

AMC30 Series

30 Watts

- 90-305VAC Input, 47-440Hz
- IEC 62368-1 ITE approval & designed to meet IEC 60335-1 Home Appliance
- Encapsulated PCB mount / screw terminal option
- -40 to +85°C Operation
- EN55032 Level B conducted & radiated
- 3 Year warranty



Dimensions:

2.52 x 1.77 x 0.92" (64 x 45 x 23.5mm)

The AMC30 series of compact encapsulated AC-DC power modules are PCB mount and have low emissions, meeting EN55032 level B for both conducted and radiated noise. The units are suitable for home appliances designed to meet EN 60335-1, also they are approved to the latest EN 62368-1 safety standard. They provide up to 30W of power and have a wide temperature range from -40 to +85°C. The series offers low no-load power consumption of <0.1W and outputs are available from 5.1 to 24V. All models have a FiDUS 3 Year warranty.

Models & Ratings

| Model Number ⁽²⁾ | Output Power | Output voltage | Output Current | Efficiency | Capacitive Load | Ripple / Noise ⁽¹⁾ |
|-----------------------------|--------------|----------------|----------------|------------|-----------------|-------------------------------|
| AMC3005 | 23W | 5.1V | 4.60A | 84% | 6800uF | <120mV |
| AMC3012 | 30W | 12V | 2.50A | 88% | 1600uF | <150mV |
| AMC3015 | 30W | 15V | 2.00A | 87% | 1200uF | <150mV |
| AMC3024 | 30W | 24V | 1.25A | 86% | 470uF | <240mV |

Notes

1. Ripple and noise measured with 20MHz bandwidth and with 0.1uF and 47uF parallel capacitors

2. Add S2 to part number for screw terminal version

Key specifications

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---|---------|---------|-------|---|
| AC Input range | 90 | | 305 | VAC | Derate at 100VAC to 80% at 90VAC |
| Operating temperature | -40 | | 85 | °C | Derate linearly from 100% power at 50°C to 30% power at 85°C. 80% power max at -40°C, full power from -30°C. See derating curve |
| Efficiency | 84 | | 88 | % | See model table above. At 230VAC full load |
| Dimensions | 2.52 x 1.77 x 0.92" (64 x 45 x 23.5mm) | | | | |
| EMC | EN55032 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated. | | | | |
| Safety | UL / IEC / EN 62368-1, Designed to meet IEC / EN 60335-1 CE | | | | |

Input

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---------|---------|---------|--------|--|
| Input voltage | 90 | | 305 | VAC | Derate at 100VAC to 80% at 90VAC |
| | 120 | | 430 | VDC | DC fuse required |
| Input frequency | 47 | | 440 | Hz | |
| Power factor | | | | | EN61000-3-2 class A compliant |
| Input current | 400 | | 600 | mA rms | 600mA 115VAC and 400mA at 230VAC |
| Inrush current | 30 | | 60 | A | 30A at 115 and 60A at 230VAC. Cold start at 25°C |
| No load input power | | | 0.1 | W | |
| Earth leakage current | | | | | Class II construction, no earth |

Output

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|---------|---------|---------|----------|--|
| Output voltage | 5.1 | | 24 | VDC | See Model & Ratings table |
| Set point accuracy | | | ±2 | % | |
| Line regulation | | ±1 | | % | Low line to High line. |
| Load regulation | ±1.5 | | ±3 | % | 0 to 100% load. ±3% for 5.1V ±1.5% for all others |
| Minimum load | 0 | | | % | |
| Ripple & Noise | 120 | | 240 | mV pk-pk | See model table. Noise and ripple measured with 0.1uF ceramic and 47uF electrolytic. 20 MHz bandwidth. |
| Hold up time | 10 | | | mS | At 230VAC. Full load |
| Overload protection | | | | | Trip & restart. Automatic recovery |
| Short circuit protection | | | | | Trip & restart. Automatic recovery |
| Overvoltage protection | | | | | Latch reset |

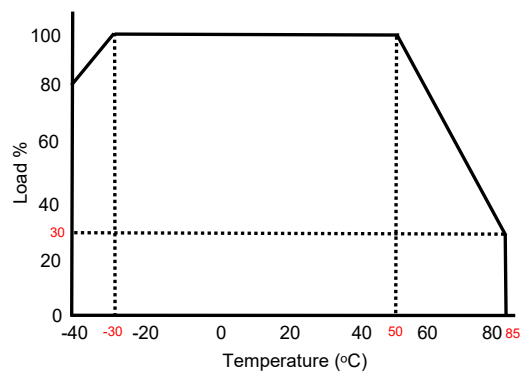
General

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------|---------|---------|---------|-------------------|---|
| Efficiency | 84 | | 88 | % | See models & Ratings table. At 230VAC full load |
| Isolation | 4000 | | | VAC | Input to output |
| Power density | | | 7.31 | W/In ³ | |
| MTBF | | >400 | | KHrs | As per MIL-HDBK-217F, 25°C GB |
| Weight | | 106 | | g | |

Environmental

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-------------------------|---------|---------|---------|-------|---|
| Operating temperature | -40 | | 85 | °C | Derate linearly from 100% power at 50°C to 30% power at 85°C. 80% power max at -40°C, full power from -30°C. See derating curve |
| Storage temperature | -40 | | 85 | °C | |
| Cooling | | | | | Convection cooled |
| Temperature coefficient | | | ±0.02 | %/°C | |
| Humidity | | | 95 | % RH | |

Derating curve



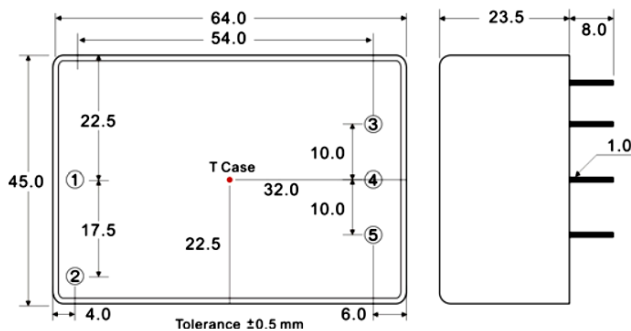
EMC: Emissions

| | Standard | Test level | Criteria | Notes & Conditions |
|------------------|-------------|------------|----------|--------------------|
| Conducted | EN55032 | B | | |
| Radiated | EN55032 | B | | |
| Harmonic current | EN61000-3-2 | Class A | | |
| Voltage flicker | EN61000-3-3 | | | |

Safety Approvals

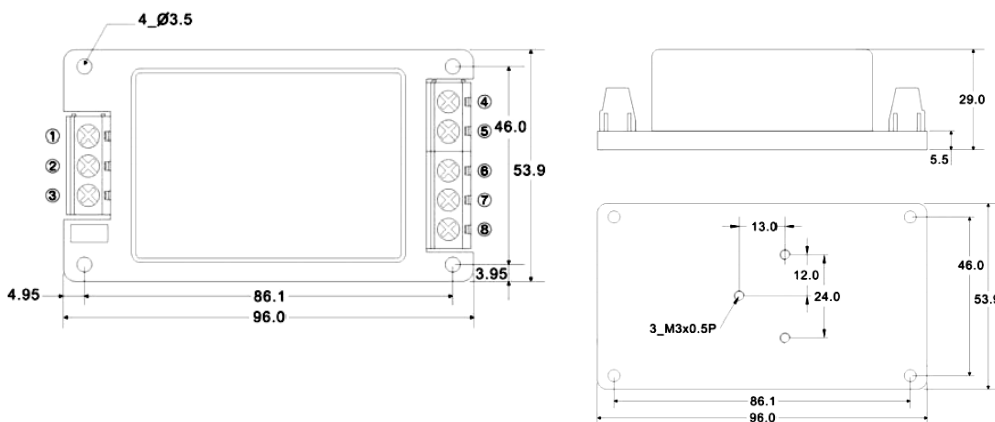
| | Safety standard | Notes & Conditions |
|----------------------------|---|----------------------------------|
| UL | UL 62368-1 | |
| CB | IEC 62368-1, Designed to meet IEC 60335-1 | |
| TUV | EN 62368-1, Designed to meet EN 60335-1 | |
| CE | | 2014/35/EU Low voltage directive |
| Equipment protection class | | Class II |

Mechanical Details



| Pin Connections | |
|-----------------|-----------|
| Pin | Function |
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | -DC OUT |
| 4 | NP |
| 5 | +DC OUT |

Screw terminal version



| Pin Connections | |
|-----------------|-----------|
| Pin | Function |
| 1 | AC IN (N) |
| 2 | NC |
| 3 | AC IN (L) |
| 4 | NC |
| 5 | -DC OUT |
| 6 | NC |
| 7 | +DC OUT |
| 8 | NC |

Dimension notes

- All dimensions shown in millimetres
- Pin diameter 0.5 ± 0.05 (0.02 ± 0.002)
- Case tolerance ± 0.5 (± 0.002)