



POWER SUPPLIES FOR OPEN FRAME STEPPER DRIVES

OMPS Series



OMPS150A24 shown smaller than actual size.



OMPS300A48 shown smaller than actual size.

OMPS150A24, OMPS300A48

- Universal Input Voltage Range from 85 to 265 Vac
- Built-In Active PFC Filter, PF>0.95, Conforms to EN61000-3-2
- Pending for Safety Approvals: CE, CCC, UL/CSA/EN60950
- EMI: Conform to EN55011-B, EN55022-B, FCC-B
- EMS: Conform to EN61000-4-2, 3, 4, 5, 6, 8, 11
- LED Power Good Indicator
- Peak Current for Motor Application
- 100% Full Load Burn-In Test, High Performance, High Reliability
- Compact Size, 15% Smaller than Conventional Products

OMPS150A24

- 24V Output, Manually Adjustable Output Voltage
- High Flexibility with 3 Optional Connection Methods for Input/Output: Horizontal or Vertical Terminal Block or Connectors to Fit Wire Harness

OMPS300A48

- 48V Output, Manually Adjustable Output Voltage
- High Flexibility with 2 Optional Connection Methods for Input/Output: Horizontal or Vertical Terminal Block
- Fan Speed Control by Output Current to Extend Lifetime
- Remote Sense to Compensate Wire/Connection Voltage Drop

Open-frame stepper drives require a separate DC power supply for operation. Omegamation offers two power supplies that are matched for use with our open-frame stepper drive selection: the OMPS150A24 and the OMPS300A48.

Both power supplies are switched-mode, regulated DC power supplies with active PFC filters. The OMPS150A24 is 24 Vdc, 6.3 A (150 W) while the OMPS300A48 is 48 Vdc, 6.7 A (300 W).

OMPS150A24 SPECIFICATIONS

Nominal Output Voltage: 24V
Maximum Output Current: 6.3 A
Peak Output Current: 9.5 A
Maximum Output Power: 151.2 W
Efficiency (Typical) (115/230 Vac)¹: 82/85%
Input Voltage Range: 85 to 265 Vac (47 to 63 Hz) or 120 to 370 Vdc
Input Current (Typical) (115/230 Vac)¹: 1.8/0.9 A
Inrush Current (Typical): 16 A at 115 Vac, 32 A at 230 Vac, Ta = 25°C (77°F), cold start
Harmonic Current: Compliance to EN61000-3-2
Power Factor (Typical) (115/230 Vac)¹: 0.99/0.95
Output Voltage Range: 21.6 to 26.4V

Ripple and Noise (115/230 Vac)^{1,2}: 150 mV

Line Regulation²: 96 mV

Load Regulation²: 120 mV

Temperature Coefficient: Less than 0.02 %/°C

Over Current Protection³: 6.6/9.7 A

Over Voltage Protection⁴: 27.6 to 32.4V

Hold-Up Time (Typical) (115/230 Vac)¹: 20 ms

Leakage Current: 0.75 mA maximum, 0.25 mA (Typical) at 115 Vac, 0.5 mA (Typical) at 230 Vac

Series Operation: Possible

Remote ON/OFF Control: Option, CN3: 4 to 10V, Power ON; 0 to 0.8V, Power OFF

Operating Temperature: -10 to 70°C (14 to 158°F)

Operating Humidity: 20 to 90% RH (no dewdrop)

Storage Temperature: -30 to 85°C (-22 to 185°F)

Storage Humidity: 10 to 95% RH (no dewdrop)

Cooling Method: Convection cooling/forced air cooling

Withstand Voltage:

Input - Output: 3.0 kVac (20 mA)

Input - FG: 2.0 kVac (20 mA)

Output - FG: 500 Vac (100 mA) for 1 minute

Isolation Resistance: More than 100 MΩ at Ta = 25°C (77°F) and 70% RH, Output - FG: 500 Vdc

Vibration: At no operating, 10 to 55 Hz, 10 min 1 cycle 19.6m/s² constant, X, Y, Z, 1 hour each

Safety: Pending, UL60950, CSA60950, EN60950

EMI⁵: Compliance to FCC-Class B, EN55011/EN55022-B, CISPR22 Class B

EMS Immunity⁵: Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11

Weight (Typical): 620 g (21.87 oz)

Dimensions: 50 x 99 x 199 mm (1.97 x 3.9 x 7.83")

¹ At maximum output power, nominal input voltage, Ta = 25°C (77°F).

² Ripple and noise measured at bandwidth of 20 MHz by using a 12" twisted pair-wire terminated with 0.1uF and 47uF parallel capacitors.

³ Constant current limit with automatic recovery. Avoid operating at overload or dead short for more than 60 seconds.

⁴ Shutdown output voltage, manual reset. Re-power on to recover.

⁵ This power supply is considered a component to be installed in final equipment which should be re-confirmed to meet EMC directives.

OMPS300A48 SPECIFICATIONS

Nominal Output Voltage: 48V

Maximum Output Current: 6.7 A

Peak Output Current: 8.7 A

Maximum Output Power: 321.6 W

Efficiency (Typical) (115/230 Vac): 80/85%

Input Voltage Range: 85 to 265 Vac (47 to 63 Hz) or 120 to 370 Vdc

Input Current (Typical) (115/230 Vac): 3.6/1.8 A

Inrush Current (Typical): 20 A at 115 Vac, 32 A at 230 Vac, Ta = 25°C (77°F), cold start

Harmonic Current: Compliance to EN61000-3-2

Power Factor (Typical) (115/230 Vac): 0.99/0.95

Output Voltage Range: 43.2 to 52.8

Ripple and Noise (115/230 Vac)^{1, 2}: 240 mV

Line Regulation²: 96 mV

Load Regulation²: 240 mV

Temperature Coefficient: Less than 0.02%/°C

Over Current Protection³: 7.0/8.9 A

Over Voltage Protection⁴: 55.2 to 64.8V

Over Temperature Protection: Yes

Hold-Up Time (Typical)

(115/230 Vac)¹: 20 ms

Leakage Current: 0.75 mA maximum, 0.25 mA (typical) at 115 Vac, 0.5 mA (typical) at 230 Vac

Series Operation: Yes

Remote ON/OFF Control:

Option, CN2: 4 to 10V, power ON;

0 to 0.8V, power OFF

Remote Sensing: Option

Operating Temperature: -10 to 65°C (14 to 149°F)

Operating Humidity: 20 to 90% RH (no dewdrop)

Storage Temperature: -30 to 85°C (-22 to 185°F)

Storage Humidity: 10 to 95% RH (no dewdrop)

Cooling Method:

Forced air by blower fan

Withstand Voltage:

Input - Output: 3.0 KVac (20 mA)

Input - FG: 2.0 KVac (20 mA)

Output - FG: 500 Vac (100 mA) for 1 minute

Isolation Resistance: More than 100M Ω at Ta = 25°C (77°F) and 70% RH, Output - FG: 500 Vdc

Vibration: At no operating, 10 to 55 Hz, 10 min 1 cycle 19.6 m/s² constant, X, Y, Z, 1 hour each

Safety: Pending, UL60950, CSA60950, EN60950

EMI⁵: Compliance to FCC-Class B, EN55011/EN55022-B, CISPR22 Class B

EMS Immunity⁵: Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11

Weight (Typical): 900 g (31.75 oz)

Dimensions: 50 x 115 x 215 mm (1.97 x 4.53 x 8.46")

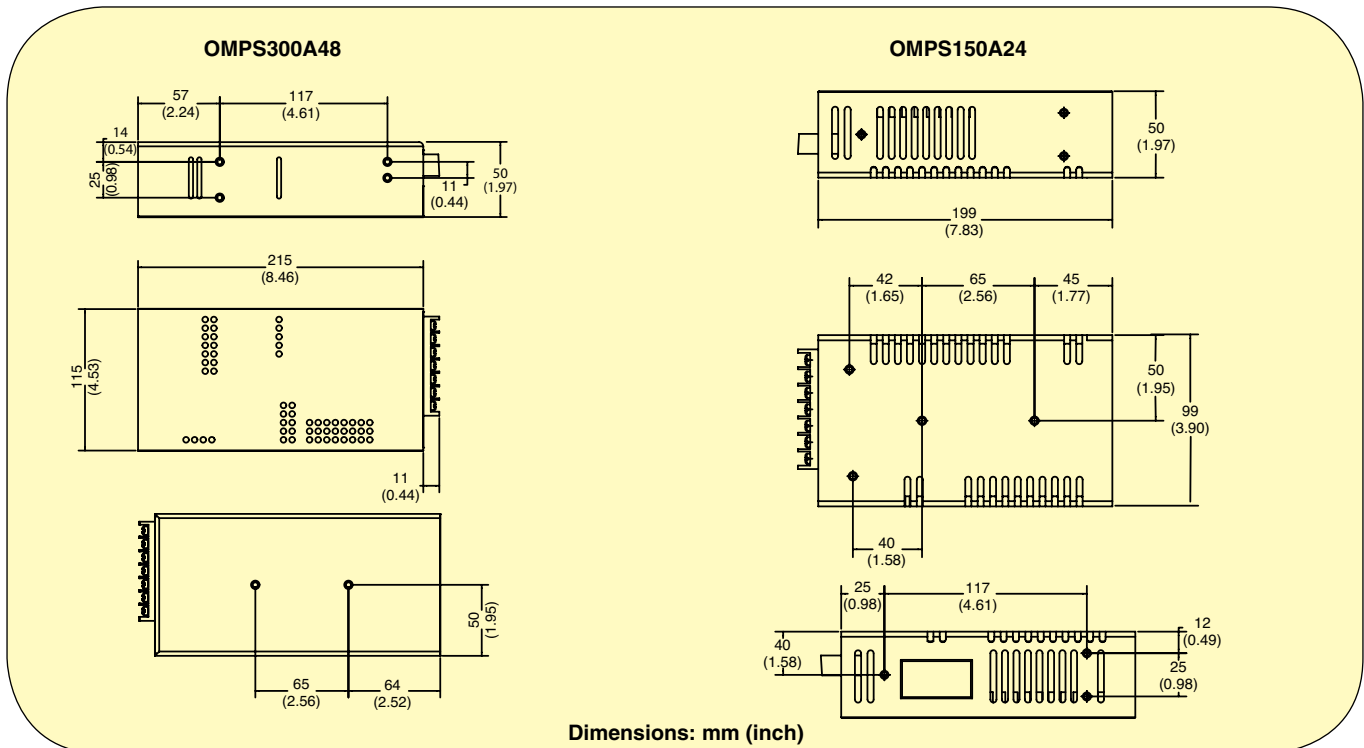
¹ At maximum output power, nominal input voltage, Ta = 25°C (77°F).

² Ripple and noise measured at bandwidth of 20 MHz by using a 12" twisted pair-wire terminated with 0.1uF and 47uF parallel capacitors.

³ Constant current limit with automatic recovery. Avoid operating at overload or dead short for more than 60 seconds.

⁴ Shutdown output voltage, manual reset. Re-power on to recover.

⁵ This power supply is considered a component to be installed in final equipment which should be re-confirmed to meet EMC directives.



Dimensions: mm (inch)



OMRC-050

- Wide Input Voltage Range
- Regeneration Present LED
- Power LED

OMRC-050 Regen Clamp – For Stepper Drive Power Supply Protection

There is a special consideration if the power supply voltage will be at or near the maximum voltage rating of the drive. If the motor will be rapidly decelerating a large inertial load from a high speed, care has to be taken to absorb the returned energy. The energy stored in the momentum of the load must be removed during deceleration and be safely dissipated. Because of its efficiency, the drive has no means of dissipating this energy so it returns it to the power supply. In effect, instead of drawing current from the power supply, the drive becomes a source of current itself. This current may then charge the power supply capacitor to destructive voltage levels; this condition is commonly known as motor regeneration. The OMRC-050 Regen Clamp is designed to protect your power supply from regeneration, and is recommended when your motor application exceeds the following conditions:

- NEMA 17 motors @ speeds > 30 rps
- NEMA 23 motors @ speeds > 10 rps
- NEMA 34 motors @ speeds > 4 rps
- Motor deceleration rate > 100 rps

SPECIFICATIONS

Input Voltage Range: 24 to 80 Vdc

Continuous Input Power: 50 W

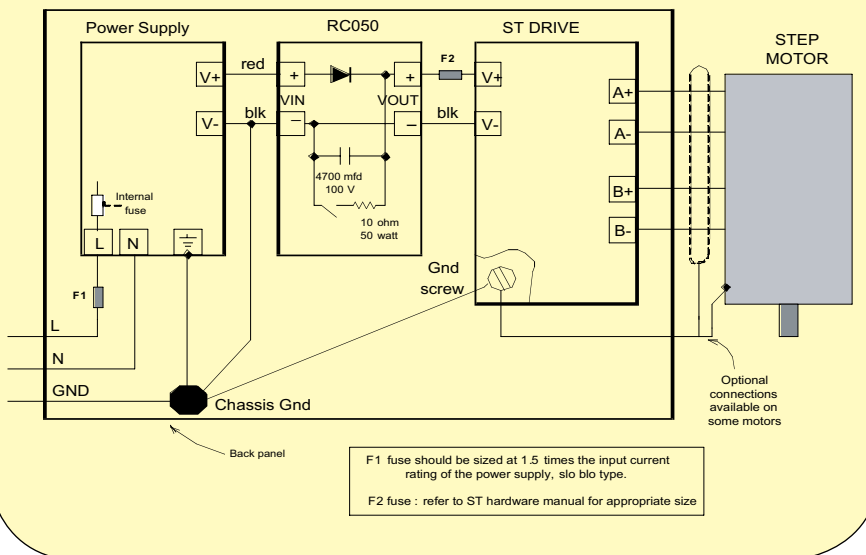
Peak Input Power: 800 W

Dimensions: 76.2 x 101.6 x 57.15 mm (3 x 4 x 2.25")



OMRC-050 shown close to actual size.

Power Wiring Diagram for ST Drive with OMRC-050 Regen Clamp



To Order Visit omega.com/ps_series for Pricing and Details

MODEL NO.	DESCRIPTION
OMPS150A24	24V, 6.3 A power supply with active PFC filter
OMPS300A48	48V, 6.7 A power supply with active PFC filter

ACCESSORIES

MODEL NO.	DESCRIPTION
OMRC-050	Regeneration clamp, 24 to 80 Vdc
POWER CORD-SE	AC power cord with stripped end termination
POWER CORD-SE-M16	2.4 m (8') power cord with M16 cable gland strain relief, 3x16 AWG, 250 Vac max

Ordering Examples: OMPS300A48, 48V, 6.7 A power supply with active PFC filter, and OMRC-050, regen clamp. OMPS150A24, 24V, 6.3 A power supply with active PFC filter.