

90 Watt

- Energy Efficiency Level VI
- European CoC Tier 2 & EU2019/1782
- Medical and ITE Approvals
- Optional Class II Versions
- Optional White Versions
- Output Voltages from 12 V to 48 V
- Optional AC Cable Restraint
- 3 Years Warranty



Dimensions:

AKM90:
5.96 x 2.36 x 1.46" (151.5 x 60.0 x 37.0 mm)

The AKM90 series of desktop adaptors comply with the latest energy efficiency level VI standards with high active mode efficiency and extremely low no load power consumption. Available with a standard jack plug connector these adaptors suit a wide variety of cost sensitive industrial and medical applications while maintaining industry leading performance.

Models & Ratings

| Output Power | Output Voltage | Output Current | Total Regulation ⁽¹⁾ | Efficiency ⁽²⁾ | Model Number ^(3,4) |
|--------------|----------------|----------------|---------------------------------|---------------------------|-------------------------------|
| 84W | 12.0 V | 7.00 A | 5% | 90.1% | AKM90PS12 |
| 85W | 15.0 V | 5.67 A | 5% | 90.9% | AKM90PS15 |
| 90W | 19.0 V | 4.76 A | 5% | 90.7% | AKM90PS19 |
| | 24.0 V | 3.75 A | 5% | 90.5% | AKM90PS24 |
| | 48.0 V | 1.88 A | 5% | 89.6% | AKM90PS48 |

Notes

1. Total regulation includes initial set accuracy, line and load regulation.
2. Typical average value measured at 25%, 50%, 75% and 100% at 230 VAC.
3. For white case version add suffix '-W' e.g. AKM90PS12-W. MOQ applies, contact sales for details.

4. For optional Class II version add suffix C2, e.g. AKM90PS24C2.

Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------|--|---------|---------|-------|------------------------------|
| Input Voltage | 90 | | 264 | VAC | |
| Input Frequency | 47 | | 63 | Hz | |
| Input Current | | | 2.0 | A | 90 VAC |
| Inrush Current | | | 100 | A | 230 VAC, cold start at 25 °C |
| No Load Input Power | | | 150 | mW | |
| Input Protection | Internal fuse in both line and neutral | | | | |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|--------------------------|---------|---------|-----------|-------------|---|
| Output Voltage | 12 | | 48 | V | See Models and Ratings table |
| Minimum Load | 0 | | | A | No minimum load required |
| Start Up Delay | | | 4 | s | |
| Start Up Rise Time | | | 120 | ms | |
| Hold Up Time | 10 | | | ms | Full load and 100 VAC |
| Total Regulation | | | 5 | % | See Models and Ratings table |
| Transient Response | | | 4 | % deviation | Recovery within <1% within 500 µs for a 60% step load change at 0.15 A/µs |
| Ripple & Noise | | | 150 / 240 | mV pk-pk | 12V / Others. Measured with 20 MHz bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor |
| Overload Protection | 125 | | 170 | % | |
| Short Circuit Protection | | | | | Continuous, trip and restart (hiccup mode) with auto recovery |
| Temperature Coefficient | | | 0.05 | %/°C | |

General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---------------------------|------------------|------------|---------|--------|---|
| Efficiency | | 89 | | % | Typical average of efficiencies measured at 25%, 50%, 75% and 100% load and 115 VAC input |
| Energy Efficiency | | | | | Level VI, EU2019/1782, CoC T2 |
| Isolation | Input to Output | 4000 | | VAC | 2 x MOPP |
| | Input to Ground | 1500 | | VAC | |
| | Output to Ground | | | VDC | |
| Leakage Current | | | 100 | µA | 264 VAC, 60 Hz |
| Switching Frequency | 24 | | 85 | kHz | Variable |
| Mean Time Between Failure | 250 | | | kHrs | MIL-HDBK-217F at 25 °C GB |
| Weight | | 0.93 (420) | | lb (g) | |

Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---------|---------|---------|-------|---|
| Operating Temperature | 0 | | +60 | °C | Derate from 100% load at 40 °C to 50% load at 60 °C |
| Storage Temperature | -40 | | +80 | °C | |
| Operating Humidity | 5 | | 90 | % | RH, non-condensing |
| Operating Altitude | | | 5000 | m | |
| Cooling | | | | | Natural convection |
| Shock | | | | | 1 m drop onto concrete on each of 6 axes, non operating |
| Vibration | 10 | | 300 | Hz | 2 g, 0.3 decades/min, 15 mins for each of 3 axes |

EMC: Emissions

| Phenomenon | Standard | Test Level | Notes & Conditions |
|------------------|-------------|------------|--------------------|
| Conducted | EN55032 | Level B | |
| Radiated | EN55032 | Level B | |
| Harmonic Current | EN61000-3-2 | Class A | |
| Voltage Flicker | EN61000-3-3 | | |

EMC: Immunity

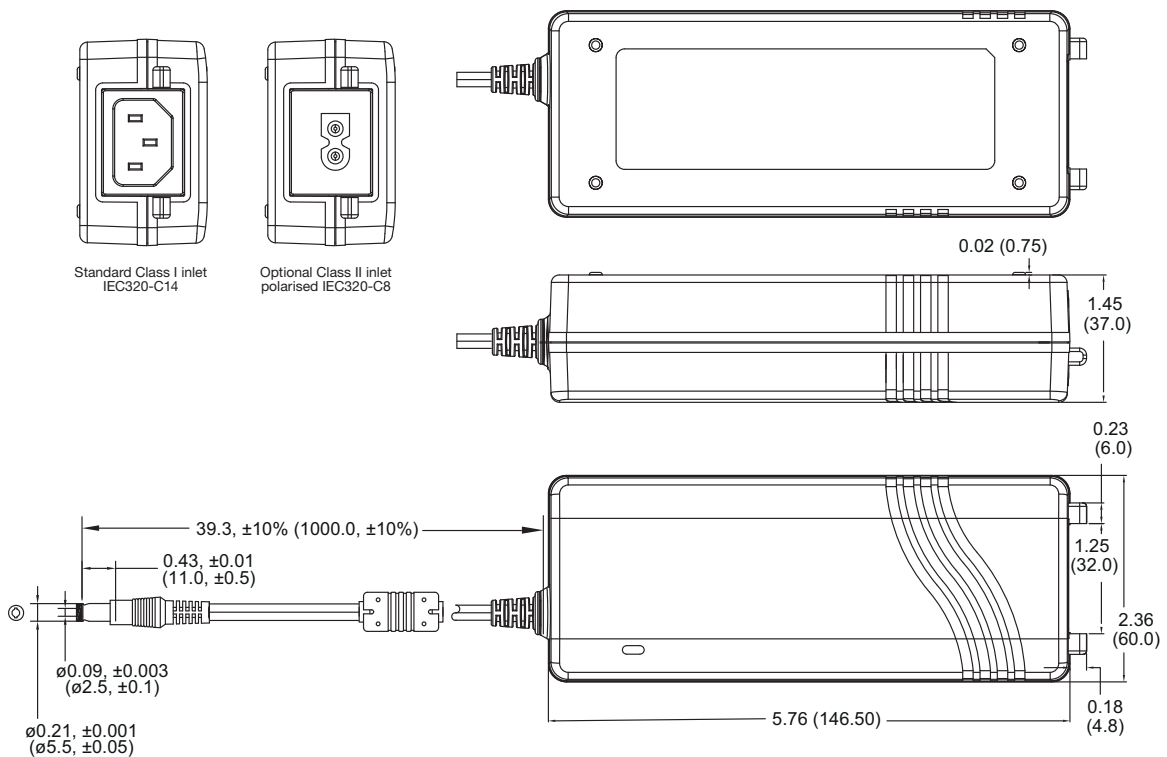
| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|------------------------|--------------|---------------------------|----------|--|
| Medical Device EMC | IEC60601-1-2 | Ed.4.0 : 2014 | as below | |
| Low Voltage PSU EMC | EN61204-3 | High severity level | as below | |
| ESD Immunity | EN61000-4-2 | ±8 kV contact, ±15 kV air | A | |
| Radiated Immunity | EN61000-4-3 | 10 V/m | A | 80-2700MHz. IEC60601-1-2 Ed.4 at other fixed frequencies |
| EFT/Burst | EN61000-4-4 | Level 3 | A | |
| Surge | EN61000-4-5 | Installation Class 3 | A | |
| Conducted Immunity | EN61000-4-6 | 6 V | A | |
| Magnetic Fields | EN61000-4-8 | 30 A/m | A | |
| Dips and Interruptions | EN61000-4-11 | Dip: 100% 10 ms | A | |
| | | Dip: 70% 500 ms | B | |
| | | Int: 100% 5000 ms | B | |
| | EN60601-1-2 | Dip: 30% 25 AC Cycles | A/B | High Line/Low Line |
| | | Int: 100% 0.5 AC Cycle | A | At 8 angles |
| | | Int: 100% 1 AC Cycle | A | |
| | | Int.: >95% 5000 ms | B | |

Safety Approvals

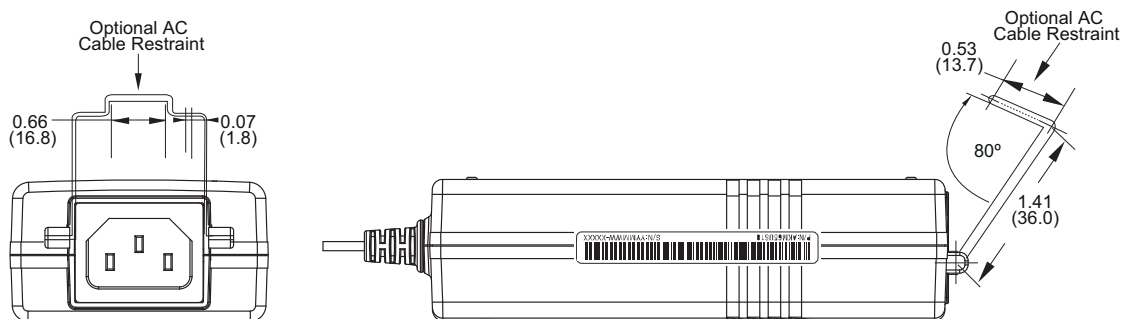
| Certification | Safety Standard | Notes & Conditions |
|---------------|--|---|
| UL | UL62368-1 | Information Technology (approved for 0 to 40°C ambient) |
| | ANSI/AAMI ES 60601-1 | Medical, 2 x MOPP (approved for 0 to 40°C ambient) |
| EN | EN62368-1 | Information Technology (approved for 0 to 40°C ambient) |
| | EN60601-1 | Medical, 2 x MOPP (approved for 0 to 40°C ambient) |
| CB | IEC62368-1 | Information Technology (approved for 0 to 40°C ambient) |
| | IEC62368-1 | Medical, 2 x MOPP (approved for 0 to 40°C ambient) |
| CSA | CSA C22.2 No. 60601 | Medical, 2 x MOPP (approved for 0 to 40°C ambient) |
| CCC | China Compulsory Certification, GB4943 | Information Technology (approved for 0 to 40°C ambient) |
| AU/NZ | AU/NZ 60950.1 | Information Technology (approved for 0 to 40°C ambient) |
| CE | Meets all applicable directives | |
| UKCA | Meets all applicable legislation | |

Mechanical Details

AKM90PSXX



AKM90PSxx with Optional AC Cable Restraint



Notes

1. For optional AC cable restraint, order additional part AFM45-60 AC Clip.
2. For correct restraint, AC mains lead must be Interpower Corporation, part number 70006020300.
3. AC cable restraint is not suitable for use on Class II version.
4. Output plug: $\varnothing 5.5 \times \varnothing 2.5 \times 11.0$ mm, centre positive.
5. The standard IEC320-C7 cable fits the polarised IEC320-C8 (C8P) connector.