

B2691-18

Schaefer AC/DC Battery Charger



For illustration purposes only

FEATURES

- Queensland Rail Type Approval C0192 - validated for signalling and level crossing applications.
- Natural convection cooling - no fans, reducing potential failure points and increasing long-term reliability.
- High-temperature operation up to 75°C
- for stable performance in signalling and equipment huts.
- Conformal-coated electronics and reinforced chassis resist humidity, vibration, and contamination common within the rail corridor.
- Supports parallel and redundant operation with active current sharing for load balancing and system redundancy.
- High transient protection, reverse polarity protection, and monitoring via Charger Fail and DC OK relay outputs.

SPECIFICATIONS

INPUT			
Voltage range	115V AC $\pm 20\%$ or 230V AC $+15\%/-20\%$, unit switches off at under and overvoltage	Parallel Operation	Includes Current Sharing with Interrupt in case of faulty unit in parallel operation
Frequency	50/60Hz	Reverse Polarity Protection	Via anti-parallel diode in the output (output fuse required)
Recommended Input Fuse / MCB	External 16A time lag / K-characteristic related to fuses manufactured by ABB	Transient and Surge Protection	Varistor on Input and Output to meet 2kV transient/surge in accordance with EN61000-4-4 / EN61000-4-5
No-load Input Power	Approx. 6W	MECHANICAL	
Switch-on Time	300ms typical	Mounting Type	Wall
Inrush Current	Limiting by thermistor	Dimensions	220 x 220 x 229mm (WxHxD)
OUTPUT		Weight	Approx. 6.0 kg
Voltage	13.8V DC (adjustable 12 ... 16V DC)	Increased Mechanical Strength	For shock and vibration in accordance with EN61373
Current	50A	Protection Category	IP20
Recommended Output Fuse	External 63A time lag / B-characteristic related to fuses manufactured by ABB	Mounting Instructions	Only in provided position (cooling fin vertical). Above and below the unit at least 40mm distance to neighbouring parts.
Line Regulation ($\pm 10\%$)	0.1 %	ENVIRONMENTAL	
Load Regulation (10-90%)	< 2%	Cooling	Natural Convection
Efficiency at Full Load	Approx. 85%	Humidity	Up to 99% RH, non-condensing due to additional Tropical Protection (Conformal Coating) applied to all PCBs.
Switching Frequency	Approx. 33 kHz	Temperature Coefficient	0.02 %/°C typical
Ripple	$\leq 1\% + 30\text{mVp-p}$	Operating Temperature	-20°C to +75°C
Load Transient (10-90-10%)	6 % typical	Internal Temperature	Switch 90°C heatsink temperature for emergency power off
Response Time to $\pm 1\%$	2ms typical	Load Derating	2.5 %/°C from +55°C
Turn-on Rise Time	Softstart, 300ms typical	Storage Temperature	-40°C to +85°C
Overload Protection	Current limited to 70 ... 110 % of full load	ALARMS / MONITORING	
Overvoltage Protection	OVP switches off the module at $U_{out} = 18\text{V}$ (with automatic return to operation)	Charger Failure	Indicating with relay
Remote Sensing	Sense lines have to be connected to the output or to the load under regard of polarity	DC-OK with Relay (output voltage monitoring)	Switching threshold: $U_{out} > 10.8\text{VDC}$
Redundant Operation	Via installed decoupling diode in the (+) output line		

RELIABILITY

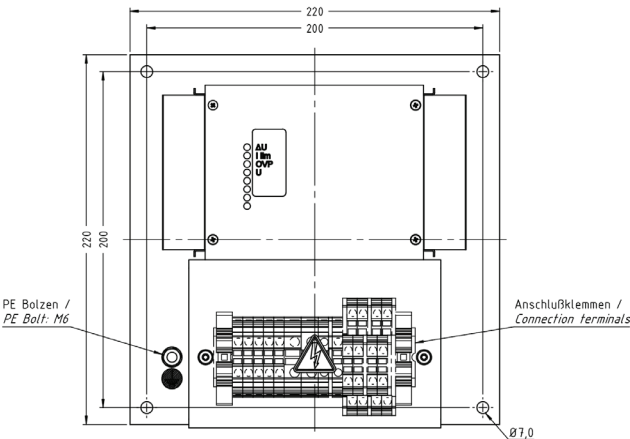
MTBF	Approx. 100.000 h at 40°C (in acc. to MIL-HDBK-217E Notice 1)
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SAFETY & STANDARDS

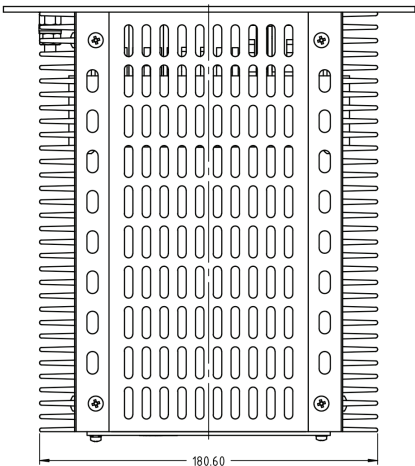
Safety / Construction	Acc. to to EN/IEC 61010-2-201 + EN/IEC 61010-1
Earth Leakage	< 3.5mA, acc. to EN/IEC 61010-2-201 + EN/IEC 61010-1
EMC Compatibility	Acc. to EN 61000-6-2 / EN 61000-6-4 / EN61000-4-4 / EN61000-4-5
Safety Class	1 (equipment with protective earth connection)
Overvoltage Category	II
Pollution Degree	2
Maximum Installation Altitude	2000m
Isolation Resistance	> 10 MΩ at 500V DC
Isolation Test	Acc. to EN/IEC 61010-2-201 + EN/IEC 61010-1

TECHNICAL DRAWINGS

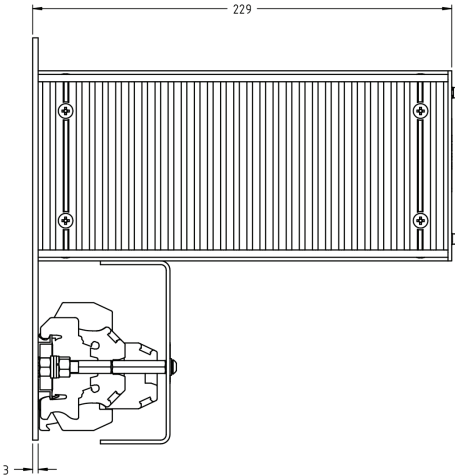
B2691-18-FRONT



B2691-18-TOP



B2691-18-SIDE



B2691-18-ISOMETRIC

