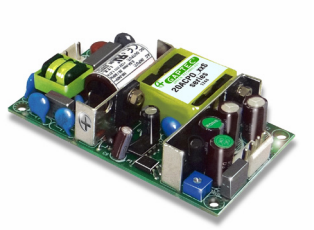
GAPTEC®
GREEN TECHNOLOGY

20ACPO_S Series

20W - Single Output AC-DC Converter - Universal Input - Isolated & Regulated



AC-DC Converter 20 Watt

- High efficiency up to 80%
- Universal AC input range (85~264VAC)
- Ultra-miniature size, low profile
- Over voltage protection (OVP)
- Over load protection (OLP)
- Short circuit protection (SCP)
- Wide operating ambient temperature (-25°C~70°C)
- All using 105°C long life electrolytic capacitors
- 100% full load burn-in test

The 20ACPO_S series features standard rail mounting, energy efficiency and is highly cost-effective. The series offers stability and high noise immunity especially for industrial control equipment, machinery and other demanding environments for industrial equipment. This converter offers a compact and light weight design with and standard rail installation (35mm). Furthermore this series offers Easy Fuse Tripping due and a built-in DC OK relay contact. The converter can be installed on TS-35/7.5 or TS-35/15.

SHORT CIRCUIT PROTECTED · 100% RoHS compliant 6/6 · c UL us UL-60950-1 (E347551) · CE

Common specifications

Short circut protection:	Long-term mode, automatic recovery
Temperature rise at full load:	50°C MAX
Cooling:	Free air convection
Operation temperature range:	-25°C~+70°C
Storage temperature range:	-40°C ~+85°C
Storage humidity range:	< 95%
Temperature coefficient:	0.03%/°C MAX
MTBF (using MIL-HDBK-217F):	+25°C >200,000 hours
Safety standards:	UL60950-1; EN60950-1: 2006
Case material:	Heat-resistant Plastic (UL94-V0) and metal
Dimensions (L*W*H):	89×51×20mm
Weight:	126.7g

Isolation specifications

Item	Test condition	Min	Typ	Max	Units
Withstand voltage*	• Primary-Sec.: 10mA • Primary-PG: 10mA • Secondary-PG: 10mA	3000 1500 500			VAC
Isolation resistance		100			MΩ

* Input-Output, tested for 1 minute, 500VDC and leakage current less than 1mA

Protection specifications

Over-load protection	**105%~150% rated output power**	**Protection type: Hiccup model, auto recovery**
Over-voltage protection	**110%~140% of rated output voltage**	**Protection type: Constant voltage**

Note:

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.

Input specifications

Input voltage range		85Vac~264Vac, 120Vdc~370Vdc	
Input frequency		47~63Hz	
AC current	230VAC	3.3V: 0.4A (max)	Others: 0.5A (max)
Inrush current	Cold start	@115VAC 20A (typ)	@230VAC 40A (typ)
Leakage current	Input—output: <0.35mA Input—PG: <0.75mA		

Output specifications

Item	Test conditions	Min	Typ	Max	Units
Output voltage accuracy	Full load		±2		%
Voltage adjustment range	• 3.3V • 5V • 12V • 15V • 24V • 48V	3.1 4.4 11.1 13.7 22 45.6		3.6 5.6 13.1 16.1 25.4 50.4	V V V V V V
Line regulation	Vin= min. to max. at full load			±0.5	%
Load regulation	0% to 100% load			±2	%
Set-up time (full load)	• @230VAC input • @115VAC input			1 2	s s
Hold-up time (full load)	• @230VAC input • @115VAC input			20 10	ms ms
Overshoot and undershoot				5	%
Switching frequency			65		KHz

* Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

Example:
20ACPO_24S

20 = 20Watt
AC = AC-DC
PO = series
24 = 24 Vout
S = single output

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Specifications subject to change without notice.

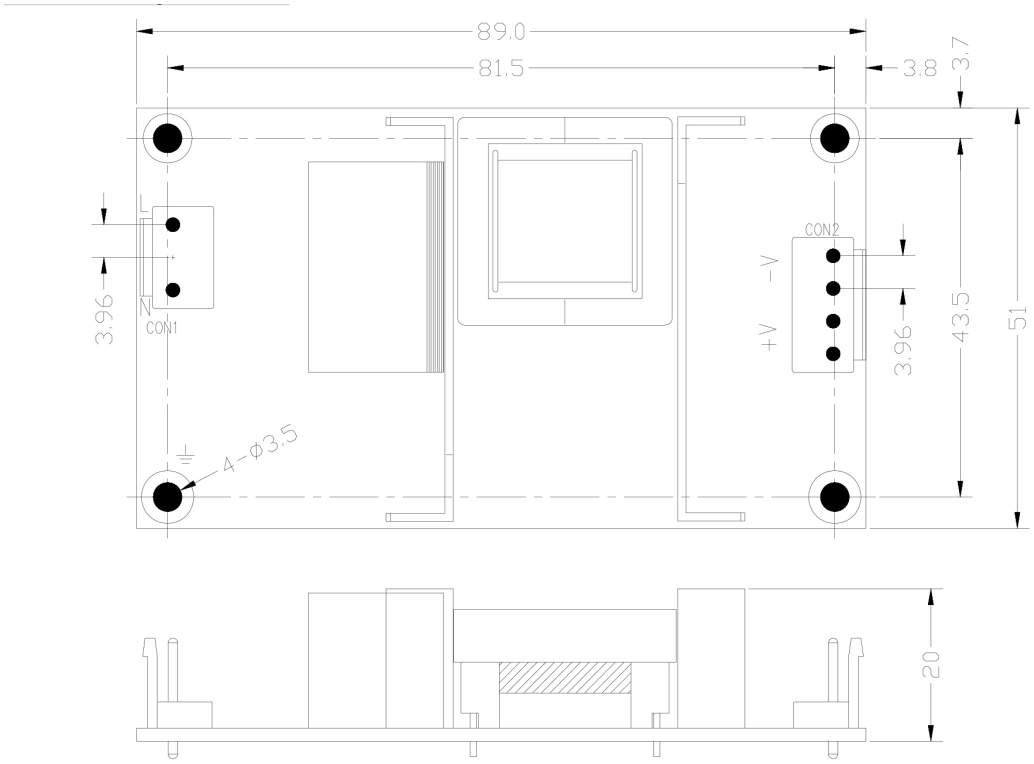
EMC specifications	
EMI / Conduction&Radiation	Compliance to EN55022 (CISPR22) ClassB
EMS / Harmonic current	Compliance to EN61000-3-2, 17625.1-2003
EMS / Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; ENV50204, light industry level, criteria A

The power supply is considered as a component which will be installed into a final equipment.
The final equipment must be re-confirmed that it still meets EMC directives.

Approval	Model	Power [W]	Output [Vo, VDC]	Rated Current [A]	Ripple&Noise* [mV, typ] 0~60°C	-20~0°C	Efficiency [%, typ] 115VAC	230VAC
UL	20ACPO_03S	20	3.3	4	50	75	69	68
UL	20ACPO_05S	20	5	4	50	75	76	75
UL	20ACPO_12S	20	12	1.67	50	75	79	78
UL	20ACPO_15S	20	15	1.34	50	75	80	79
UL	20ACPO_24S	20	24	0.84	50	75	80	79
UL	20ACPO_48S	20	48	0.42	100	100	80	79

Measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1 uF & 10uF parallel capacitor.

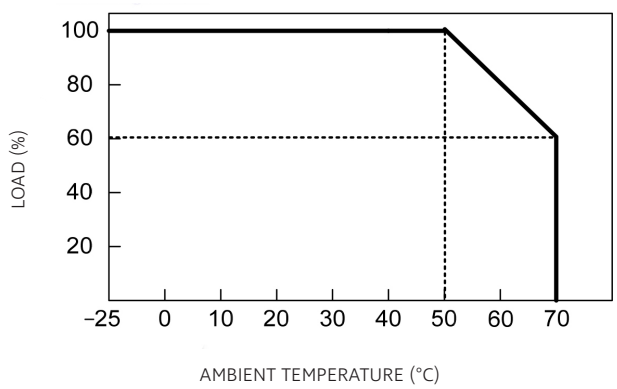
Mechanical dimensions



Item	Connectors	Mating Housing	Contacts
AC IN(CON1)	LANDWIN3961P0300T (Central Pin removed)	LANDWIN 3960S or JST VHR or Molex 51144	LANDWIN 3963T011R or JST SVH-21T-P1.1 Or Molex 50539
DC OUT(CON2)	LANDWIN 3961P0400T		

Typical characteristics

Derating Curve



Functional block diagram

Functional diagram

