



SCHAFFLER
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600
PLATFORM

DCFORMER

Input: 74V or 110V DC (nominal)

Output: 580V DC (other voltages available)



The SCHAFFLER Dcformer is a fully isolated DC to DC converter for converting from a 74V or 110V battery voltage to 600V DC output. The output may be used to feed our other 600 Platform products such as three-phase variable frequency inverters for motors or single-phase 50Hz/60Hz inverters for general purposes.

Ideal for rollingstock with 74V or 110V battery systems, up to five DC Formers may be connected in parallel to provide a power output of 40kW. As the units are current controlled, there is no derating.

The SCHAFFLER design uses a high switching frequency (35kHz) that significantly reduces the size and weight of inductive components. The design also incorporates Insulated Gate Bi-polar Transistors (IGBTs) which provide reliable, efficient power transfer. The result is a rugged, light-weight unit that satisfies the demands of railway conditions.

Key features:

- 6kW at 74V DC input, 8kW capacity at 110V DC input
- Modular (increase capacity with multiple units)
- Less than 15kg
- Shock & Vibration tested
- Low EMI design

The DCformer can also be configured to produce a regulated 24V DC. This is used on locomotives to supply loads such as computer systems, ditch lights, emergency lights and windscreen wipers. In the 24V configuration, the unit is rated at 3kW.

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DC Former

Input voltage	nominal 74V DC (60V-90V) OR nominal 110V DC (92V-140V)
Output voltage	580V DC
Output power	8kW (9.25kW for 30s) for input 110V 6kW (7.25kW for 30s) for input 74V
Output regulation	Better than $\pm 5\%$
Output start-up	3 seconds
Application	Rail. In locomotives or passenger cars underframe
Over current	Set at 16A Unit restarts when current recovers
Short circuit	Protection included
Under voltage trip	90V DC for 110V system 55V DC for 74V system Unit restarts when voltage recovers
Over voltage trip	150V DC Unit restarts when voltage recovers
Operating frequency	35kHz
Start control	Option for start contacts or start on power up
Ambient temperature	0°C-60°C, up to 70°C at startup
Temperature protection	Thermostatically protected Heatsink trips at 105°C and resets at 75°C
Noise level	58 dBA
Altitude	Up to 1000m
Protection	IP56, forced ventilated from external source of air
Fault relay	Potential free change over contacts, 1A 30V DC
Fault diagnostics	3 LEDs, Green = OK, Yellow flashing = alarm, Red = Unit off Fault information available on PC via RS232 port
Presentation	a. Cold plate version suitable for fitting to external heatsink within an enclosure. b. Enclosure version fitted within enclosure supplied.
Weight	Less than 15kg
Lifetime	Electrolytic capacitor lifetime to exceed 10yrs at 30°C ambient, preferably to exceed 17yrs. Load duty 60% at 8/6kW, 100% at light load.

Standards

EN 50155	Electronic equipment used on rolling stock
IEC 1287-1	Power converters installed on board rolling stock
EN 50121-3-2	Electromagnetic Compatibility
IEC 61000-4-3	EMC standard
IEC 61373	Railway application rolling stock equipment: Shock and vibration testing
BRB/RIA-12	British Rail Standard for transients and surges
AS 3000	Wiring regulations

