# AFC-E1 Series

## 10 W Switching Power Module for PCB Mounting

CoolPower Solutions

### KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output and Low Ripple and Low Noise
- Isolation Class II
- Small Size: 2.06 x 1.07 x 0.93 Inches
- Screw Terminal For Optional
- CE, CB, UL Approval
- 3-Years Product Warranty




E199779 LEVEL3

### ELECTRICAL SPECIFICATIONS

| Model No. | | AFC-3.3S-E1 | AFC-5S-E1 | AFC-12S-E1 | AFC-15S-E1 | AFC-24S-E1 |
|---|---|---|---|---|---|---|
| Max Output Wattage (W) | | 8.25W | 10W | 10W | 10W | 10W |
| Input | Voltage | 90-264 VAC or 120-370 VDC | | | | |
| | Frequency (Hz) | 47-440 Hz | | | | |
| | Current (Full load) | 220 mA max. (115 VAC) / 150 mA max. (230 VAC) | | | | |
| | Inrush Current (<2ms) | 23 A max. (115 VAC) / 46 A max. (230 VAC) | | | | |
| | Leakage Current | 0.25 mA max. | | | | |
| | External Fuse (recommend) | 2 A slow blow type | | | | |
| Output | Voltage (V.DC.) | 3.3V | 5V | 12V | 15V | 24V |
| | Voltage Accuracy | ±2% | | | | |
| | Current (mA) max | 2500 | 2000 | 833 | 667 | 417 |
| | Line Regulation (LL-HL) (typ.) | ±0.3%. | | | | |
| | Load Regulation (5-100%) (typ.) | ±0.5%. | | | | |
| | Minimum Load | 0% | | | | |
| | Maximum Capacitive Load | 75000 uF | 40000 uF | 8500 uF | 3500 uF | 1200 uF |
| | Ripple | <0.2% Vout +40mV max (Vp-p) | | | | |
| | Noise | <0.5% Vout +50mV max (Vp-p) | | | | |
| | Efficiency | 74% | 79% | 82% | 78% | 80% |
| | Hold-up Time | 15 ms min. | | | | |
| | Switching Frequency | 125 kHz | | | | |
| Protection | Over Power Protection | Hiccup technique, auto-recovery | | | | |
| | Over Voltage Protection | Zener diode clamp | | | | |
| | Short Circuit Protection | Hiccup mode, indefinite (automatic recovery) | | | | |
| Isolation | Input-Output (V.AC) | 3000V | | | | |
| Environment | Operating Temperature | -40°C…+70°C (with derating) | | | | |
| | Storage Temperature | -40°C…+85°C | | | | |
| | Temperature Coefficient | ±0.02%/°C | | | | |
| | Humidity | 20-85% RH | | | | |
| | MTBF | >330,000 h @ 25°C (MIL-HDBK-217F) | | | | |
| Physical | Dimension (L x W x H) | 2.06 x 1.07 x 0.93 Inches ( 52.4 x 27.2 x 23.5 mm ) Tolerance ±0.5 mm | | | | |
| | Case Material | Plastic resin with Fiberglass (flammability to UL 94V-0) | | | | |
| | Weight | 51 g | | | | |
| | Cooling Method | Free air convection | | | | |
| Genera | Vibration | 10-55 Hz 0.5 mm width/ 1 minute cycle | | | | |
| | Shock | 20 G (3 directions each 3 times.) | | | | |
| Safety | Agency Approvals | UL/cUL, CE, CB | | | | |
| EMC | EMI (Conducted & Radiated Emission) | EN 55022 class B | | | | |
| | EMS (Noise Immunity) | EN 55024 | | | | |

1.All specifications valid at normal input voltage, full load and +25°C after warm-up time unless otherwise stated.

2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.


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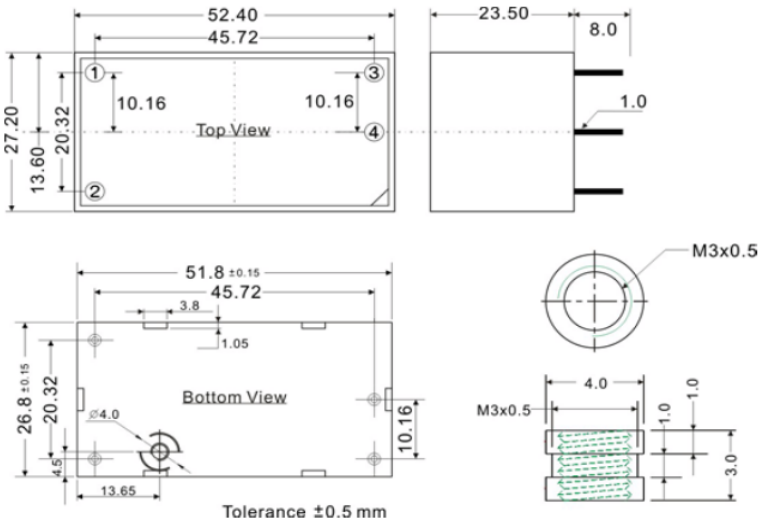
Email: info@cps.fi
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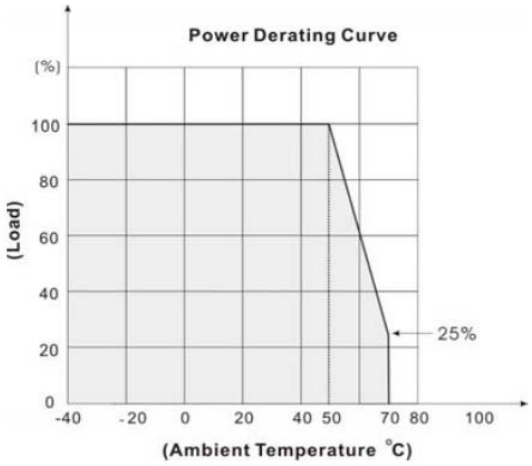
## MECHANICAL DIMENSION ( Top View )




| PIN# | SINGLE |
|---|---|
| 1 | AC IN (N) |
| 2 | AC IN (L) |
| 3 | +DC OUT |
| 4 | -DC OUT |

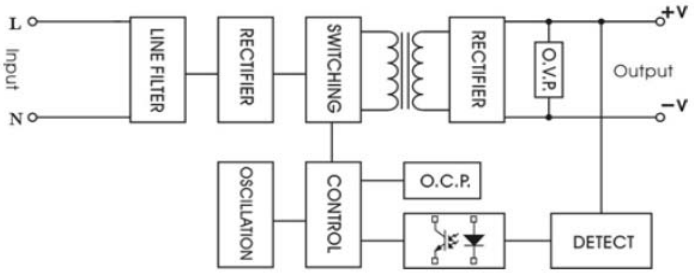
Maximum Torque 12{1.21}(kgf.cm{N.m})

## DERATING




## BLOCK DIAGRAM

Single Output





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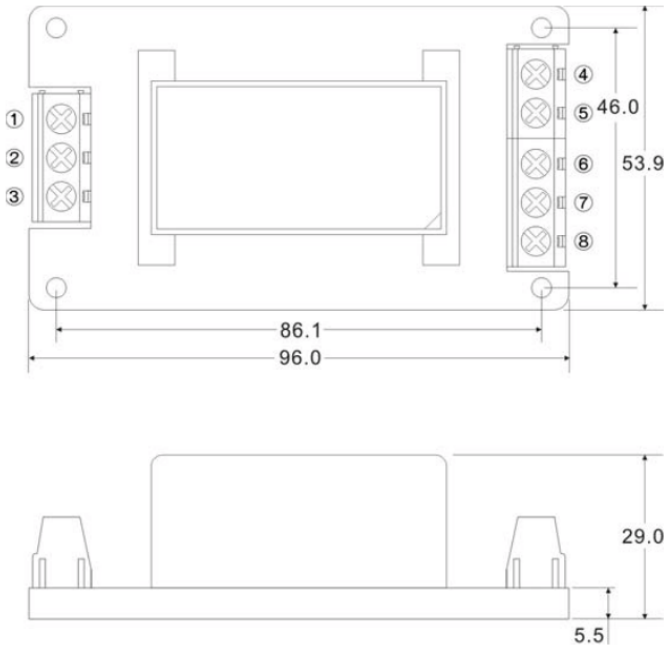
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### SCREW TERMINAL

#### AFC- E1-A2



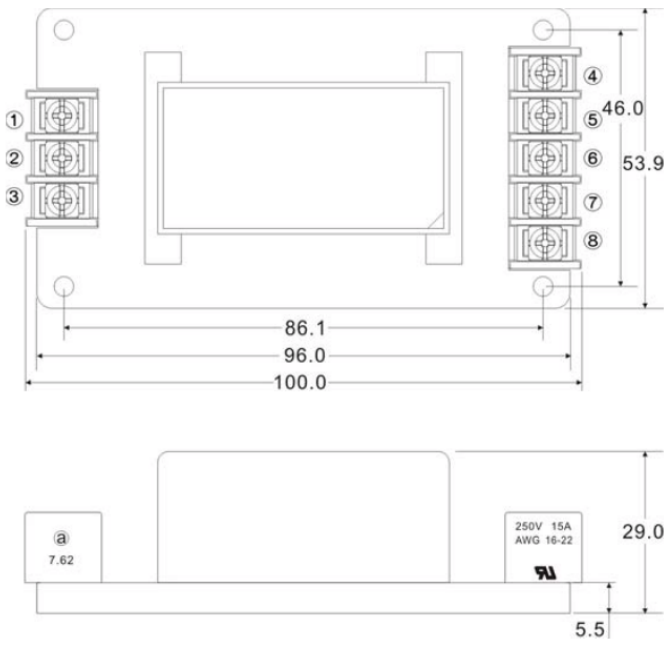
| PIN# | Single |
|---|---|
| 1 | NO CONNECT |
| 2 | AC IN (N) |
| 3 | AC IN (L) |
| 4. | NO CONNECT |
| 5 | +DC OUT |
| 6 | -DC OUT |
| 7 | NO CONNECT |
| 8 | NO CONNECT |




#### AFC E1-A5



| PIN# | Single |
|---|---|
| 1 | NO CONNECT |
| 2 | AC IN (N) |
| 3 | AC IN (L) |
| 4. | NO CONNECT |
| 5 | +DC OUT |
| 6 | -DC OUT |
| 7 | NO CONNECT |
| 8 | NO CONNECT |





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