

20 Watts

- Ultra compact size (2.07 x 1.08 x 0.93")
- 90-264VAC Input, 47-440Hz
- Single output 3.3 to 24V
- Encapsulated PCB mount
- -40 to +70°C Operation
- EN55022 Level B conducted & radiated
- 5 year warranty



The AMA20 series of ultra compact, encapsulated AC-DC power modules are PCB mount and have low emissions, meeting EN55022 level B for both conducted and radiated noise. The units provide 20W of power and have a wide temperature range from -40 to +70°C. Units offer low no-load power consumption of <0.25W and are available with outputs between 3.3 and 24V. High volumes are held in stock for the popular models and all models have a FiDUS 5 Year warranty.

Dimensions:

2.07 x 1.08 x 0.93" (52.5 x 27.5 x 23.5mm)

Models & Ratings

| Model Number | Output Power | Output voltage | Output Current | Efficiency |
|------------------------|--------------|----------------|----------------|------------|
| AMA2003 | 11.88W | 3.3V | 3.6A | 75% |
| AMA2005 | 18W | 5.1V | 3.6A | 80% |
| AMA2012 ⁽¹⁾ | 20W | 12V | 1.67A | 84% |
| AMA2015 | 20W | 15V | 1.33A | 85% |
| AMA2024 ⁽¹⁾ | 20W | 24V | 0.83A | 85% |

Notes

1. High stock items

Key specifications

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---|---------|---------|-------|--|
| AC Input range | 90 | | 264 | VAC | |
| Operating temperature | -40 | | 70 | °C | See derating curve and Environmental notes |
| Efficiency | 75 | | 85 | % | |
| Dimensions | 2.07 x 1.08 x 0.93" (52.5 x 27.5 x 23.5mm) | | | | |
| EMC | EN55022 Level B Conducted and Radiated. EN61000-3 and EN61000-4, harmonics, flicker, Surge, EFT, ESD, conducted and radiated, | | | | |
| Safety | UL60950-1, CSA22.2 No 234 as per cUL, CE | | | | |

Input

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|----------------------------|---------|---------|--------|---------------------------------|
| Input voltage | 90 | | 264 | VAC | No derating |
| | 120 | | 370 | VDC | DC fuse required |
| Input frequency | 47 | | 440 | Hz | |
| Power factor | | | | | EN61000-3-2 class A compliant |
| Input current | | | 385 | mA rms | At 115VAC |
| Inrush current | | 20/40 | | A | 115/230VAC cold start at 25°C |
| No load input power | | | 0.25 | W | |
| Earth leakage current | | | | | Class II construction, no earth |
| Input protection | 2A Slow blow fuse required | | | | |

Output

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|---------|---------|---------|----------|---|
| Output voltage | 3.3 | | 24 | VDC | See Model & Ratings table |
| Set point accuracy | | | ±2 | % | |
| Line regulation | | | ±0.5 | % | Low line to High line |
| Load regulation | | | ±1 | % | 5 to 100% |
| Minimum load | 0 | | | % | |
| Transient response | | | 4 | % | For a 25% load change, recovery to within 1% in less than 500uS. |
| Ripple & Noise | | | 120 | mV pk-pk | 3.3 and 5V models. |
| | | | ±1% | mV pk-pk | All other models. All models measured with 0,1uF ceramic and 47uF electrolytic. 20 MHz bandwidth. |
| Hold up time | 11 | | 56 | mS | Min. at 115VAC and Max at 230VAC. Full load |
| Overload protection | 110 | | 239 | % | |
| Short circuit protection | | | | | Trip & restart. Automatic recovery |
| Overvoltage protection | 114 | | 138 | % | |

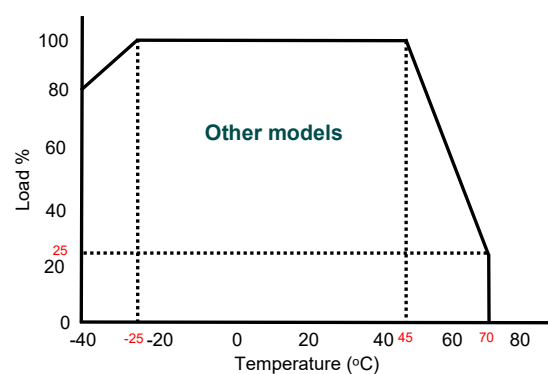
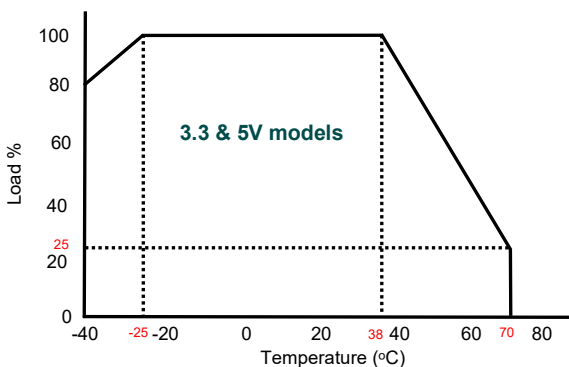
General

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------|---------|---------|---------|-------------------|-------------------------------|
| Efficiency | 75 | | 85 | % | See Model & Ratings table |
| Isolation | 3000 | | | VAC | Input to output |
| Switching frequency | 66 | | 132 | KHz | |
| Power density | | | 9.6 | W/In ³ | |
| MTBF | | >400 | | KHrs | As per MIL-HDBK-217F, 25°C GB |
| Weight | | 62 | | g | |

Environmental

| Parameter | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-------------------------|---------|---------|---------|-------|--|
| Operating temperature | -40 | | 70 | °C | 3.3 and 5V models: derate linearly from 100% power at 38°C to 25% at 70°C . Other models: derate linearly from 100% power at 45°C to 25% at 70°C . All models: derating values vary if AC input outside of 110-230VAC. Contact sales |
| Storage temperature | -40 | | 85 | °C | |
| Cooling | | | | | Convection cooled |
| Temperature coefficient | | | ±0.05 | %/°C | |
| Humidity | | | 95 | % RH | Non-condensing |

Derating curve



EMC: Emissions

| | Standard | Test level | Criteria | Notes & Conditions |
|------------------|-------------|------------|----------|--------------------|
| Conducted | EN55022 | B | | |
| Radiated | EN55022 | B | | |
| Harmonic current | EN61000-3-2 | Class A | | |
| Voltage flicker | EN61000-3-3 | | | |

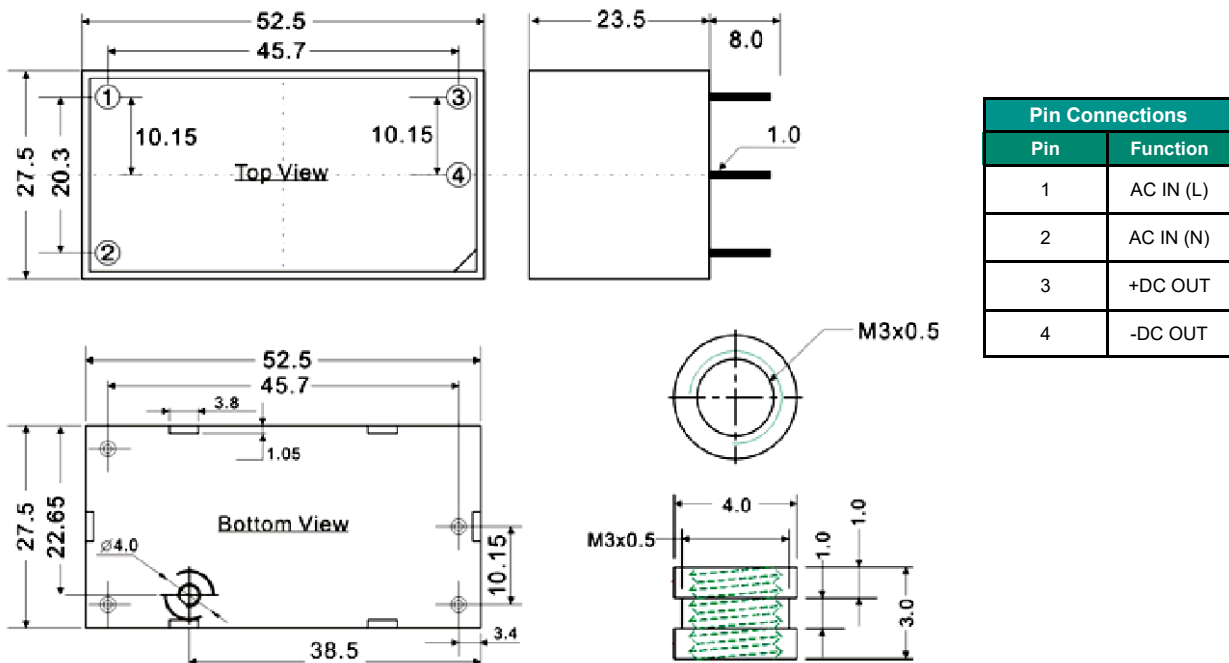
EMC: Immunity

| | Standard | Test level | Criteria | Notes & Conditions |
|-----------------|-------------|------------------------|----------|--------------------|
| ESD | EN61000-4-2 | ±4kV contact, ±8kV air | A | |
| Radiated | EN61000-4-3 | 3V/m | A | |
| EFT | EN61000-4-4 | 3 | A | |
| Surges | EN61000-4-5 | Installation Class 3 | A | |
| Conducted | EN61000-4-6 | 3Vrms | A | |
| Magnetic Fields | EN61000-4-8 | 1A/m | | |

Safety Approvals

| | Safety standard | Notes & Conditions |
|----------------------------|---------------------------------------|--|
| UL | UL60950-1, CSA 22.2 No 234 as per cUL | |
| CE | | 2011/65/EU RoHS Directive and 2015/35/EU Low voltage directive |
| Equipment protection class | | Class II |

Mechanical Details



Dimension notes

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