

C.M. TECHNOLOGY

Designed and Manufactured in Australia

www.cmtechnology.com.au

PRODUCT SHORTFORM

Rev. A4

Tel: +61 (2) 9764 5655

Railway DC-DC Converter

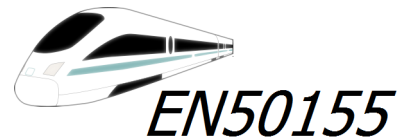


RailGroup B110 Series

The RailGroup B110 Series is a compact DC-DC Converter.

Available in 12V & 24V DC Output configurations.

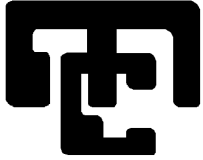
- Panel Mount MIL-C rated connector
- Input Panel Mount 10A HRC Fuse
- Long life electrolytic capacitors
- 100% full load burn in tested
- Built-in constant current limiting circuit
- Overload/Overvoltage/Overtemperature protection



Available Configurations	
B110 12	12V, 8.4 A, Single
B110 12/2	12V, 8.4 A (x2), Dual
B110 24	24V, 4.2 A, Single
B110 24/2	24V, 4.2 A (x2), Dual
B110 24 & 12	12V, 8.4A + 24V, 8.4 A

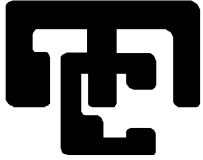
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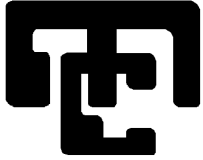


Specifications for RailGroup B110 12V type:

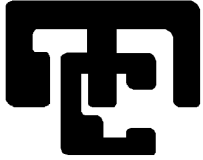
Output DC Voltage	12V
Output Rated Current	8.4A
Current Range	0-8.4A
Rated Power	100.8W
Ripple & Noise (Maximum)	120mVpeak-to-peak
Voltage Tolerance	±2.0%
Line Regulation	±0.2%
Load Regulation	±1.0%
Setup, Rise Time	800ms
Hold up Time (Typical)	3-30ms at full load
Input Voltage Range (Continuous)	67.2-143V DC
Input Voltage Range (1 second)	57.6-154V DC
Efficiency (Typical)	91%
Input DC Current (Typical)	1.2A/110V
Inrush Current (Typical)	30A/110V DC
Overload Protection	105-135% rated output power
Overvoltage Protection	13.8 - 16.2V
EMS Immunity	EN61000-4-2,3,4,6,8,11, ENV50204, EN 50155 (EN50121-3-2) Light industrial, Criteria A
EMS Emission	EN55022 (CISPR22) Conduction Emission Class A, Radiation Emission Class B, EN50155 (EN50121-3-2)
Isolation Resistance	Input-Output, Input-Ground, Output-Ground: 100 MΩ/500V DC/25°C/70%RH
Withstand Voltage	Input-Output: 4KV DC, Input-Ground: 2.5KV DC, Output-Ground: 2.5KV DC
Safety Standards	IEC60950-1, EN50155 (IEC60571)
MTBF	254.1Khrs min. MIL-HDBK-217F (25°C)
Vibration	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axis
Working Temperature	-40°C ~ +55°C (No derating)
Working Humidity	20% ~ 95% Room Humidity Non-condensing
Storage Temperature & Humidity	-40°C ~ +85°C, 10% ~ 95% Room Humidity


Specifications for RailGroup B110 24V type:

Output DC Voltage	24V
Output Rated Current	4.2A
Current Range	0-4.2A
Rated Power	100.8W
Ripple & Noise (Maximum)	150mVpeak-to-peak
Voltage Tolerance	±2.0%
Line Regulation	±0.2%
Load Regulation	±1.0%
Setup, Rise Time	800ms
Hold up Time (Typical)	3-30ms at full load
Input Voltage Range (Continuous)	67.2-143V DC
Input Voltage Range (1 second)	57.6-154V DC
Efficiency (Typical)	90%
Input DC Current (Typical)	1.2A/110V
Inrush Current (Typical)	30A/110V DC
Overload Protection	105-135% rated output power
Overvoltage Protection	27.6 - 32.4V
EMS Immunity	EN61000-4-2,3,4,6,8,11, ENV50204, EN 50155 (EN50121-3-2) Light industrial, Criteria A
EMS Emission	EN55022 (CISPR22) Conduction Emission Class A, Radiation Emission Class B, EN50155 (EN50121-3-2)
Isolation Resistance	Input-Output, Input-Ground, Output-Ground: 100 MΩ/500V DC/25°C/70%RH
Withstand Voltage	Input-Output: 4KV DC, Input-Ground: 2.5KV DC, Output-Ground: 2.5KV DC
Safety Standards	IEC60950-1, EN50155 (IEC60571)
MTBF	254.1Khrs min. MIL-HDBK-217F (25°C)
Vibration	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axis
Working Temperature	-40°C ~ +55°C (No derating)
Working Humidity	20% ~ 95% Room Humidity Non-condensing
Storage Temperature & Humidity	-40°C ~ +85°C, 10% ~ 95% Room Humidity

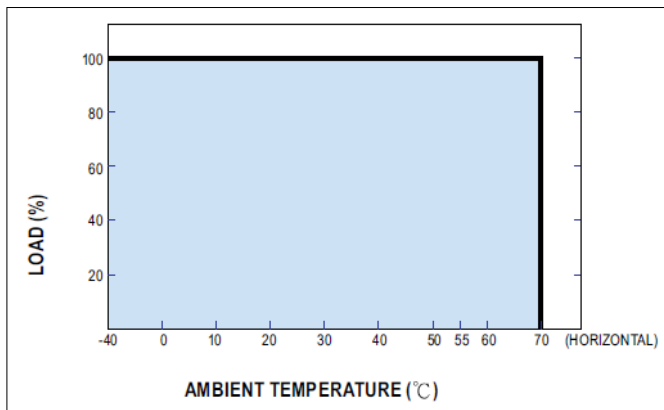

Specifications for RailGroup B110 24V (Double) type:

Output DC Voltage	24V
Output Rated Current	8.4A
Current Range	0-8.4A
Rated Power	201.6W
Ripple & Noise (Maximum)	120mVpeak-to-peak
Voltage Tolerance	±2.0%
Line Regulation	±0.2%
Load Regulation	±1.0%
Setup, Rise Time	800ms
Hold up Time (Typical)	3-30ms at full load
Input Voltage Range (Continuous)	67.2-143V DC
Input Voltage Range (1 second)	57.6-154V DC
Efficiency (Typical)	91%
Input DC Current (Typical)	1.2A/110V
Inrush Current (Typical)	30A/110V DC
Overload Protection	105-135% rated output power
Overvoltage Protection	27.6 - 32.4V
EMS Immunity	EN61000-4-2,3,4,6,8,11, ENV50204, EN 50155 (EN50121-3-2) Light industrial, Criteria A
EMS Emission	EN55022 (CISPR22) Conduction Emission Class A, Radiation Emission Class B, EN50155 (EN50121-3-2)
Isolation Resistance	Input-Output, Input-Ground, Output-Ground: 100 MΩ/500V DC/25°C/70%RH
Withstand Voltage	Input-Output: 4KV DC, Input-Ground: 2.5KV DC, Output-Ground: 2.5KV DC
Safety Standards	IEC60950-1, EN50155 (IEC60571)
MTBF	254.1Khrs min. MIL-HDBK-217F (25°C)
Vibration	10 ~ 500Hz, 5G 10min./1cycle, 60min. each along X, Y, Z axis
Working Temperature	-40°C ~ +55°C (No derating)
Working Humidity	20% ~ 95% Room Humidity Non-condensing
Storage Temperature & Humidity	-40°C ~ +85°C, 10% ~ 95% Room Humidity

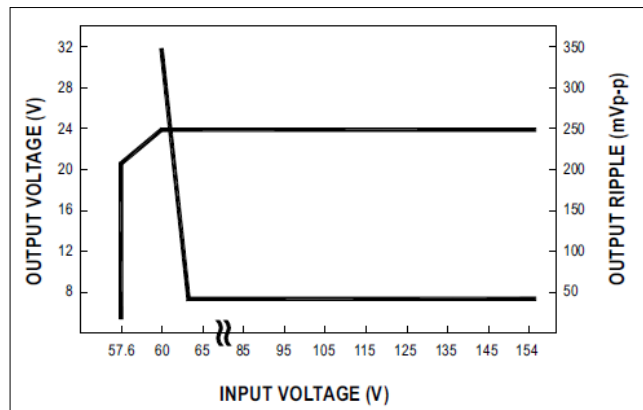

Overview:

The RailGroup B110 Series has been designed by C.M. Technology to suit the unique requirements of DC-DC converters used in railway applications.

By utilising our years of technical knowledge and real-world applications gained from the proven PSTR series, the RailGroup B110 Series has been designed for locomotives with DC supplies ranging from 68 to 143 volts.



Derating Curve



Static Characteristics (24V)

The RailGroup B110 Series is an example of a generic approach to Railway power system design. .

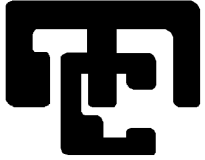
The PCB layouts are held in a library database that can be merged relatively quickly to produce a new design and a quick time to market, with a large number of components held in common across the product line. Contact us to discuss your specific Current & Voltage requirements.

Manufactured using switchmode electronics, the RailGroup B110 series is designed for a high energy efficiency of >90%. This relatively high efficiency allows convection cooling with a maximum 70°C ambient working temperature. Our high quality components are housed in a brushed stainless steel and extruded construction specifically designed for railway applications.

The finished DC-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 RailGroup B110 Series is compliant with the Australian C-Tick Standard.



**Dimensions:**