

## 48 Watt

- Energy Efficiency Level VI
- European CoC Tier 2
- ITE & Medical (2 x MOPP) approvals
- 4th Edition Medical EMC
- Class I as standard, Class II optional
- Class B conducted & radiated emissions
- Input voltage range 90 to 264VAC
- Output voltages from 9 to 48VDC
- 0°C to +60°C operating temperature
- 3 Years Warranty



### Dimensions:

#### AKM:

4.82 x 2.02 x 1.24" (122.4 x 51.4 x 31.5 mm)

The AKM45 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 <sup>(1)</sup> | Efficiency <sup>(2)</sup> | Model Number <sup>(3,4)</sup> |
|--------------|----------------|----------------|---------------------------------|---------------------------|-------------------------------|
| 40.5 W       | 9.0 V          | 4.50 A         | 5%                              | 89.8%                     | AKM45US09                     |
| 48 W         | 12.0 V         | 4.00 A         | 5%                              | 90.5%                     | AKM45US12                     |
|              | 15.0 V         | 3.20 A         | 5%                              | 90.5%                     | AKM45US15                     |
|              | 18.0 V         | 2.66 A         | 5%                              | 90.6%                     | AKM45US18                     |
|              | 24.0 V         | 2.00 A         | 5%                              | 90.2%                     | AKM45US24                     |
|              | 48.0 V         | 1.00 A         | 5%                              | 91.2%                     | AKM45US48                     |

### 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. AKM45US12-W. MOQ applies, contact sales for details.

4. For optional Class II version add suffix C2, e.g. AKM45US24C2.

### Input

| Characteristic      | Minimum                                | Typical | Maximum | Units | Notes & Conditions           |
|---------------------|----------------------------------------|---------|---------|-------|------------------------------|
| Input Voltage       | 90                                     |         | 264     | VAC   |                              |
| Input Frequency     | 47                                     |         | 63      | Hz    |                              |
| Input Current       |                                        |         | 1.3     | A     | 90 VAC                       |
| Inrush Current      |                                        |         | 100     | A     | 230 VAC, cold start at 25 °C |
| No Load Input Power |                                        |         | 75      | mW    |                              |
| Input Protection    | Internal fuse in both line and neutral |         |         |       |                              |

### Output

| Characteristic           | Minimum | Typical | Maximum | Units       | Notes & Conditions                                                                              |
|--------------------------|---------|---------|---------|-------------|-------------------------------------------------------------------------------------------------|
| Output Voltage           | 9       |         | 48      | V           | See Models and Ratings table                                                                    |
| Minimum Load             | 0       |         |         | A           | No minimum load required                                                                        |
| Start Up Delay           |         |         | 4       | s           |                                                                                                 |
| Start Up Rise Time       |         | 30      | 55      | 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           |         |         | 200     | mV pk-pk    | Measured with 20 MHz bandwidth and 10 µF electrolytic in parallel with 0.1 µF ceramic capacitor |
| Overload Protection      | 130     |         | 160     | %           |                                                                                                 |
| 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                                                                                  |
| Isolation                 | Input to Output | 4000       |         | VAC    | Input to Output, 2 x MOPP                                                                 |
|                           | Input to GND    | 1500       |         |        | Class I Version Only                                                                      |
|                           | Output to GND   | 1500       |         |        | Class I Version Only                                                                      |
| Leakage Current           |                 |            | 100     | µA     | 264 VAC, 60 Hz                                                                            |
| Switching Frequency       | 24              |            | 70      | kHz    | Variable                                                                                  |
| Mean Time Between Failure | 250             |            |         | kHrs   | MIL-HDBK-217F at 25 °C GB                                                                 |
| Weight                    |                 | 0.75 (340) |         | 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. Agency approval to 40 °C max. |
| Storage Temperature   | -25     |         | +70     | °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    |                    |
| Voltage Flicker | EN61000-3-3 |            |                    |

## EMC: Immunity

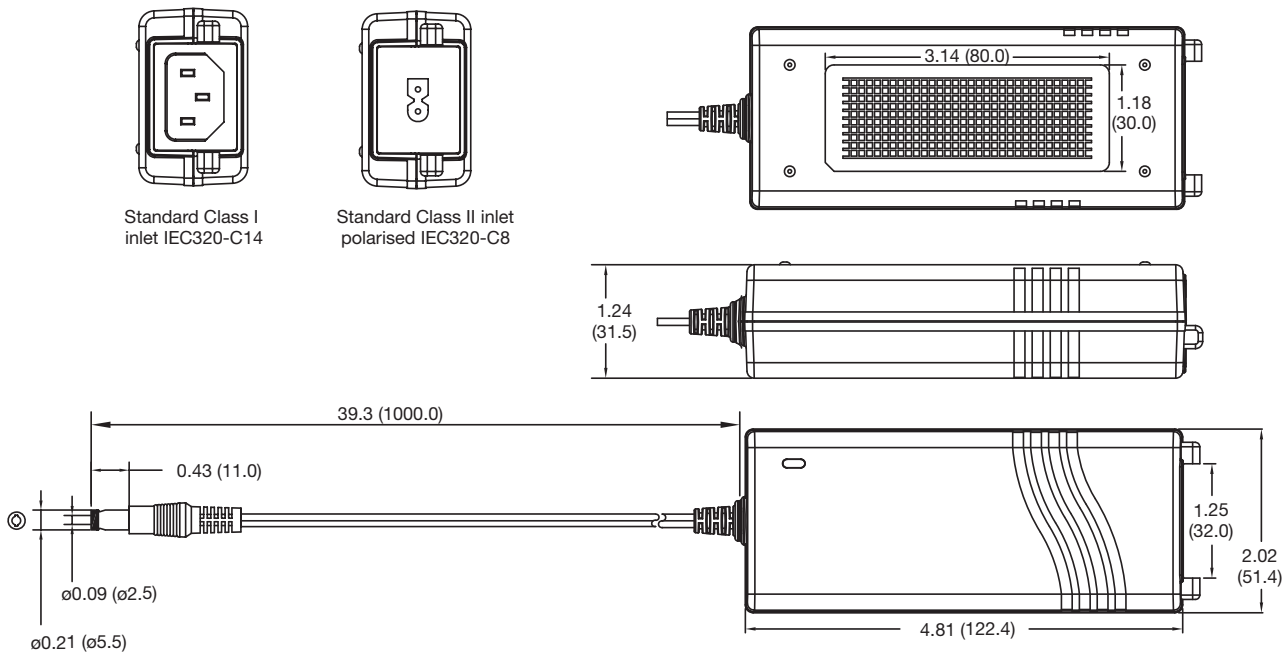
| Phenomenon             | Standard     | Test Level                | Criteria | Notes & Conditions |
|------------------------|--------------|---------------------------|----------|--------------------|
| Medical Device EMC     | IEC60601-1-2 | Ed.4.0 : 2014             | as below |                    |
| 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        |                    |
| 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 | Int: 100% 10 ms           | A        |                    |
|                        |              | Dip: 30% 500 ms           | A        |                    |
|                        |              | Int: 100% 5000 ms         | B        |                    |
|                        | EN60601-1-2  | Dip: 30% 25 AC Cycles     | A        |                    |
|                        |              | Int: 100% 0.5 AC Cycle    | A        | At 8 angles        |
|                        |              | Int: 100% 1 AC Cycle      | B        |                    |
|                        |              | Int.: >95% 5000 ms        | B        |                    |

## Safety Approvals

| Safety Agency | Safety Standard                           | Notes & Conditions     |
|---------------|-------------------------------------------|------------------------|
| UL            | UL 62368-1 & CAN/CSA C22.2 No. 62368-1-14 | Information Technology |
| TUV           | EN62368-1:2014/A11:2017                   |                        |
| CB            | IEC60950-1:2005 Ed 2 / IEC62368-1:2014    |                        |
| CE            | LVD                                       |                        |
| AU/NZ         | AU/NZ 60950.1                             |                        |
| CCC           | GB17625.1, GB4943.1, GB/T9254             |                        |
| UL            | ANSI/AAMI ES 60601-1                      | Medical, 2 x MOPP      |
| CSA           | CSA C22.2 No. 60601                       |                        |
| TUV           | EN60601-1                                 |                        |
| CB            | IEC60601-1                                |                        |

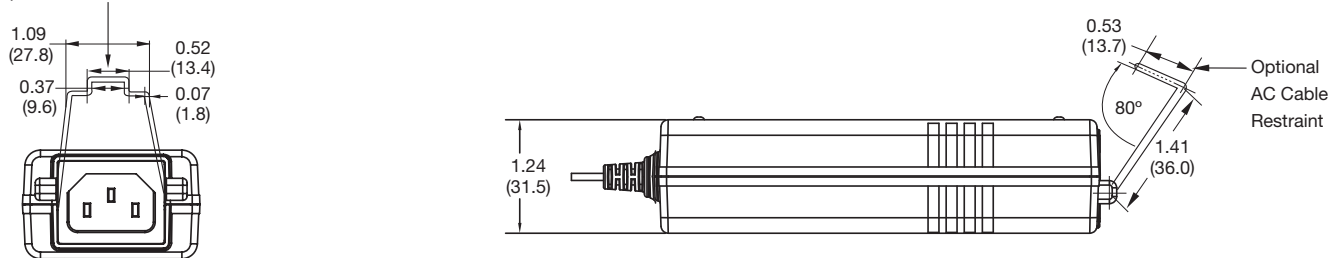
### Mechanical Details

#### AKM45USXX



#### AKM45USXX with Optional AC Cable Restraint

##### Optional AC Cable Restraint



### Notes

For optional AC cable restraint, order additional part AFM45-65 AC Clip.  
 For correct restraint, AC mains lead must be Interpower Corporation, part number 70006020300.  
 AC cable restraint is not suitable for use on Class II version.  
 Output plug:  $\varnothing 5.5 \times \varnothing 2.5 \times 11.0$ mm, centre positive

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)