

# BAP319R SERIES

Rail DC/DC Converters Single Output: 500 Watts



## Features

- Designed to rail standards EN50155 & EN50121
- Wide input range
- Rugged design for on-board train applications
- Convection cooled: No fans
- Fully isolated input – output 3000VDC
- Over voltage protection
- Overload and short circuit protection
- MTBF > 200,000hrs
- Specials input / output combinations on request.
- Any output from 12vdc ~ 130vdc possible
- **N+1 Redundancy** option

## General Specifications

<b>Input Voltage</b>	<b>24VDC</b> ( 17 ~ 34 ) <b>36VDC</b> ( 22 ~ 51 ) <b>48VDC</b> ( 29 ~ 67 ) <b>72VDC</b> ( 42 ~ 101 ) <b>96VDC</b> ( 58~135 ) <b>110VDC</b> ( 66 ~ 154 )
	• Other voltages on request
<b>Input Protection</b>	Reverse polarity protection. Inrush current limiting & Input Fuse
<b>Isolation</b>	Input - Output 3000vdc Input – Chassis 1500vdc Output – Chassis 1500vdc
<b>Efficiency</b>	Model dependent , typically 80-90%
<b>Output voltage</b>	See tables
<b>Output Power</b>	500 watts
<b>Voltage Adjust.</b>	Customer specified
<b>Immunity</b>	EN50155 & EN50121-3-2 EN61000-4-2 ESD EN61000-4-3 RF Immunity EN61000-4-4 Fast Transients EN50155 Surge & Voltage variations EN61000-4-6 Conducted Immunity
<b>EMI</b>	EN5022 Class B Conducted & Radiated
<b>Switching Freq.</b>	55kHz ±5kHz
<b>Regulation</b>	±% Line / Load combined
<b>Dynamic Response</b>	Max ±5% deviation for 10% - 50% load step with 1msec recovery
<b>Ripple &amp; Noise</b>	Typically 1% pk-pk or 0.2% RMS of output voltage ( 20MHZ BW )
<b>Overload Protection</b>	Rectanular current limiting, with short-circuit protection
<b>Overvoltage Protection</b>	Double regularor loop
<b>Operating Temp.</b>	-25°C to +55°C cold plate temperature at 100% load, +70°C at 60% load
<b>Cooling</b>	Conduction cooling via base plate to customer chassis or heatsink & natural convection
<b>Environmental Protection</b>	Ruggedized & Conformal coating of PCB's
<b>Shock &amp; Vibration</b>	IEC61373 Cat 1 A & B and Cat 2
<b>Humidity</b>	5-95% non-condensing, higher ration option
<b>MTBF</b>	>150,000 hrs

## Description

The **BAP319R** series dc/dc converters are an upgraded product from the very popular and mature BAP industrial grade product, with, field proven reliability over 20 years. These units are specifically designed for rolling stock / rail applications and can be manufactured to customer specifications with total flexibility to match customer requirements.

Units are supplied with conformal coating of PCB's and a high level of ruggedization for shock & vibration to IEC 61373

Designed for a wide range of i input voltage options from 24 ~ 168vdc and any output voltage from 24 ~ 130VDC

## Options

<b>Redundancy</b>	Units can be supplied with built-in isolation diode for use in <b>N+1 Redundancy</b> / parallel applications
<b>Alarm</b>	Voltage Free Relay contacts for monitoring DC output
<b>Output Voltage</b>	Any output voltage options from 12 ~ 130VDC
<b>Terminals</b>	Customer specified connectors

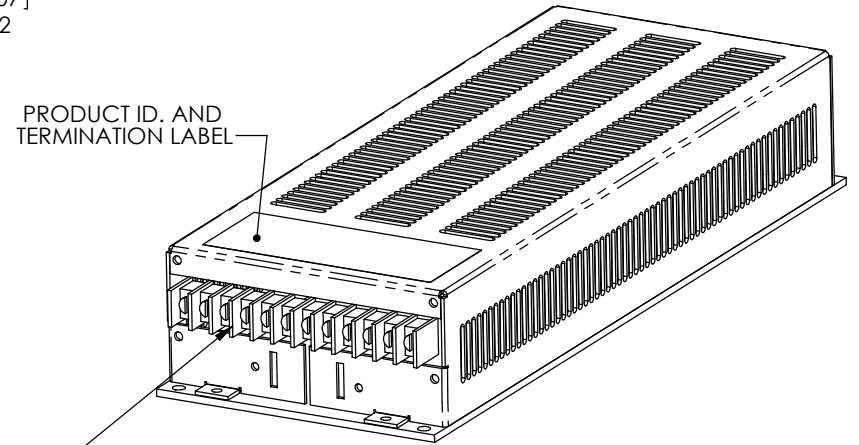
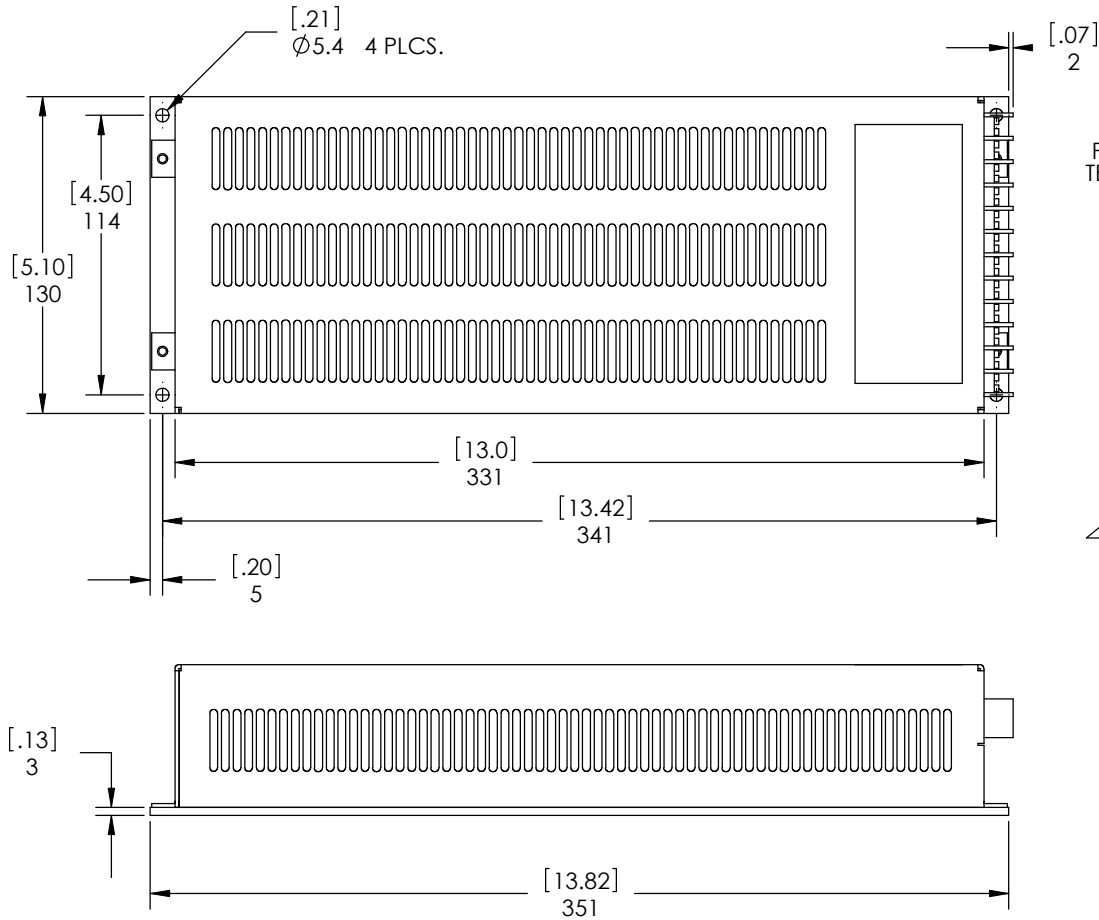
Model	Input Options V	Standard Outputs		Power W
		V	A	
BAP319R	24V, 36V 48V,72V 96V,110V	24V	20.0A	500W
		48V	10.0A	
		110V	4.5A	

- Final part numbers will be factory allocated to reflect customer input & output requirements. Any output 12 ~ 130vdc is available

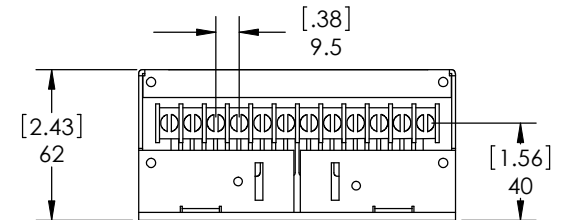
<b>LED / Indicator</b>	Visible through side cooling slots
<b>Alarm output</b>	Optional
<b>Connector</b>	12 pole barrier-type terminal block with 3/8"spacing. ( optional cover )
<b>Dimensions</b>	130 x 67 x 351mm ( F4 ) W x H x L ( includes terminal block & mounting flanges)
<b>Weight</b>	2kg

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12 POLE CURTIS 38000 SERIES BARRIER TYPE OF TERMINAL WITH 3/8" SPACING  
TORQUE: 9 in.-lbs



DIMENSIONS ARE IN MILLIMETERS  
[INCHES] TOLERANCES ON  
DECIMALS: XXX ± 0.2mm  
          XX ± 0.3mm  
ANGLES: ± 2°  
FRACTIONS: ± 0.4mm  
UNLESS OTHERWISE STATED

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Title: OUTLINE DRAWING

Model No: F4 PACKAGE

