

Technical Data Sheet - preliminary

CAR100M Car/Truck / Air Power Adapter



100 Watt medical grade automobile power adapter

Features:

- Wide input voltage range
- Max. output power 110 Watt
- Galvanic isolation for maximum patient safety
- For use in cars, trucks and aircrafts with a suitable input connector
- Wall-mount kit optional

Applications:

- Suitable for use with all mobile medical devices (e.g. respirator, defibrillator, suction pump, etc.)



Specification

Input	
Voltage range	10 - 32VDC
Standby current	typical 37mA @ 10V input typical 29mA @ 32V input
Input fuse	13A
Protection	Reverse polarity Over voltage protection (Transient suppression circuit)

Output	
Voltage range	16 - 24V nominal
Power	100W cont. 110W max.
Initial set tolerance	±3% max.
Load regulation ⁽¹⁾	-4% max.
Line regulation	±1% max.
Ripple & noise ⁽²⁾	< 120mV _{pk-pk}
Current limit	Constant current
Protection	Short circuit Over temperature protection Over voltage protection

Environmental	
Cooling	convection cooled
Temperature	Operating: -20°C to 40°C 40°C to 50°C, derating 35% Non-operating -40°C to 75°C
Pressure & altitude	Operating: 1200hPa to 570hPa max. 4600m above sea level Non-operating: 1200hPa to 115hPa max. 15000m above sea level
Humidity	5 to 95% r.H., non-condensing

General	
Galvanic isolation	Isolation voltage 2kV
Input connector	Cigarette lighter adapter
Output connector	Customer-specific
Efficiency ⁽³⁾	typical 88% at 100% load
MTBF	> 100000h @ 25°C ambient temperature and G _B per MIL-HDBK217F
Green procurement	WEEE RoHS
Indicator	Single green LED
Ingress protection rating	IEC60529, IP42

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Safety & EMC		
Regulatory approvals	Europe	CE
	International	CB Report IEC 60601-1 2 nd edition CB Report IEC 60601-1 3 rd edition
Electromagnetic emissions	USA/Canada	UL60601-1
	Europe	EN 55011/55022 class B
	USA	FCC15 class B
	Medical electrical equipment Airborne equipment	IEC60601-1-2 RTCA/DO-160F, Section 21
Electromagnetic immunity	ESD immunity	IEC61000-4-2, 8kV contact/15kV air
	Electromagnetic field immunity	IEC61000-4-3, 80-2700MHz, 30V/m, modulation 80%/200Hz
	Electrical fast transient/burst immunity test	IEC61000-4-4, +/-2kV, 5/50ns
	Surge immunity test	IEC61000-4-5, +/-0.5kVsym, 1.2/50(8/20) μ s
	Conducted Immunity Airborne equipment	IEC61000-4-6, 0.15-80MHz, 10V, 80%, 1KHz, AM, with CDN RTCA/DO-160F Sections 16.6-17-18-19.3.1-20-25
	ISO-Impulses	ISO7637-2, pulse 1 till 5, immunity test level III
	Medical electrical equipment UNECE vehicle regulation	IEC60601-1-2 E13 ECE Reg. 10

- other approvals on request

Mechanical Details	
Housing dimensions (LxWxH)	165 x 64 x 38mm, without cables and connectors
Input cable length	240cm \pm 5%
Output cable length	100cm \pm 5%
Weight	approx. 420g, without cables, connectors and wall-mount kit

Notes

1. Load regulation is measured at the output connector and includes the voltage drop across the output cable.
2. Measured with a 0.1 μ F ceramic and a 10 μ F electrolytic capacitors across the output terminals. The oscilloscope bandwidth is set at 20MHz a co-axial cable will be used to measure it. The test condition is maximum load.
3. Power losses of input and output cables are not considered here.

Germany/Headquarters	France	USA	Hong Kong/China
RRC power solutions GmbH Technologiepark 1 D-66424 Homburg / Saar	RRC power solutions SAS 69, rue Louise Michel F-92300 Levallois-Perret	RRC power solutions Inc. 18340 Yorba Linda Blvd., Suite 107-437 Yorba Linda, CA 92886-4104	RRC power solutions Ltd. 9/F Park Tower, 15 Austin Road Tsim Sha Tsui, Kowloon, Hong Kong
Tel.: +49 6841 98090 Fax: +49 6841 9809280 Email: sales@rrc-ps.de Web: www.rrc-ps.de	Tel.: +33 13005 6100 Fax: +33 13005 6101 Email: france@rrc-ps.com Web: www.rrc-ps.com	Tel.: +1 714 777 3604 Fax: +1 714 777 3658 Email: usa@rrc-ps.com Web: www.rrc-ps.com	Tel.: +852 2376 0106 Fax: +852 2376 0107 Email: hkrrc@rrc-ps.cn Web: www.rrc-ps.com