



SCHAFFLER
www.schaffler.com

SINGLE PHASE INVERTERS

Input DC 74V, 110V, 400V or 600V

Output AC 110V, 220V or 240V @ 50 Hz or 60Hz



The SCHAFFLER range of single phase inverters take DC input power and produce AC power at the desired voltage and frequency. This power is then commonly used for driver cab comforts such as kettles, refrigerators, hot plates or microwave ovens. This can also be used to power general purpose mains-powered devices.

The method of power conversion is a Pulse Width Modulation (PWM) voltage-fed inverter producing a sinusoidal output with less than 3% harmonic distortion. The electronic control system uses a Digital Signal Processor (DSP). The power switching devices are Insulated Gate Bipolar Transistors (IGBT). A feedback network automatically regulates the depth of modulation of the PWM output to produce a controlled 240 volt 50 Hz (or 60 Hz) single phase output within the acceptable range of supply.

74V/110V DC to AC Single Phase Inverter - typical data

Output power	2.5kW to 20kW (4kW stock item)
Input voltage	74 or 110 volts DC nominal (+/- 25%)
Output voltage	240 volts single phase (+/- 2%) standard
Output frequency	Selected at 50 or 60 Hz (+/- 1%)
Output waveform	Sinusoidal < 3% harmonic distortion
Over current	Settings at 150% for 30 seconds
Ambient temperature	-10°C to 65°C
Weight	Models from 15kg to 42kg
Altitude	1000 meters
Physical Protection	IP30 - forced ventilated OR IP56 - for under floor mounting
Fault relay	Potential free change over contacts
Potential free contact	1 Amp 30 Volts DC
Start control	Start on closure of control contacts
Power connections	Military style plug including cable connector
Serial communication	RS232 option
Part No. for 74V unit	74-DC21-240-*kW
Part No. for 110V unit	110-DC21-240-*kW

SCHAFFLER Pty Ltd
Unit 4, 4 Prosperity Parade
Warriewood NSW 2102

p | 02 9997 1010
f | 02 9997 8996



SCHAFFLER
www.schaffler.com

Of particular note, the SCHAFFLER single phase inverters are able to handle the very large current drawn by microwave ovens in the first half-cycle of operation (which can exceed 100 Amps). The inverter reacts within 10 milliseconds causing no noticeable disruption to the output supply.

Models

R1-1: This unit is a single stage inverter that transforms at 50Hz and generates isolated output. The 50Hz transformer makes this model heavier than other units.

R3: This unit is a two-stage inverter that transforms at 25kHz and generates isolated output. The 25kHz transformer is small and light - the 4kW inverter is under 20kg.

R4: This unit is a single stage inverter, contains no transformer and is non-isolated. This inverter is used where the input supply is always higher than the required peak AC voltage. This unit the sine wave output via a different PWM modulation than isolated models.

SCHAFFLER single phase inverters have been proven in service in Australia, USA, Hong Kong, Singapore and India. Clients include:

- Control Automation (Singapore)
- Downer EDI Rail
- GE Transportation
- GTSA Engineering
- Indian Railways
- MTRC (Hong Kong)
- OneSteel
- Pacific National
- Queensland Rail
- SouthSpur Rail
- United Group Rail
- Yarra Trams

Other features and protections:

- Polarity protection
- Digital current limit trip
- Reverse supply protection
- Power On contacts
- LED Indication
- Under voltage trip
- Earth fault protection
- Short circuit protection

Standards

IEC 61373	Railway application rolling stock equipment: Shock and Vibration testing
IEC 60571	Electronic equipment used on rolling stock
EN 50155	Electronic equipment used on rolling stock
IEC 1287-1	Power converters installed on board rolling stock
EN 50121-3-1	Electromagnetic Compatibility
EN 50121-3-2	Electromagnetic Compatibility
IEC 61000-4-3	EMC standard
BRB/RIA-12	British Rail Standard for transients and surges
AS 3000	Wiring regulations

SCHAFFLER Pty Ltd
Unit 4, 4 Prosperity Parade
Warriewood NSW 2102
p | 02 9997 1010
f | 02 9997 8996

