vi nom, Io nom Vi nom, Io nom → With Capacitor load				150 500	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				100	mV
Power back immunity	Vi nom, Io nom I second	12V 24V 48V	22 35 63			VDC
Capacitor load	Vi nom, Io nom	12V, 24V 48V			3,500 1,200	μF
DC ON indicator threshold at start up (Green LED)	Vi nom, Io nom	12V 24V 48V	9.6 19.2 38.4		10.8 21.6 43.2	VDC
Efficiency	Vi nom, Io nom, Po / Pi			Up to 88%, See model list and typ efficiency curve		

**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 (see typ current limited curve)		130			%
Over voltage protection	Vi nom, 0.8 Io nom (Auto Recovery)	12V 24V 48V	16.2 28.8 57.6		18 32.4 62.4	VDC
Output short circuit				Hiccup mode		
Degree of protection				IP20		



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**APPROVALS AND STANDARDS**

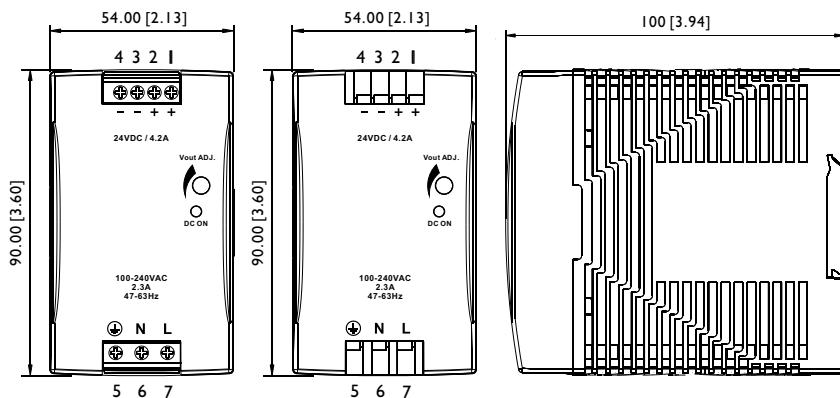
UL / cUL	UL 508 Listed
cTUVus	UL 62368-1
TUV	EN 62368-1
CE	EN 61000-6-3, EN 55032 Class B, EN 61000-3-2, EN 61000-3-3 EN 61000-6-2, EN 55024, EN 61000-4-2 Level 4, EN 61000-4-3 Level 3 EN 61000-4-4 Level 4, EN 61000-4-5 L-N Level 3, L / N-FG Level 4 EN 61000-4-6 Level 3, EN 61000-4-8 Level 4, EN 61000-4-11 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 54 x 100 mm (3.6 x 2.13 x 3.94 inches)
Case material	Plastic
Weight	350 g
Packing	0.40 kg ; 32 pcs / 14 kg / 1.85 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 (0.2~2mm<sup>2</sup>) flexible / solid cable,  
10 m/m stripping at cable end recommends  
Screw terminal:  
AWG26-12 (0.2~2.5mm<sup>2</sup>) 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

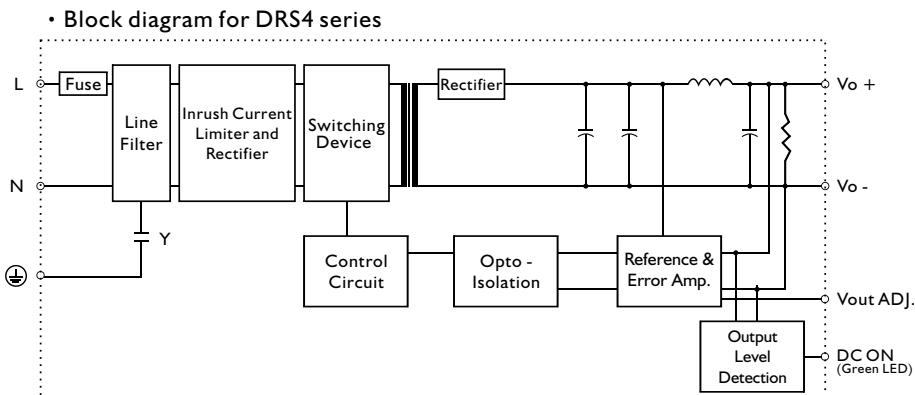
GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]

**PIN ASSIGNMENT**

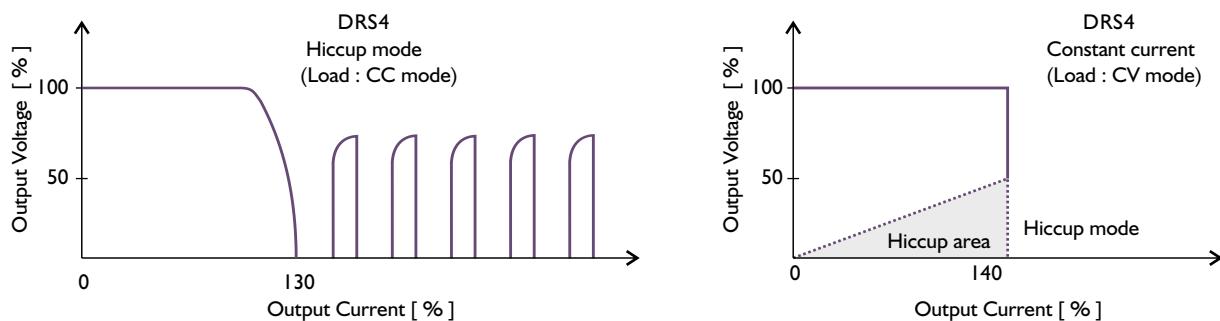
PIN NO.	Designation	Description
1, 2	OUT	V +
3, 4		V -
5	IN	Ground this terminal to minimize high-frequency emissions
6		Input terminals (neutral conductor, no polarity at DC input)
7		Input terminals (phase conductor, no polarity at DC input)
	OTHER	Vout ADJ.
		Trimmer-potentiometer for Vout adjustment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



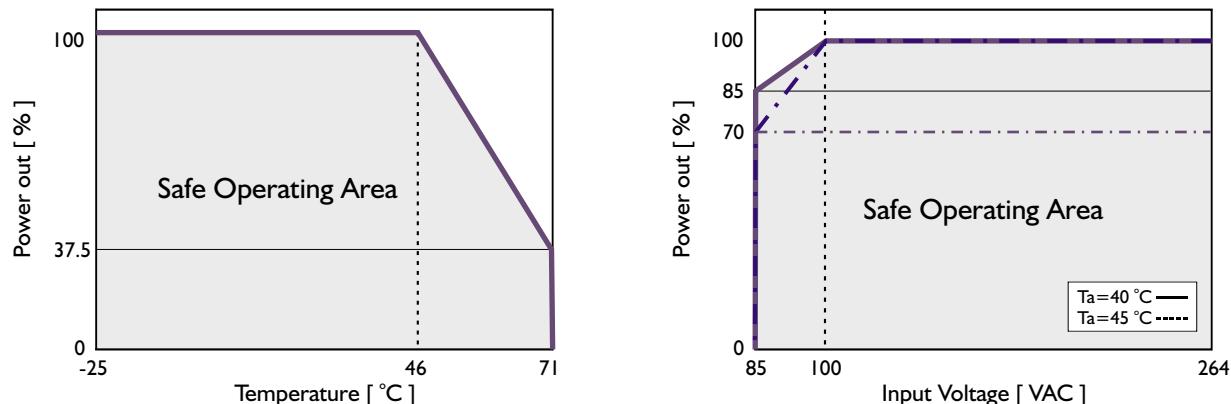
## CIRCUIT SCHEMATIC



## TYP. CURRENT LIMITED CURVE



## DERATING CURVE



## TYP. EFFICIENCY CURVE

