

KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Regulated Output
- Low Ripple and Noise
- Small Size But Higher Wattage
- Screw Terminal For Optional
- CE, CB and UL Approval
- 3-Years Product Warranty



ELECTRICAL SPECIFICATIONS



| Model No. (Single Output) | AKC-3.3S | AKC-5S | AKC-7.35S | AKC-9S | AKC-12S | AKC-15S | AKC-24S |
|-----------------------------|---------------------------------|----------|-----------|---------|---------|---------|---------|
| Max output wattage (W) | 14.85W | 20W | 20W | 20W | 20W | 20W | 20W |
| Output | Voltage (V.DC.) | 3.3V | 5V | 7.35V | 9V | 12V | 24V |
| | Current (mA) max | 4500 | 4000 | 2730 | 2230 | 1670 | 840 |
| | Voltage set accuracy | ±2% | ±2% | ±2% | ±2% | ±2% | ±2% |
| | Line Regulation (LL-HL) (typ.) | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| | Load Regulation (0-100%) (typ.) | 1% | 1% | 1% | 1% | 1% | 1% |
| | Minimum load | 0% | 0% | 0% | 0% | 0% | 0% |
| | Efficiency (typ.) | 75% | 79% | 82% | 82% | 83% | 84% |
| | Capacitor Load (max.) | 25000 uF | 13000 uF | 2200 uF | 1100 uF | 920 uF | 820 uF |

| Model No. (Dual Output) | AKC-5D | | AKC-12D | | AKC-15D | | |
|---------------------------|----------------------------------|----------|----------|----------|----------|----------|----------|
| Max output wattage (W) | 20W | | 20W | | 20W | | |
| Output | | Output 1 | Output 2 | Output 1 | Output 2 | Output 1 | Output 2 |
| | Voltage (V.DC.) | +5V | -5V | +12V | -12V | +15V | -15V |
| | Current (mA) max | 2000 | 2000 | 833 | 833 | 667 | 667 |
| | Voltage set accuracy | ±2% | | ±2% | | ±2% | |
| | Line Regulation (LL-HL) (typ.) | ±0.5% | | ±0.5% | | ±0.5% | |
| | Load Regulation (10-100%) (typ.) | ±3% | | ±3% | | ±3% | |
| | Minimum load | 0% | | 0% | | 0% | |
| | Efficiency (typ.) | 79% | | 82% | | 82% | |
| | Capacitor Load (max.) | ±4300 uF | | ±560 uF | | ±220 uF | |

| Model No. (Triple Output) | AKC-5S12D | | | AKC-5S15D | | | |
|-----------------------------|----------------------------------|-------------------|----------|-----------|-------------------|----------|----------|
| Max output wattage (W) | 20W | | | 20W | | | |
| Output | | Output 1 | Output 2 | Output 3 | Output 1 | Output 2 | Output 3 |
| | Voltage (V.DC.) | 5 | +12 | -12 | 5 | +15 | -15 |
| | Current (mA) max | 2800 | 250 | 250 | 2800 | 200 | 200 |
| | Voltage set accuracy | ±2% | | ±2% | ±2% | | ±2% |
| | Line Regulation (LL-HL) (typ.) | 1% | 5% | | 1% | 5% | |
| | Load Regulation (20-100%) (typ.) | 2% | 5% | | 2% | 5% | |
| | Minimum load | 10% | | | 10% | | |
| | Efficiency (typ.) | 81% | | | 81% | | |
| | Capacitor Load (max.) | 3500 uF / ±220 uF | | | 3500 uF / ±150 uF | | |

AKC SERIES
20 Watts

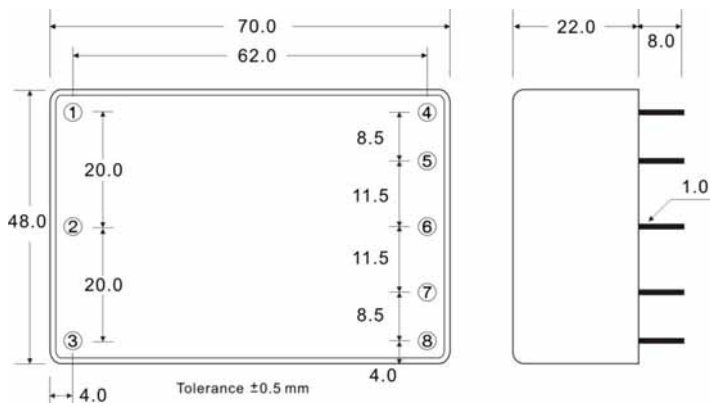
| | | |
|-------------|-------------------------------------|---|
| Input | Voltage | 90-264 VAC or 100-375 VDC |
| | Frequency (Hz) | 47-440 Hz |
| | Current (Full load) | 400 mA max. (115 VAC) / 270 mA max. (230 VAC) |
| | Inrush current (<2ms) | 30 A max. (115 VAC) / 50 A max. (230 VAC) |
| | Leakage Current | 0.25 mA |
| | External Fuse (recommend) | 2 A slow blow type |
| | Power Saving | 230V < 0.5W |
| Output | Ripple | <0.2% Vout +40mV max (Vp-p) |
| | Noise | <0.5% Vout +50mV max (Vp-p) |
| | Hold-up time (typ.) | 13 ms min. |
| | Switching frequency | 100 kHz |
| Protection | Over current protection | Above 105% rated output power |
| | Over voltage protection | Zener diode clamp |
| | Short circuit protection | Hiccup mode, indefinite (automatic recovery) |
| Isolation | Input-Output (V.AC) | 3000V |
| | Input-FG (V.AC) | 3000V |
| | Output-FG (V.AC) | 500V |
| Environment | Operating temperature | -25°C...+70°C (with derating) |
| | Storage temperature | -40°C...+85°C |
| | Temperature coefficient | 0.02%/°C |
| | Humidity | 95% RH |
| | MTBF | >200,000 h @ 25°C (MIL-HDBK-217F) |
| Physical | Dimension (L x W x H) | 2.76 x 1.89 x 0.87 Inches (70.0 x 48.0 x 22.0 mm) Tolerance ±0.5 mm |
| | Case Material | Plastic resin + Fiberglass (flammability to UL 94V-0) |
| | Weight | 110 g |
| | Cooling method | Free air convection |
| Safety | Agency Approvals | CE, UL/cUL, 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.

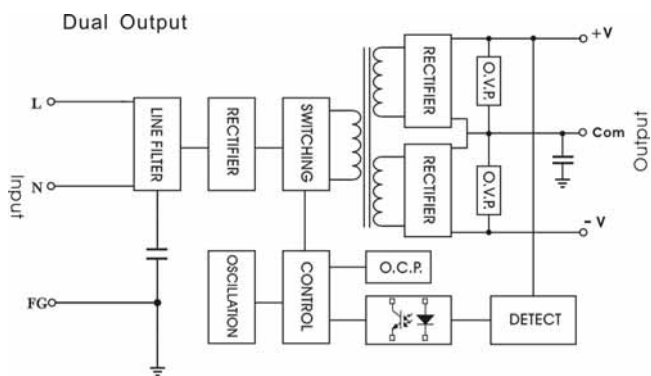
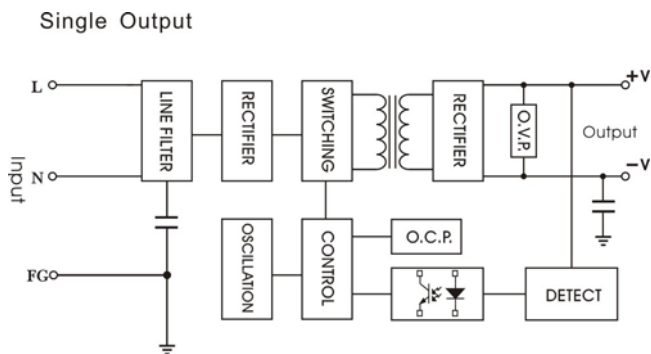
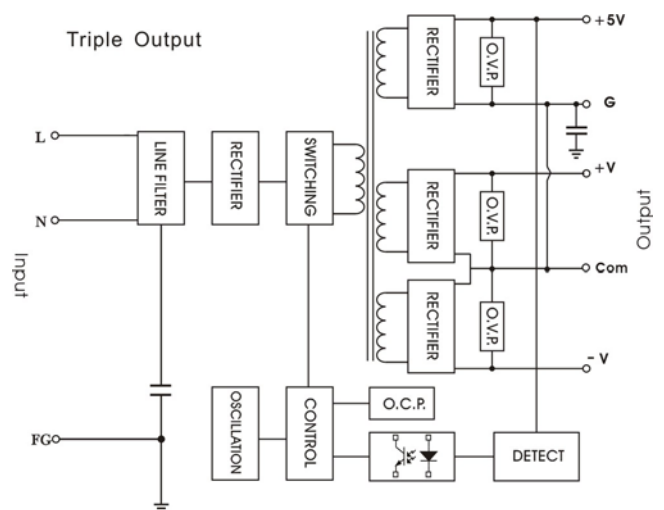
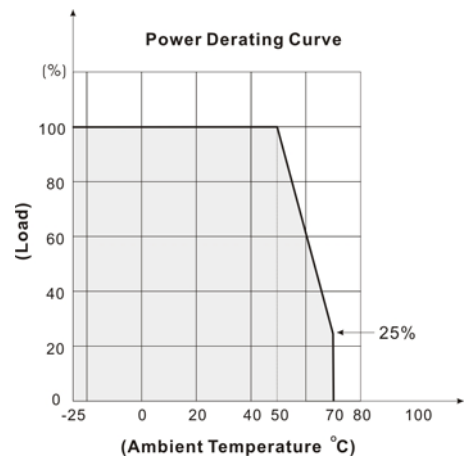
2.Ripple & Noise are measured at 20MHz of bandwidth with 0.1UF & 47UF parallel capacitor.

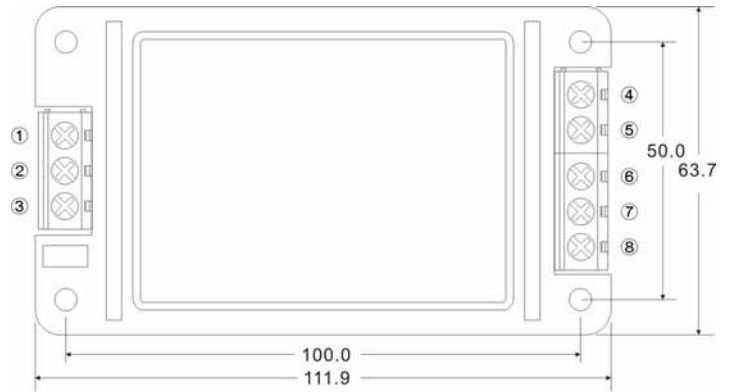
Note

- The triple output required a minimum 10% loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices; however they may not meet all listed specification.
- Load regulation for triple output:
Main output (V1): 20% to 100% with 20% to 100% balanced on auxiliaries.
Auxiliary outputs (V2 and V3): 20% to 100% balanced on all outputs.
- Cross regulation for dual output: asymmetrical load 25% / 100% FL
Cross regulation for triple output:
Main output 100% load, auxiliary 100%,other auxiliary 25% to 100%.
Auxiliary outputs(V2 and V3):main output 100% load, auxiliary 100%, other auxiliary 25% to 100% or main output 25%,auxiliary 25%,other auxiliary 25% to 100%.

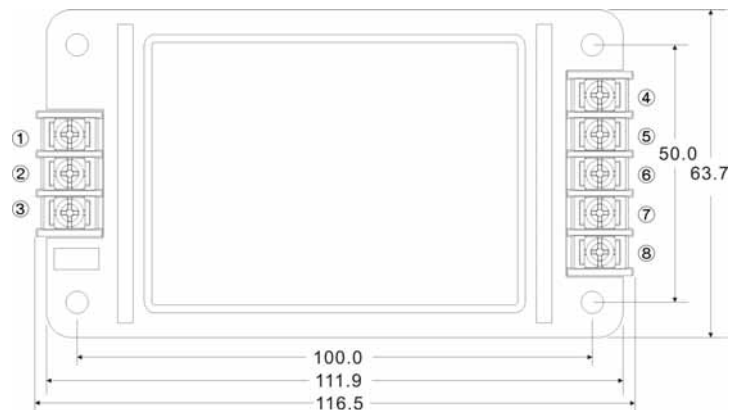
MECHANICAL DIMENSION (Top View)


| PIN# | SINGLE | Dual | Triple |
|------|-----------|-----------|-----------|
| 1 | FG | FG | FG |
| 2 | AC IN (N) | AC IN (N) | AC IN (N) |
| 3 | AC IN (L) | AC IN (L) | AC IN (L) |
| 4 | NO PIN | NO PIN | -DC OUT |
| 5 | -DC OUT | -DC OUT | COMMON |
| 6 | NO PIN | COMMON | +DC OUT |
| 7 | +DC OUT | +DC OUT | +5V RTN |
| 8 | NO PIN | NO PIN | +5V OUT |

BLOCK DIAGRAM

DERATING


SCREW TERMINAL
AKC-A2


| PIN# | Single | Dual | Triple |
|------|------------|------------|-----------|
| 1 | FG | FG | FG |
| 2 | AC IN (N) | AC IN (N) | AC IN (N) |
| 3 | AC IN (L) | AC IN (L) | AC IN (L) |
| 4 | NO CONNECT | NO CONNECT | -DC OUT |
| 5 | -DC OUT | -DC OUT | COMMON |
| 6 | NO CONNECT | COMMON | +DC OUT |
| 7 | +DC OUT | +DC OUT | +5V RTN |
| 8 | NO CONNECT | NO CONNECT | +5V OUT |


AKC-A5


| PIN# | Single | Dual | Triple |
|------|------------|------------|-----------|
| 1 | FG | FG | FG |
| 2 | AC IN (N) | AC IN (N) | AC IN (N) |
| 3 | AC IN (L) | AC IN (L) | AC IN (L) |
| 4 | NO CONNECT | NO CONNECT | -DC OUT |
| 5 | -DC OUT | -DC OUT | COMMON |
| 6 | NO CONNECT | COMMON | +DC OUT |
| 7 | +DC OUT | +DC OUT | +5V RTN |
| 8 | NO CONNECT | NO CONNECT | +5V OUT |

