

Features

1/4 brick, base plate cooled package
 90-264VAC wide input range
 150W with active PFC
 Long hold-up time
 -40°C to +100°C case temperature range
 ±5% output voltage trimming
 3000VAC reinforced insulation, up to 91% efficiency
 OVP, OCP, OTP and SCP protection
 3-year warranty

28ACO100 Series

100W / 150W Open Frame AC/DC Power Supply (PSU)



Image for illustration purposes only.



Description

The 28ACO100 Series is a 100W / 150W isolated, regulated AC/DC converter with active PFC in a quarter-brick package and long hold-up time set by external capacitors. It offers efficiency of up to 91%, a wide operating case temperature range of -40°C to +100°C, no minimum load requirement, and 3kVAC reinforced insulation, together with OVP, OCP, SCP and OTP protection.

These power modules use advanced power processing, control and packaging technologies and are suitable for a wide range of applications, including medical, railway, industrial, automation, semiconductor, network/telecom, military, boat, aviation, automobile and charger equipment, particularly where harsh environments, wide temperature variation and space limitations must be accommodated.

Part Number Breakdown

28AC	O	100	050	S	150
Series Name	Package	Watt	Output Voltage (VDC)	Single Output	Actual Watt

Models

Part Number	Input Voltage (V)	Output Voltage (V)	Output Current (A)	Output Power (W)	Efficiency Typ. (%)
28ACO100-120S-100-IP	90 - 264	12	8.33	100	89
28ACO100-240S-100-IP		24	4.16	100	90
28ACO100-280S-100-IP		28	3.57	100	90
28ACO100-360S-100-IP		36	2.77	100	90
28ACO100-480S-100-IP		48	2.08	100	90
28ACO100-120S-150-IP		12	12.5	150	89
28ACO100-240S-150-IP		24	6.25	150	90
28ACO100-280S-150-IP		28	5.35	150	90
28ACO100-360S-150-IP		36	4.16	150	90
28ACO100-480S-150-IP		48	3.13	150	90

Input Specifications

Parameter	Specification
Operating Input Voltage Range	90 - 264 VAC (230 VAC nominal)
Operating Input Frequency Range	47 - 63 Hz (50/60 Hz nominal)
Input Current	Typ. 1A at 115VAC / 0.5A at 230VAC (100% load)
Inrush Current	Limited by external components (thermistor); cold start at 230VAC, 25°C
Power Factor	Typ. 1 at 115VAC / 0.99 at 230VAC (100% load)
Leakage Current	≤0.75 mA at 240VAC, 60Hz, 100% load

Output Specifications

Parameter	Specification
Output Voltage Accuracy	≤±1.5% (100% load)
Line Regulation	≤±0.5% (high line to low line)
Load Regulation	≤±1% (0-100% load)
Output Ripple & Noise Voltage	≤2 %V _{pk-pk} (20MHz bandwidth, 10μF MLCC output capacitor)
Output Voltage Adjustment Range	≤±5% (adjustable by external resistor)
Minimum Load	0 A (no minimum load required)
Hold-Up Time	Set by external capacitors between +BC and -BC (at full load, 115VAC)

Protection

Parameter	Specification
Over Voltage Protection	110 - 140% of rated output voltage
Over Current Protection	Typ. 140% of rated output current, hiccup mode
Short-Circuit Protection	Hiccup mode, auto-recovery
Over Temperature Protection	Typ. 110°C, auto-recovery

Environmental Characteristics

Parameter	Specification
Storage Temperature Range	-55°C to +125°C (all models)
Operating Case Temperature	-40°C to +100°C (on aluminium base plate)
Humidity (non-condensing)	≤95% (all models)

Safety Standards

Parameter	Specification
Certifications (per unit label)	CE
Isolation Voltage	Input-Output: 3000VAC / Input-Base: 1500VAC / Output-Base: 500VAC

Electromagnetic Compatibility (EMC)

Parameter	Specification
EMC Emission	Tested to CISPR 32 (EN 55032) Class B limits, Average & Quasi-Peak (see Performance Graphs)

Reliability

Parameter	Specification
Calculated MTBF	1.2 M hours (BellCore TR-332 @ 50°C, Ground Benign)

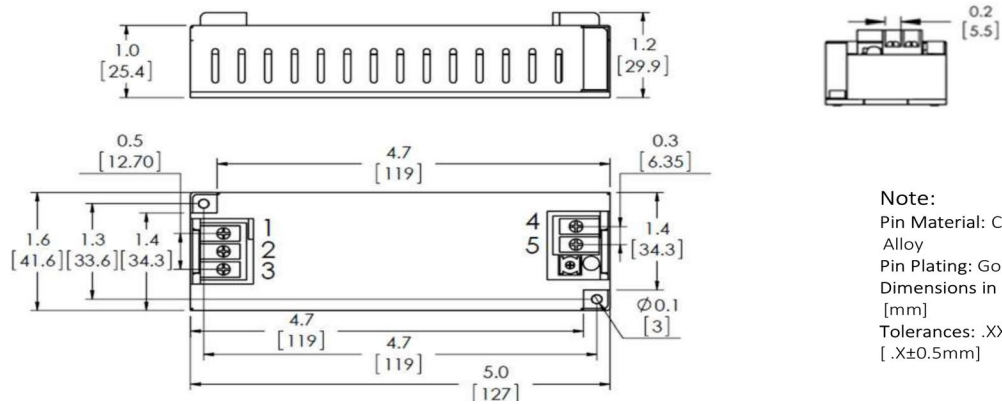
General Specifications

Parameter	Specification
Switching Frequency	Typ. 100 kHz (PFC) / 130 kHz (AC-DC)
Case Material	Metal

Weight & Dimensions

Parameter	Specification
Weight	260g net / pcs (gross weight not stated in source)
Dimensions	5.0" x 1.64" x 1.0" (127 x 41.6 x 25.4mm)

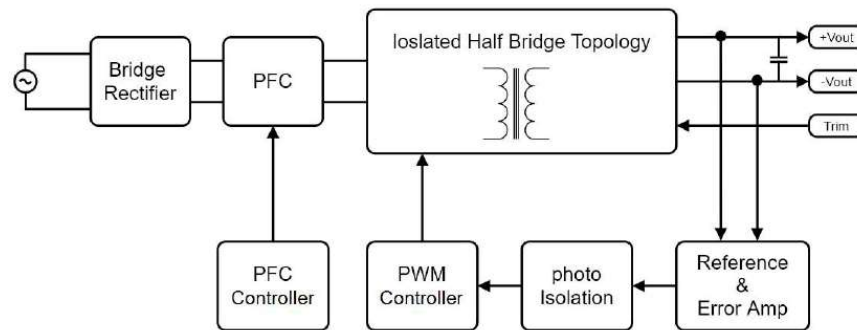
Mechanical Drawing



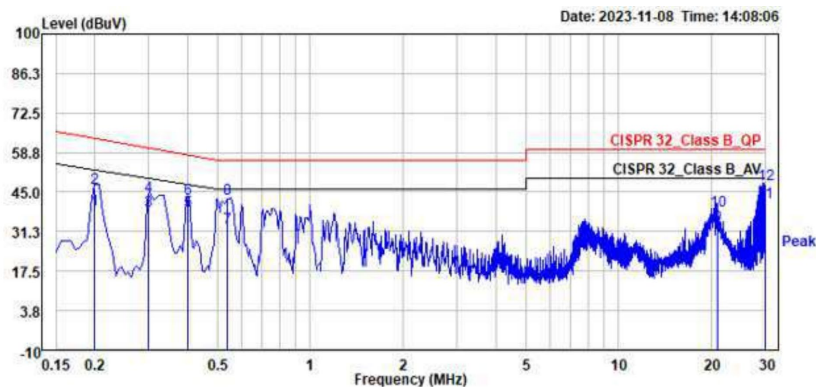
Note:
 Pin Material: Copper Alloy
 Pin Plating: Gold
 Dimensions in inches [mm]
 Tolerances: .XX±0.25 [.X±0.5mm]

1	ACL	4	-VO
2	ACN	5	+VO
3	FG		

Block Diagram



Performance Graphs



Conducted EMI, input terminal (typ.), 28ACO100-120S-150-IP @ Vin=230VAC, Iout=12.5A. Fundamental switching frequency: 100kHz.
 Limits shown: CISPR 32 Class B (Average & Quasi-Peak).

Notes

1. All parameters are typical at $T_a = +25^{\circ}\text{C}$ under nominal line voltage conditions unless otherwise noted.
2. It is recommended to protect the input with fuses or other protection devices.
3. Specifications are subject to change without notice. No rights under any patent accompany the sale of this product or the information contained in this datasheet.