Premium
Powering Your Challenge

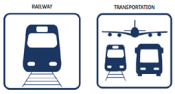
BDS-3200

3200W BATTERY CHARGER FOR RAILWAY ROLLING STOCK APPLICATION

GENERAL FEATURES

- Railway-certified (EN50155, EN50121-3-2, EN61373-1B, EN45545-2) for rolling-stock environments.
- 3.2 kW regulated output with temperature-controlled 27–30 V range.
  100 A continuous / 120 A peak for high-demand DC loads.
- –40°C to +55°C operation, with derating capability up to +70°C.
- High electrical isolation: 4000 VDC input–output, 2500 VDC input–PE, 750 VDC output–PE.
- Forced-air cooling ensuring stable performance under load.
- Comprehensive protection set: OCP, OVP shutdown, short-circuit and thermal shutdown (90°C).
- External PT100 input supporting temperature-dependent regulation.
- <8 kg lightweight design for straightforward cabinet integration.

APPLICATIONS

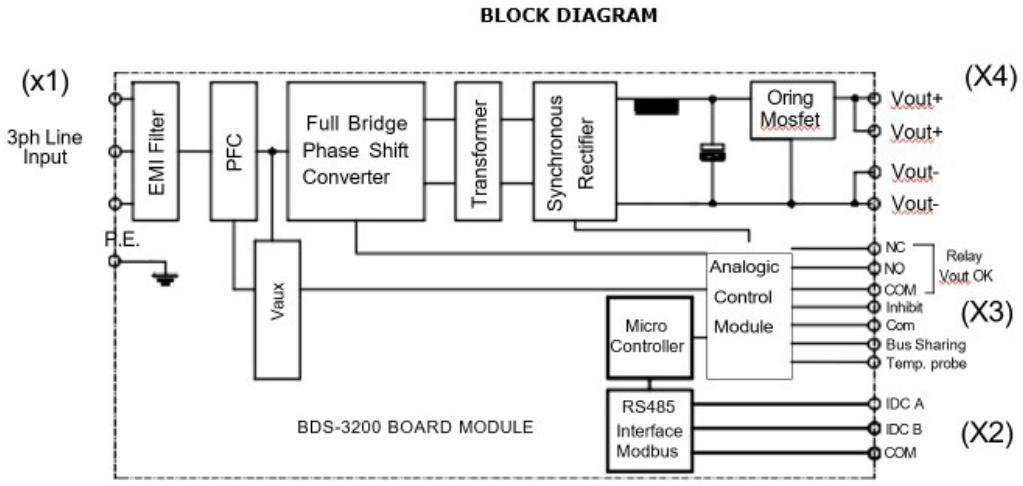


DESCRIPTION

The BDS-3200 is a 3.2 kW, 3-phase 400 Vac DC power module designed for railway environments, providing a temperature-regulated 27–30 V output and up to 100 A continuous (120 A short-term). Voltage and current are adjustable for precise system integration. It includes full protection—OCP, OVP shutdown, short-circuit and thermal shutdown—and operates from –40°C to +55°C with derating to +70°C. Status LEDs, relay signalling and an external PT100 input enable reliable supervision. Certified to EN50155, EN50121-3-2, EN61373-1B and EN45545-2, it offers robust isolation and straightforward cabinet integration.

Part Number	Input Voltage Range [VAC]	Output Voltage nom. [VDC]	Output Current max. (1) [A]	Efficiency typ. [%]	Output Power max. (1) [W]
BDS-3200-35001	360 - 440	27-30	118.52	94	3200

BLOCK DIAGRAM



BASIC CHARACTERISTICS

Parameter	Conditions	Min.	Typ.	Max.
Input	400 Vac 3ph 3Wires RST	360 V_{ac} 3ph	400V_{ac}	440 Vac 3ph
Output				3200 W
Vout	Temperature Regulated	27V		30V
Iout Nom			100A	
Iout	Short Term	100A		120A
Tolerance			±3%	
Ripple and Noise	0-20 MHz		250mV	
Vprog (Optional)	Vout Decreases Until -10%	0V		2.5V
	Vout Increase Up to +10%	2.5V		5V
Iprog (Optional)	With 1.5V		Decrease Until 80% Inom	
	With 1V		Decrease Until 60% Inom	
	With 0.5V		Decrease Until 40% Inom	
Output Power			3200W	
Power Factor	At Full Load		0.9%	
Efficiency	At Full Load		94%	

ENVIRONMENTAL

Parameter	Conditions	Value
Operating Temperature		-40°C to +55°C
Temperature Power Derating		>+55°C to +70°C: 2%°C
Storage Temperature		-40°C to 85°C
Cooling	Force Ventilation	

PROTECTIONS

Parameter	Value
Inrush Current Protection (Input)	YES
RFI Filter	YES
Fuses	3 x 16A / 500V_{ac}
Over-Current Protection (Output)	1.05-1.2 In
Overvoltage Protection to Switch Off (Output)	≥35V
Short Circuit Protection	YES
Overtemperature Protection	Tmax = 90°C

SAFETY AND CERTIFICATION

	Standard
Dielectric Withstand Voltage	Input – Output: 4000V_{dc}
	Input – PE: 2500V_{dc}
Cooling	Output – PE: 750V_{dc}

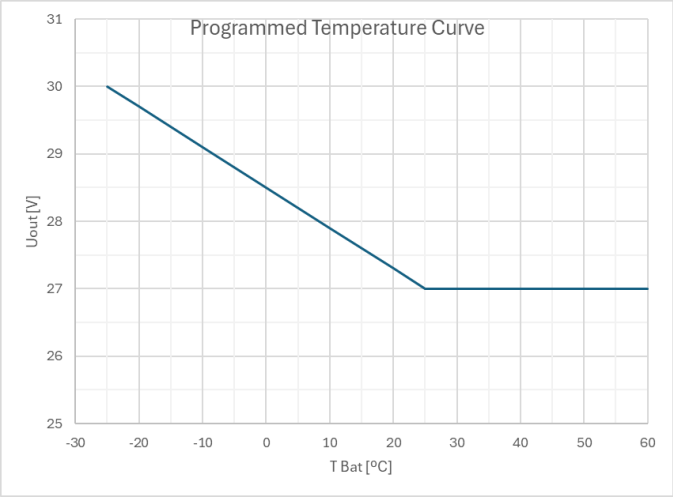
EMC

	Standard
Emission	EN 61000-6-4
Immunity	EN 61000-6-2
	EN 62368-1
	EN 50155
	EN 50121-3-2
	EN 61373-1B
	EN 45545-2

CONTROL

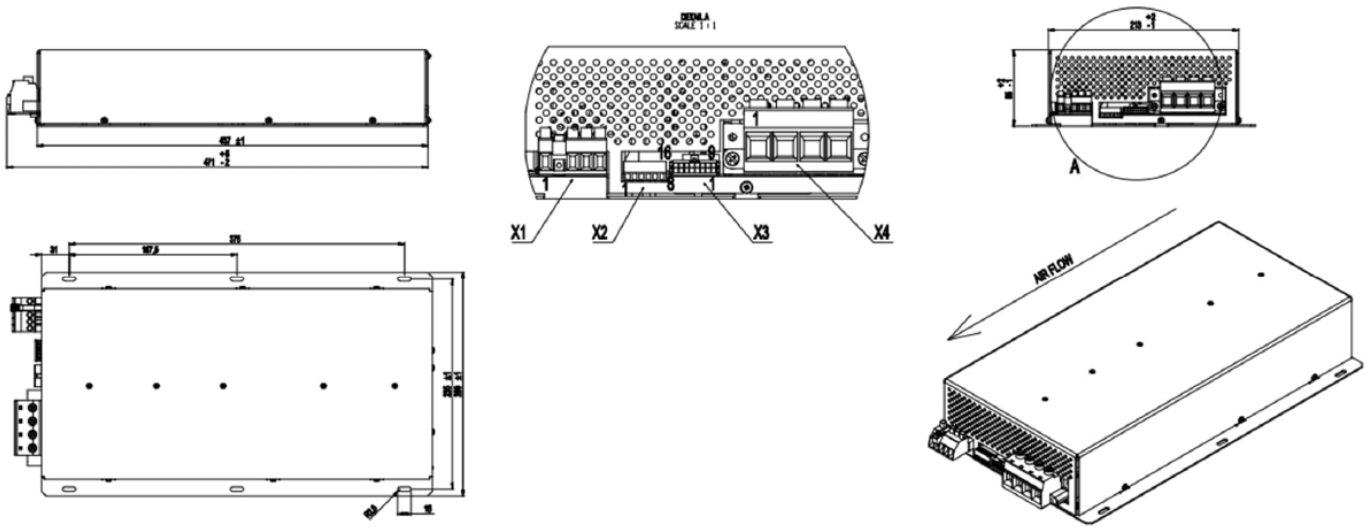
Parameter	Value
Inhibit	Active Signal Low (Connected to GND: Unit = OFF)
Operating Indicators: Green LEDS	Vin OK, Vout OK @18V
Temperature Sensor (Ext. PT100 SENSOR)	In Case of Parallel Connection, Provide a Temperature Probe on Each Power Supply. Connection for the Temperature Probe to Realize the Charging Curve
Relay Contact	Vout Relay Contact (N.Closed / Com / N.Open)
	Relay N.O Short with Relay COM = Unit OK
	Relay N.C Short with Relay COM = Unit Failure
	Relay Switch with Vout > 18VDC

PROGRAMMED TEMPERATURE CURVE



DIMENSION & CONNECTIONS

Parameter	Type	Value
Weight		<8Kg



MOUNTING DIRECTION: UPRIGHT FAN BOTTOM SIDE

CONNECTIONS

Pin	Value	Note
X1	1. PE	
	2. R	
	3. S	
	4. T	
X2	1. 0V_EXT	
	2. IDC_A	
	3. IDC_B	
	4. 0V_EXT	
	5. IDC_A	
	6. IDC_B	

Pin	Value
X3	1.Relay N.O
	2. Temp. PROBE
	3. Temp. PROBE COM
	4. SENSE-
	5. -INHIBIT
	6. I. PROG
	7. -I. PRG0V
	8. -ON / OFF
	9. Relay N.C.
	10. Relay COM
	11. BALANCE
	12. SENSE+
	13. INHIBIT
	14. V.PROG
	15. -V.PRG
	16. ON / OFF
X4	-Vout
X5	-Vout
X6	+Vout
X7	+Vout

CONNECTORS

Type
Input Connector X1 – WeidMuller Omnimate V7.62HP / 04 / 90MF2 Mate with BVZ 7.62IT/04/180/MF2
Modbus Connector X2 – RS PRO Cod.897-1149 Mate with RS PRO Cod.897-1095
Signal Connector X3 – Molex Microfit 3.0 90° 16circuit Cod.430451021 Mate with Cod.430251608
Output Connectors X4 – Phoenix PC35 HC/4-GF-15.00 Mate with PC35 HC/4-STF-15.00