

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.)
Single Output Models							
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					

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	Io nom	100		240	VAC
Absolute input max. range	AC in	88		264	VAC
	DC in	120		375	VDC
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	%

SPECIFICATION

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

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

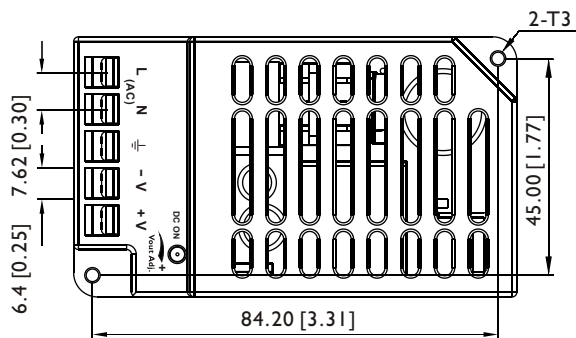
UL / cUL	UL 60950-1 Recognized
TUV	EN 60950-1, CB scheme
CE	EN 61000-6-3, EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2, EN 55024 EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8 EN 61000-4-11, ENV 50204, EN 61204-3
Vibration resistance	meet IEC 60068-2-6 (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

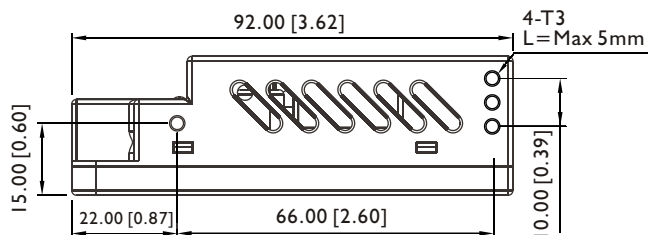
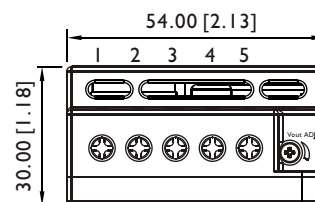
mm [inch]



INSTALLATION

Ventilation / Cooling
Normal convection
Connector size range
AWG22-12 (0.2~2.5mm²) flexible / solid cable,
connector can withstand torque at maximum
8 pound-inches.

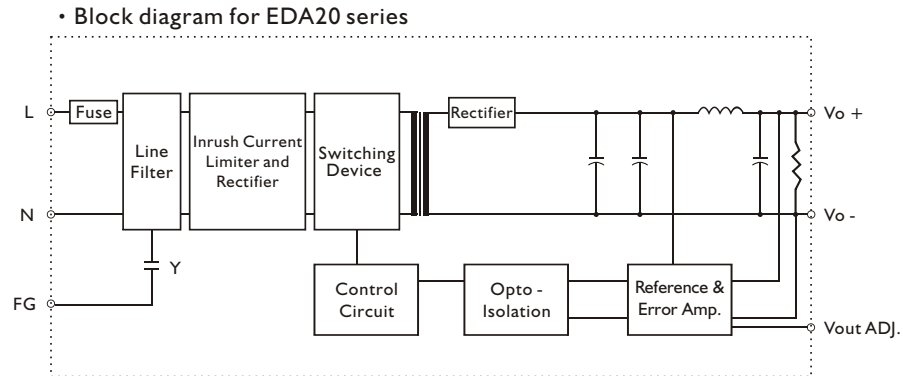
GENERAL TOLERANCE	
0.00[0.00] - 30.00[1.18]	±0.30[0.01]
30.00[1.18] - 120.00[4.72]	±0.50[0.02]



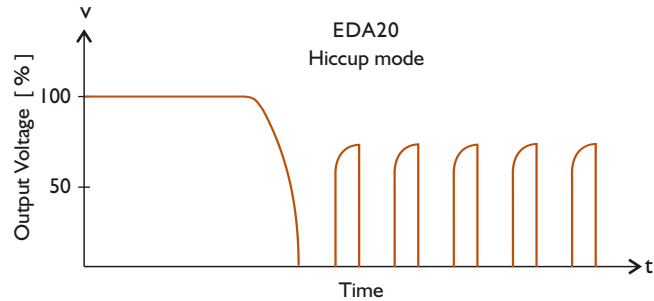
PIN ASSIGNMENT

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

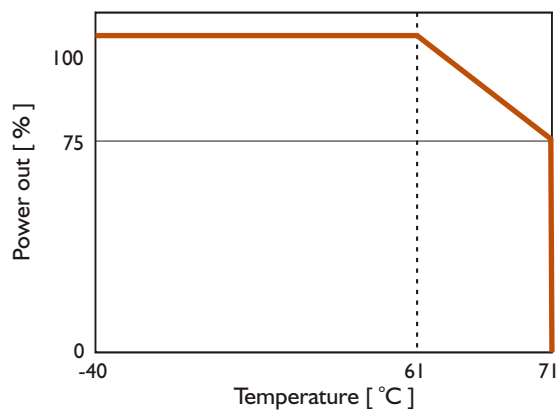
CIRCUIT SCHEMATIC



TYP. CURRENT LIMITED CURVE



DERATING CURVE



TYP. EFFICIENCY CURVE

