

AD1048FS Series

Low Cost, 36 - 48W DIN Rail Mount Single Output AC/DC Power Supplies



Key Features:

- 36W - 48W Output Power
- DIN Rail Mountable
- Universal AC Input
- UL 508 Compliant
- EN60950 Compliant
- 12, 15, 24 & 48 VDC Outputs
- Cond./Rad. EMI Class B
- >170 kH MTBF
- **LOW COST!**



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Electrical Specifications

Specifications typical @ +25°C, nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

Input

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|----------------------------|------------|------|------|------|-------|
| Input Voltage Range | Universal | 100 | | 240 | VAC |
| | | 127 | | 370 | VDC |
| Input Frequency | | 47 | | 63 | Hz |
| Inrush Current, Cold Start | 110 VAC | | 22 | | A |
| | 220 VAC | | 44 | | A |
| Leakage Current | 264 VAC | | | 1.0 | mA |

Output

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------------|------------------------------|------|-------|-------|-------|
| Output Voltage Accuracy | | | ±0.5 | | % |
| Output Voltage Adjustment Range | | | ±10.0 | | % |
| Line Regulation | Vin = Min to Max | | ±1.0 | | % |
| Load Regulation, See Note 1 | Iout = 20% to 100% | | ±1.0 | | % |
| Hold Time | 110 VAC, Full Load | | 10 | | mSec |
| | 220 VAC, Full Load | | 20 | | |
| Ripple & Noise, See Note 2 | See Model Selection Guide | | | | |
| Output Power Protection | Power Limit | 130 | | 160 | % |
| Transient Recovery Time, See Note 3 | 50% Load Change | | 2 | | mS |
| Transient Response Deviation | | | 5 | | % |
| Temperature Coefficient | | | ±0.04 | ±0.05 | %/°C |
| Output Short Circuit | Continuous With Autorecovery | | | | |

General

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------------|----------------------------|-------|------|------|-------|
| Isolation Voltage | Input - Output | 3,000 | | | VAC |
| | Input - FG (Frame Ground) | 2,000 | | | |
| | Output - FG (Frame Ground) | 500 | | | |
| Isolation Resistance (Note 4) | 500 VDC | 100 | | | MΩ |
| Switching Frequency | Fixed | | 66 | | kHz |

Environmental

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-----------------------------|---|------|------|------|-------|
| Operating Temperature Range | Ambient | -20 | +25 | +50 | °C |
| Storage Temperature Range | | -20 | | +85 | °C |
| Cooling | Free Air Convection | | | | |
| Humidity | RH, Non-condensing | | | 95 | % |
| Vibration | 10 Hz ~ 2 kHz; 2G 10 min./1 Cycle; X, Y, Z axis each 1 hour | | | | |

Physical

| | | | | | |
|---------------|---|--|--|--|--|
| Case Size | 3.54 x 2.54 x 1.77 Inches (90.0 x 64.5 x 45.0 mm) | | | | |
| Case Material | Plastic | | | | |
| Connection | Screw Terminal | | | | |

Reliability Specifications

| Parameter | Conditions | Min. | Typ. | Max. | Units |
|-------------------------|--|------|------|------|--------|
| MTBF | MIL HDBK 217F, 25°C, Gnd Benign | 170 | | | kHours |
| Safety Standards | UL 1950, EN 60950, IEC 60950 | | | | |
| EMI Compliance | Compliance to EN55011, EN55022 (CISPR22) Class B | | | | |
| EMS Immunity Compliance | EN6100-4-2,3,4,5,6,8,11 Level 3 | | | | |

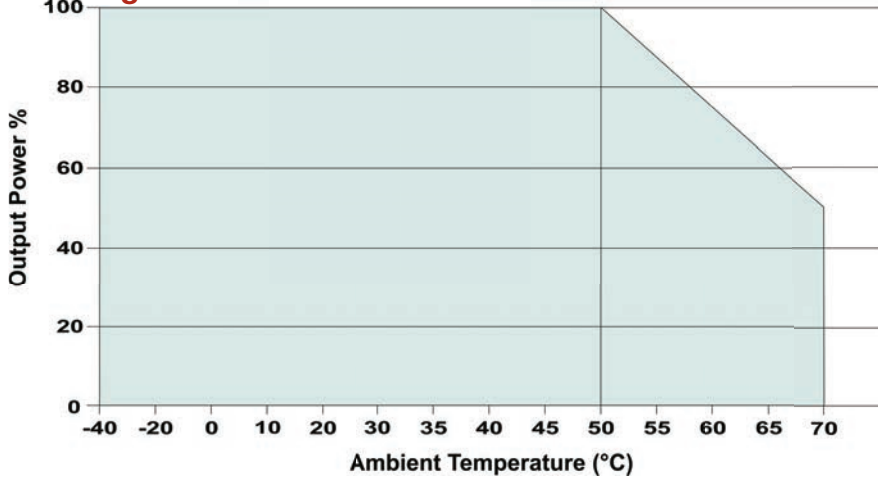
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| Model Number | Rated Power (W) | Input | | | Output | | | Over Voltage Protection (VDC) | Efficiency (% Typ) | Fuse Rating Slow-Blow (A) |
|--------------|-----------------|-----------------|---------|-------------|---------------|------------------|-------------------|-------------------------------|--------------------|---------------------------|
| | | Voltage (VAC) | | Current (A) | Voltage (VDC) | Current (Max. A) | Current Range (A) | | | |
| | | Universal Range | 115 VAC | 230 VAC | | | | | | |
| AD1048-12FS | 36 | 100 - 240 | 1.0 | 0.5 | 12 | 4.0 | 0 ~ 4.0 | 20.0 | 80 | 2.0 |
| AD1045-15FS | 45 | 100 - 240 | 1.0 | 0.5 | 15 | 3.0 | 0 ~ 3.0 | 20.0 | 81 | 2.0 |
| AD1048-24FS | 48 | 100 - 240 | 1.0 | 0.5 | 24 | 2.0 | 0 ~ 2.0 | 40.0 | 83 | 2.0 |
| AD1048-48FS | 48 | 100 - 240 | 1.0 | 0.5 | 48 | 1.0 | 0 ~ 1.0 | 60.0 | 83 | 2.0 |

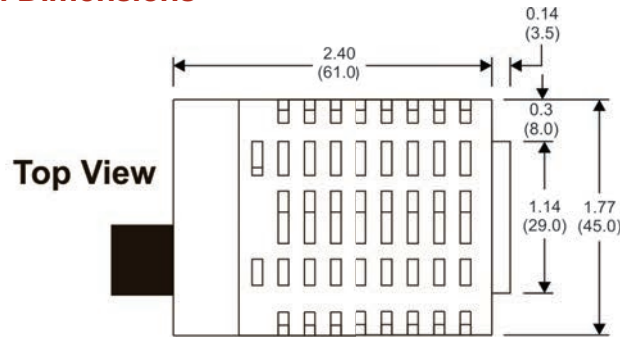
Notes:

- Load regulation is specified for a load change of 20% to 100%.
- Ripple & noise is measured using equipment with 20 Mhz of bandwidth with the unit under test operating at rated load and a 110 VAC input. Connection to the unit is made with a 0.1 μ F / 630V metalized capacitor & a 47 μ F electrolytic capacitor connected in parallel.
- Transient recovery is measured to within a 1% error band for a load step change of 50% to 100%.
- Isolation resistance is given for Input/Output and Input/FG. For Output/FG, it is 50 M Ω .
- Overload protection is power limiting. The unit recovers automatically when the fault is removed.
- Over voltage protection is a shut down type. The unit recovers automatically when the fault is removed.
- To mount the unit to the DIN rail, tilt the unit rearwards from the top, fitting the mount over the top of the rail. Press back on the bottom front of the unit until it locks in place on the rail. To remove the unit from the rail, pull the removal clip at the bottom rear of the unit downward with a screw driver. With the clip down, lift up on the unit from the bottom front until it clears the rail. Before installation or removal all wiring should be disconnected and the main power to the system shut off.
- When wiring the supply, all lines should be as thick and short as possible. AWG 14 wire is recommended for the **AD1048FS** series.
- The units should be mounted so they are vertically orientated. Air flow (if it is provided) would optimally flow from the bottom to the top of the unit.
- It is recommended that a fuse be used on the input of a power supply for protection. For the **AD1048FS** series, a 250 VAC 2.0A is recommended.

Derating Curve



Mechanical Dimensions

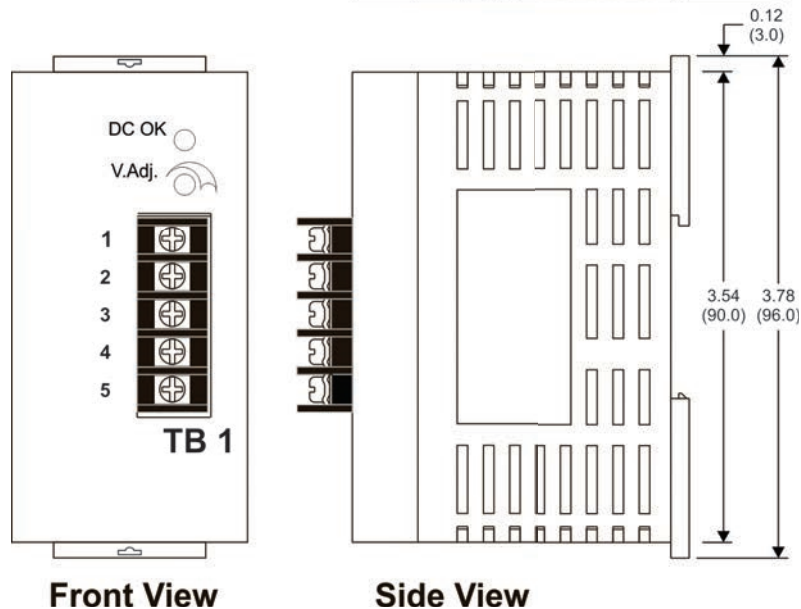


Connections TB 1

| Pin | Function |
|-----|-------------------|
| 1 | DC Output (+V) |
| 2 | DC Output (-V) |
| 3 | Frame Ground (FG) |
| 4 | AC/Neutral |
| 5 | AC/Live |

Notes:

- All dimensions are typical in inches (mm)
- Tolerance x.xx = ± 0.01 (± 0.25)



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