

# 54W AC-DC Medical-grade Desktop Power Adapter ADA540K180S001B



## 1 Features

- Wide input voltage: the input working voltage range is 100-240VAC.
- Low power consumption: No-load <0.2W.
- High energy efficiency: Six levels of energy consumption, power efficiency up to 89%.
- High reliability: Compliant with EN60601-1, IEC CLASS II and 2×MOPP insulation protection level, CE.
- Flame retardant insulation: UL94V-0 flame retardant heat resistant material.
- Full protections: Short Circuit/ Over Voltage/ Over Current/ Self-recovery.

## 2 Applications

- Blood glucose meter
- Blood oxygen meter
- COVID-19 PCR test machine
- Household beauty device
- Physiotherapy equipment

## 3 Description

ADA540K180S001B is a desktop power adapter with a single output. With 100 -240 VAC universal input voltage, it can continuously output any DC voltage of 18VDC, 1M output cable length. Widely used in portable medical equipment .

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## 4 Naming Convention

ADA540K180S001B: Output Voltage 18V, Output Power 54W, medical desktop power adapter AC / DC

|     |                           |                                                                                                |
|-----|---------------------------|------------------------------------------------------------------------------------------------|
| □□  | Product Code              | AD=Isolated AC/DC; DD=Isolated DC/DC                                                           |
| □   | Packaging Form            | A=adapter; M=resin filled power module; P=PCB module                                           |
| XXX | Power Coding              | First two digits multiplied by 10 to the power of the third digit                              |
| □   | Application Level         | C=commercial grade    T=industrial grade    K=medical grade    S=harsh environment application |
| XXX | Output Voltage            | *10 <sup>-1</sup> V                                                                            |
| □   | Custom Tag                | S=standard product    Z=customized product                                                     |
| XXX | Product ID                | 001-999, used to identify different products of the same category                              |
| □   | Major Upgrade Information | A-Z, fixed as A for the first mass production                                                  |

## 5 Specification

### 5.1 Input Parameter

|                        |                               |
|------------------------|-------------------------------|
| Voltage Range          | 100~240 VAC                   |
| Frequency Range        | 50~60Hz                       |
| Input Current (Max.)   | 1.0A @ 115VAC, 0.45A @ 230VAC |
| Efficiency (Typ.)      | 89%                           |
| Standby Consumption    | 0.2W                          |
| Impulse Current (Typ.) | 6.6A @ 115VAC, 5A @ 230VAC    |
| Leakage Current (Typ.) | 100uA RMS @ 264VAC/60Hz       |

## 5.2 Output Parameter

|                     |                                   |
|---------------------|-----------------------------------|
| Output Voltage      | 18VDC                             |
| Voltage Tolerance   | ±5%                               |
| Output Current      | 3000mA                            |
| Rated Power (Max.)  | 54W                               |
| Line Regulation     | ±1% at full load                  |
| Load Regulation     | ±3%                               |
| Ripple & Noise      | 120mV (Typ.), 150mV (Max.)@20MHz  |
| Frequency (Typ.)    | 65kHz                             |
| Hold Up Time (Typ.) | 0.65mS @ 115VAC<br>0.7mS @ 230VAC |

## 5.3 Environment

|                       |                                                                    |
|-----------------------|--------------------------------------------------------------------|
| Operating Temperature | -10 ~ +40℃                                                         |
| Storage Temperature   | -20 ~ +85℃                                                         |
| Storage Humidity      | 10% ~ 95%RH                                                        |
| Soldering Temperature | 260±5℃ @ Wave Soldering, 5~10s<br>360±10℃ @ Manual Soldering, 3-5s |

## 5.4 Protection Function

|                           |                                         |
|---------------------------|-----------------------------------------|
| Short Circuit             | Long term short circuit, auto recovery. |
| Over Current              | ≥130%IO auto recovery                   |
| Over Voltage              | ≤18.9VDC @ 18V output                   |
| IEC Safety Class          | CLASSII                                 |
| Electric Shock Protection | 2×MOPP @ primary to secondary           |

## 5.5 Reliability

|      |                |
|------|----------------|
| MTBF | ≥30,000H @ 25℃ |
|------|----------------|

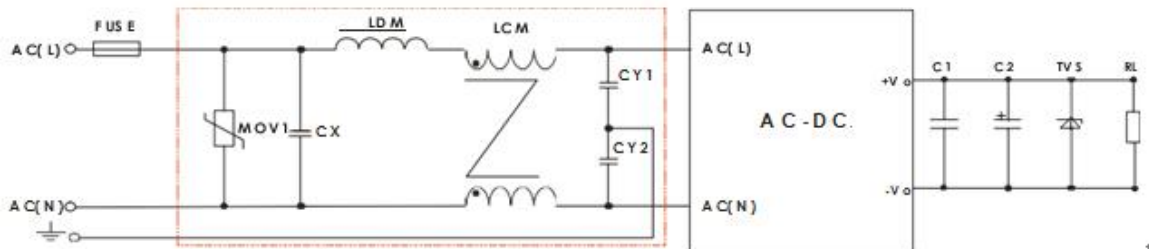
## 5.6 Safety Standards / Directives

|                          |                 |                                                                      |
|--------------------------|-----------------|----------------------------------------------------------------------|
| Medical Safety           |                 | EN60601-1                                                            |
| CE                       |                 | Compliant                                                            |
| Isolation Voltage (Typ.) | Input to Output | 4000VAC @ 1 minute test and the leakage current is smaller than 5mA. |

## 5.7 EMC

| Parameter                       | Standard                           | Test Level / Note         |
|---------------------------------|------------------------------------|---------------------------|
| Conducted Emission              | CISPR 11:2015+A1:2016+A2:2019      | CLASS B                   |
| Radiated Emission               | CISPR 11:2015+A1:2016+A2:2019      | CLASS B                   |
| Electrostatic Discharge         | IEC 61000-4-2:2008                 | ±8KV/Contact<br>±15KV/Air |
| Radiate Susceptibility          | IEC 61000-4-3:2006+A1:2007+A2:2010 | 10V/m                     |
| Electrical Fast Transient Burst | IEC 61000-4-4:2012                 | ±2 KV                     |
| Surge                           | IEC 61000-4-5:2014+A1:2017         | ±1KV (line to line)       |
| Conducted Susceptibility        | IEC 61000-4-6:2013                 | 10Vr.m.s                  |
| Voltage Dips and Interruption   | IEC 61000-4-11:2004+A1:2017        | 0%, 70%                   |

## 6 Typical Application Circuit



Note: EMC has higher requirements without any additional circuit.

## 7 Mechanical Specification

|                               |                                                            |
|-------------------------------|------------------------------------------------------------|
| Dimension                     | 126.00*50.00*30.30(H)mm                                    |
| Enclosure Material            | Black flame retardant and heat resistant plastics(UL94V-0) |
| Cooling Mode                  | Natural air cooling                                        |
| Power and Cable Specification | ul2464×20Awg*1m,5.5*2.5*straight head+magnetic ring+SR     |



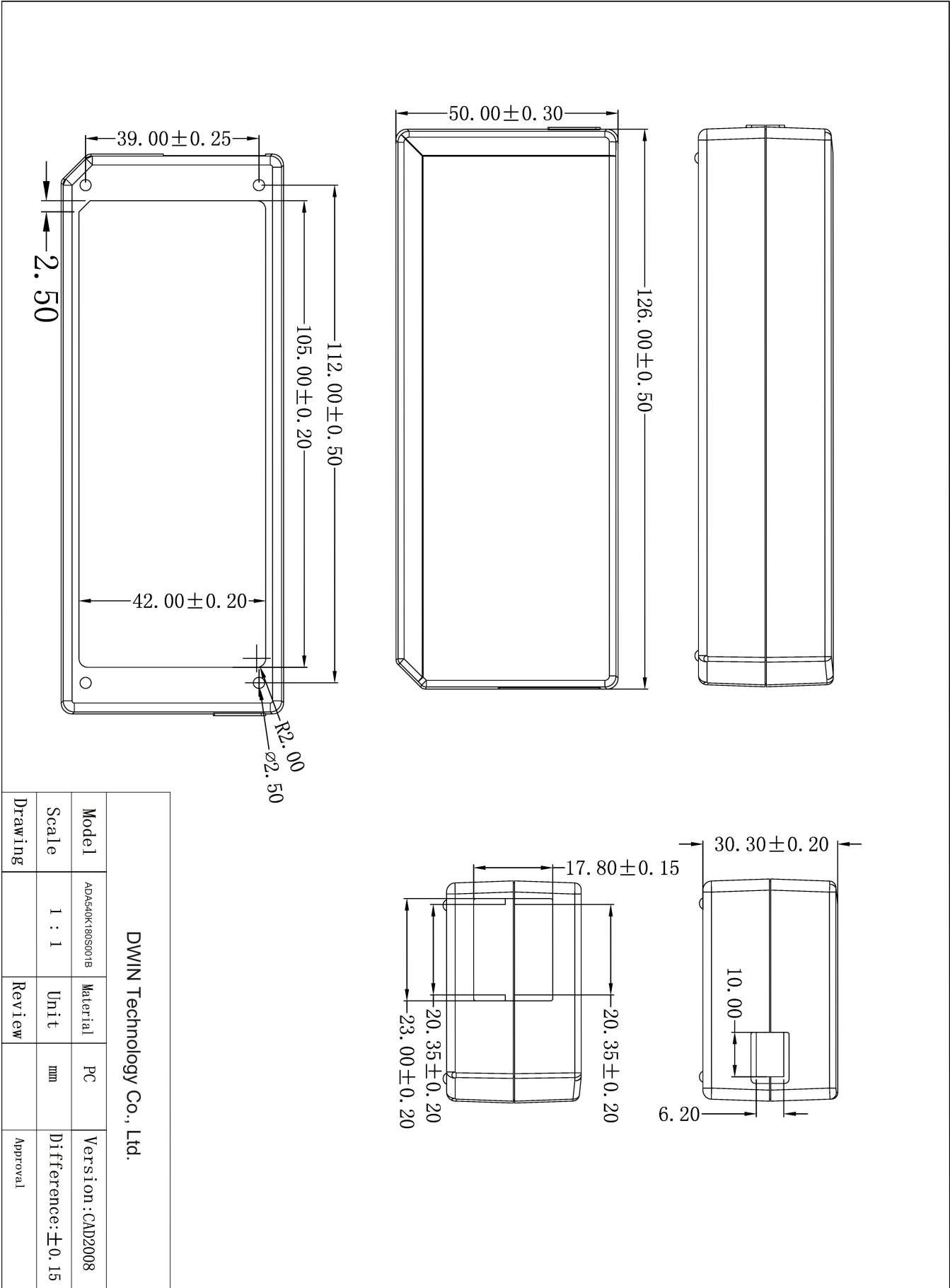
Model No.

Input Voltage(V) / Frequency / Current(mA)

Output Voltage(V) / Current(mA) / Max Power

EU Certification: CE

Six Levels of Energy Efficiency



## 8 Precautions for Use

Avoid using the equipment close to or stacked with other equipment, which may lead to improper operation. If it must be used close to or stacked, pay attention to observe and verify the equipment and other equipment to ensure normal operation.

The use of other accessories, sensors and cables provided by the equipment manufacturer may increase the electromagnetic radiation or reduce the immunity.

The distance between the portable radio frequency communication equipment and the equipment should not be greater than 30cm, otherwise the performance of the equipment may be reduced.

## 9 Revision History

| Version | Date       | Description   | Author |
|---------|------------|---------------|--------|
| 00      | 2024-08-19 | First edition | YML    |

Disclaimer: The product design is subject to alternation and improvement without prior notice.

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