

# EDA20 SERIES

AC-DC ENCLOSED SWITCHING POWER SUPPLY



## FEATURES

- UL / cUL / TUV / CE
- COMPLY WITH ErP
- UNIVERSAL INPUT 88~264VAC
- SHORT CIRCUIT PROTECTION
- INTERNAL INPUT FILTER
- 2 YEARS WARRANTY
- HIGH EFFICIENCY UP TO 87%
- HIGH AVERAGE EFFICIENCY MEET ErP
- LOW STANDBY POWER CONSUMPTION



## MODEL LIST

MODEL NO.	INPUT VOLTAGE	OUTPUT WATTAGE	OUTPUT VOLTAGE	OUTPUT CURRENT	EFF. (min.)	EFF. (typ.)	EFF. (avg.)
<b>Single Output Models</b>							
EDA20-05	88~264 VAC	20 WATTS	+ 5 VDC	4000 mA	81%	83%	80%
EDA20-12	88~264 VAC	20.4 WATTS	+ 12 VDC	1700 mA	84%	86%	83%
EDA20-15	88~264 VAC	21 WATTS	+ 15 VDC	1400 mA	85%	87%	84%
EDA20-24	88~264 VAC	21.6 WATTS	+ 24 VDC	900 mA	85%	87%	84%

## 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		3000 / 4242			VAC / VDC		
	Input-FG		1500 / 2121			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			729000	Hours	
			12V model			740000	Hours	
			15V model			746000	Hours	
			24V model			772000	Hours	
Altitude during operation	IEC 60068-2-13				4850	m		
Dimension					L92 x W54 x H30		mm	
Cooling	Free air convection							

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### INPUT SPECIFICATIONS

Characteristics	Conditions	min.	typ.	max.	unit
Rated input voltage	Io nom	100		240	VAC
Absolute input max. range	AC in	88		264	VAC
		DC in	120		375
Input current	Vi : 115 / 230 VAC, Io nom		390 / 250		mA
Rated input current	Vi : 88 VAC, Io nom			500	mA
Line frequency	Vi nom, Io nom	47		63	Hz
Inrush current	Vi : 115 / 230 VAC , Io nom			20 / 40	A
Power dissipation	Vi : 230 VAC, Io nom	5V model	4.5		W
		12V model	4		W
		15V model	4		W
		24V model	4		W
Leakage current	Input-Output			0.25	mA
	Input-FG			3.5	mA
Standby power consumption	Vi nom, Io=0A			0.3	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			± 0.5	%	
Load regulation	Vi nom, Io min ...Io nom			± 1	%	
Voltage trim range	Vi nom, 0.8 Io nom	5V model	4.5		5.5	VDC
		12V model	10.8		13.2	VDC
		15V model	13.5		16.5	VDC
		24V model	21.6		27.6	VDC
Rated continuous loading	Vi nom	5V model	4 A @ 5Vdc / 3.6 A @ 5.5 Vdc			
		12V model	1.7 A @ 12Vdc / 1.5 A @ 13.2 Vdc			
		15V model	1.4 A @ 15Vdc / 1.25 A @ 16.5 Vdc			
		24V model	0.9 A @ 24Vdc / 0.75 A @ 27.6 Vdc			
Hold up time	Vi : 115 / 230 VAC , Io nom	15 / 80			ms	
Turn on time	Vi nom, Io nom			1000	ms	
	Vi nom, Io nom → with 3500 μF CAP			1500	ms	
Rise time	Vi nom, Io nom			150	ms	
	Vi nom, Io nom → with 3500 μF CAP			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 1 second	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	
Efficiency	Vi nom, Io nom, Po / Pi	Up to 87%, 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	Vi nom (see typ current limited curve)	120		160	%

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### CONTROL AND PROTECTION

Characteristics	Conditions		min.	typ.	max.	unit
Over voltage protection	Vi nom, Io nom (Auto Recovery)	5V model	5.75		6.75	VDC
		12V model	13.8		16.2	VDC
		15V model	17.25		20.25	VDC
		24V model	28.8		32.4	VDC
Output short circuit			Hiccup mode			

### APPROVALS AND STANDARDS

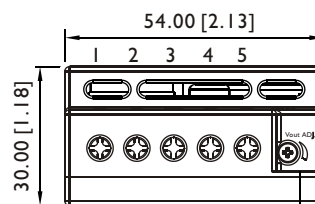
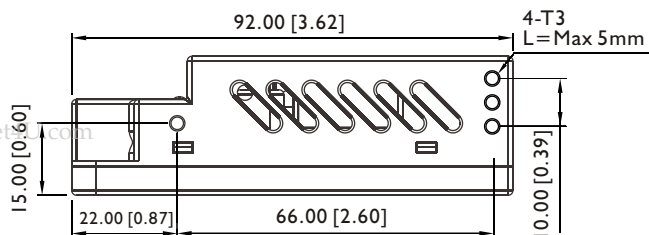
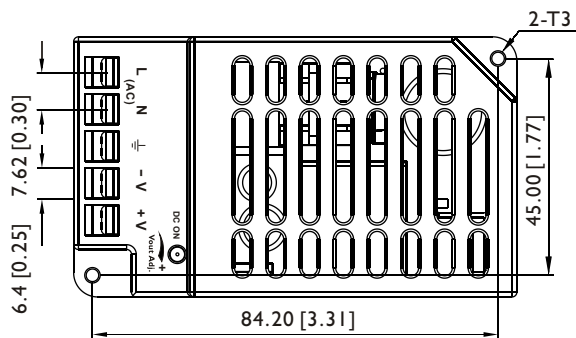
UL / cUL	UL 60950-1 Recognized
TUV	EN 60950-1, CB scheme
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8 EN 61000-4-11, ENV 50204, EN 61204-3
Vibration resistance	meet IEC 60068-2-6 (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	92 x 54 x 30 mm (3.62 x 2.13 x 1.18 inches)
Case material	Plastic
Weight	140 g

## MECHANISM & PIN CONFIGURATION

mm [inch]



### INSTALLATION

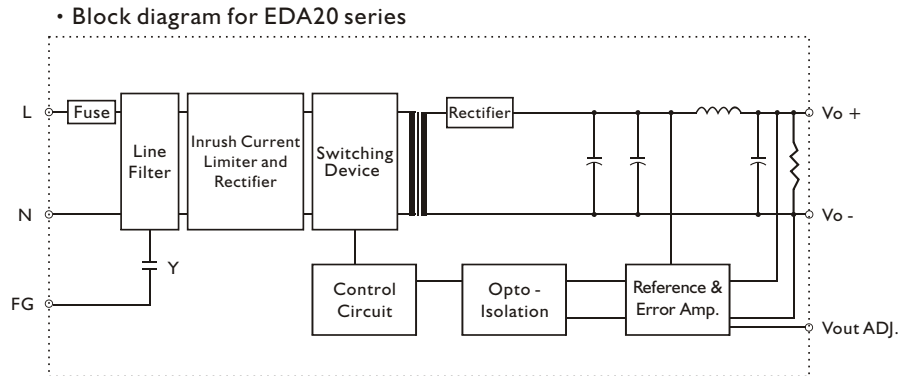
Ventilation / Cooling  
Normal convection  
Connector size range  
AWG22-12 (0.2~2.5mm<sup>2</sup>) flexible / solid cable,  
connector can withstand torque at maximum  
8 pound-inches.

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]

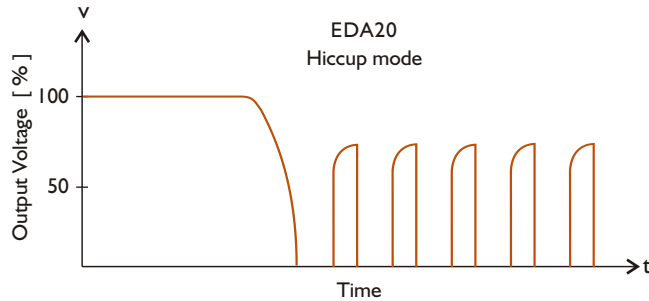
## PIN ASSIGNMENT

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

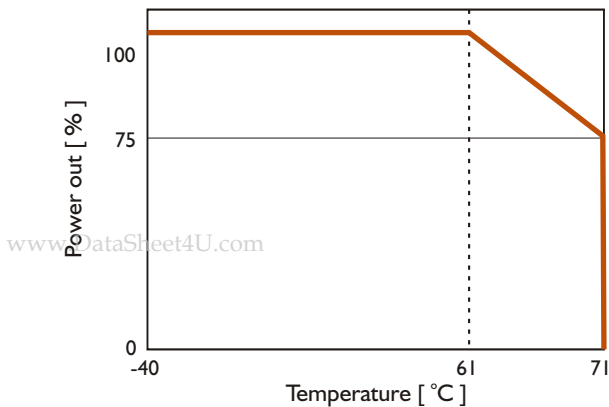
## CIRCUIT SCHEMATIC



## TYP. CURRENT LIMITED CURVE



## DERATING CURVE



## TYP. EFFICIENCY CURVE

