

C.M. TECHNOLOGY

Designed and Manufactured in Australia

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PRODUCT SHORTFORM

Rev. A2

Tel: +61 (2) 9764 5655

Railway 19" Rackmount AC-DC Converter



NRS Series

The NRS Series is a 1RU high rated AC-DC Converter.

Available in Multiple DC Output configurations.

Current Rating upon Request.

- Front Terminal Connections
- Front access input fuse
- High Efficiency with built-in active PFC functionality (>0.95)
- Withstands 300VAC surge input for 5 seconds
- Universal Full-Range AC Input
- Short Circuit/Overload/Overvoltage/Over temperature protection
- Built-in constant current limiting circuit



EN50155

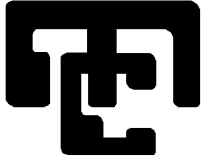


Available Configurations

NRS 12	12V
NRS 24	24V
NRS 36	36V
NRS 48	48V
NRS 74	74V
NRS 96	96V
NRS 110	110V

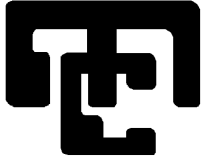
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Specifications for NRS 36 type:

Output DC Voltage	36V
Output Rated Current	5.7A
Current Range	0-5.7A
Rated Power	205.2W
Ripple & Noise (Maximum)	250mV _{peak-to-peak}
Voltage Tolerance	±1.0%
Line Regulation	±0.2%
Load Regulation	±0.5%
Setup, Rise Time	1000ms, 50ms
Hold up Time (Typical)	16ms at full load
Input Voltage Range	85-264V AC
Frequency Range	47-63 Hz
Efficiency (Typical)	89%
Power Factor (Typical)	PF>0.95 at full load
AC Current (Typical)	1.1A
Inrush Current (Typical)	70A/240V AC
Leakage Current	<1.2 mA
Overload Protection	105-135% rated output power
Overvoltage Protection	41.4– 48.6V
EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN55024, Heavy industrial, Criteria A
EMC Emission	EN55022 (CISPR22) Class B, EN61000-3-2,-3
Isolation Resistance	Input-Output, Input-Ground, Output-Ground: 100 MΩ/500V DC/25°C/70%Room Humidity
Withstand Voltage	Input-Output: 3KV DC, Input-Ground: 1.5KV DC, Output-Ground: 0.5KV DC
Safety Standards	IEC60950-1, EN50155 (IEC60571)
MTBF	189.1Khrs min. MIL-HDBK-217F (25°C)
Vibration	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axis
Working Temperature	-40°C ~ +70°C
Working Humidity	20% ~ 90% Room Humidity Non-condensing
Storage Temperature & Humidity	-40°C ~ +85°C, 10% ~ 95% Room Humidity


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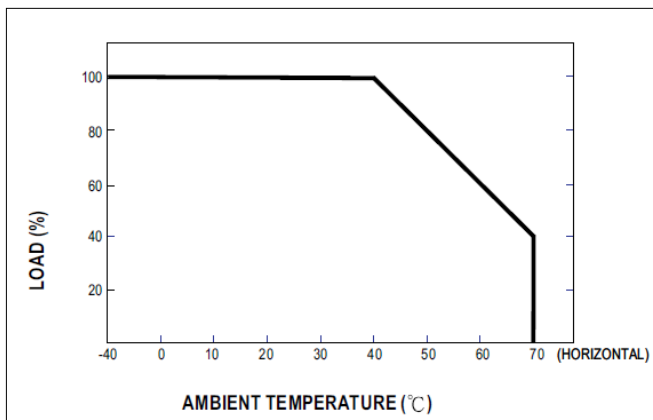
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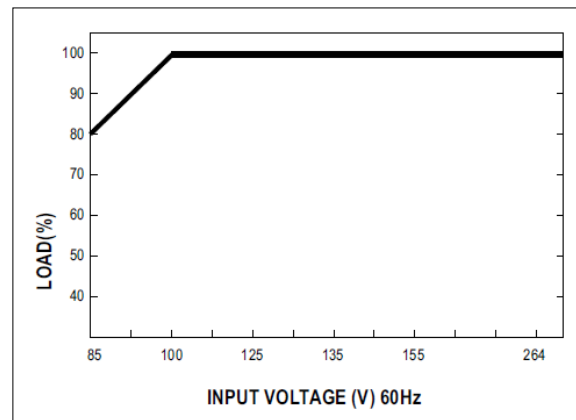
Overview:

The NRS Series has been designed to suit the unique requirements of AC-DC converters used in railway applications.

By utilising our years of technical knowledge and real-world applications gained from the proven PSTR series, the NRS Series has been designed for locomotives and heavy/light metro with AC supplies ranging from 85 to 264 volts, without any voltage selection being needed.



Derating Curve



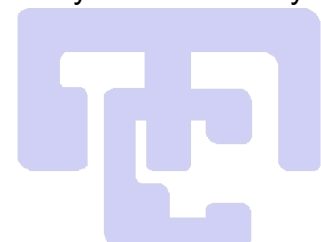
Output Derating vs Input Voltage

The NRS Series is an example of a generic approach to locomotive power system design. Essentially the same circuit configuration is used for all switchmode locomotive supplies made by C.M. Technology. This approach minimises the circuit simulation required for a new design.

Manufactured using switchmode electronics, the NRS Series is designed for a high energy efficiency of >88%. This relatively high efficiency allows convection cooling with a maximum 70°C ambient working temperature. Our high quality components are housed in a 19" 1RU high case, a standardised frame form factor allowing for easy mounting of equipment modules.

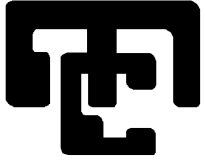
The finished AC-DC converters are all burnt in at full load to provoke any infant mortality failures, with some products held on long term burn-in.

The NRS Series is compliant with the Australian C-Tick Standard.



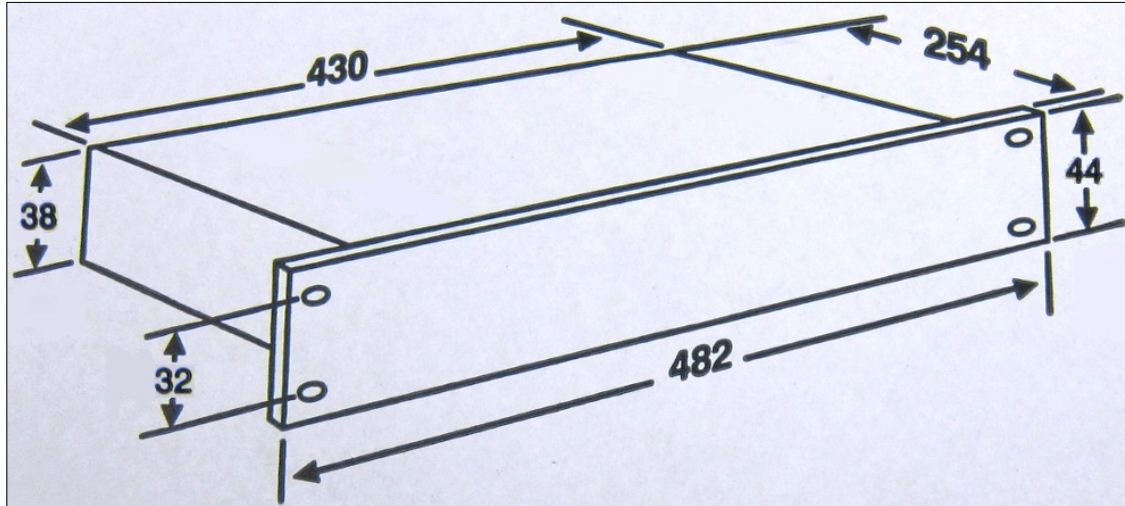
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Dimensions:**Case Details:**

- 19" 1 RU Case
- Solid steel Construction
- Aluminium Front and Rear Panels

