
# DC-AC 11 kW CONVERTER

## Power Electronics

DC/AC 11 kW converter based on the Silicon Carbide technology

## Functionalities and Advantages

- Adjustable frequency and duty cycle of the output waveform
- Adjustment and reading of the frequency and duty cycle parameters via Ethernet communication
- Internal electronic protection against over-current, over-voltage, over-temperature and interlock fault
- Connection of external sensors possible for current and tension measurement on two analog inputs (BNC plugs)
- Reading measurements of external sensors as well as the phase difference current/voltage via an Ethernet communication

## Specific Capability

- Application in R&D for wireless charging systems for automotive

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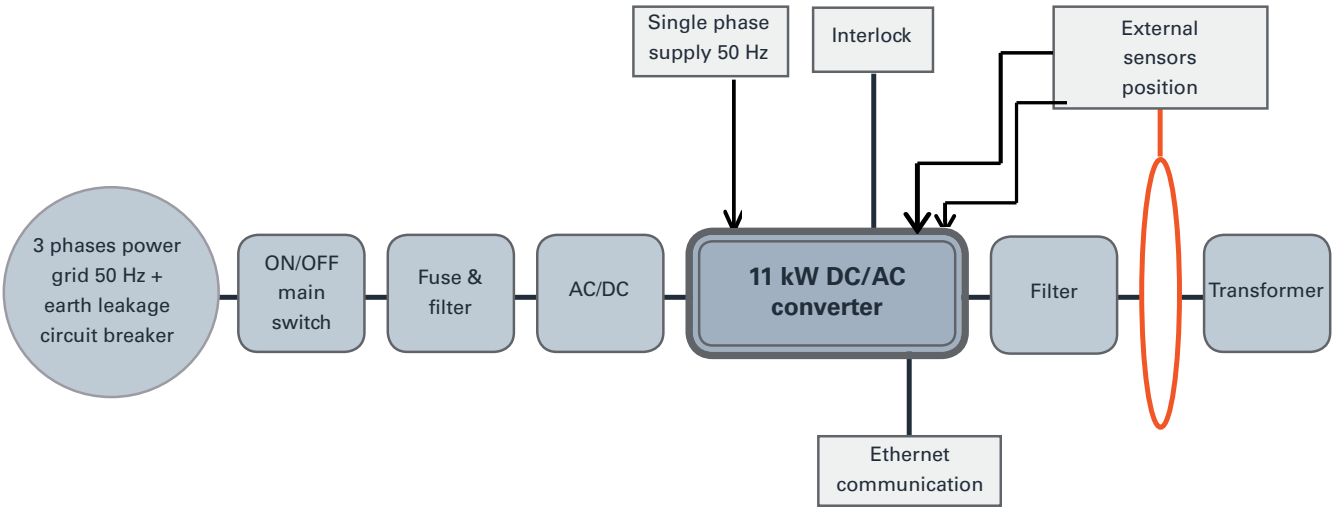
## Principle




Interconnection synoptic of the DC-AC converter with a wireless charging system (PFC)

## Technical Specifications

| | | | |
|---|---|---|---|
| Input features | Voltage range | 0 – 500 V | EXG0001-REVA |
| | Current range | 0 – 50 A | EXG0002-REVA |
| | Power range | 0 – 11,2 kW | EXG0003-REVA |
| Output features | Voltage range | 0 – 500 V | EXG0004-REVA |
| | Current range | 0 – 50 A | EXG0005-REVA |
| | Load condition | The converter shall not supply a current with a DC component. It might be recommended to add a serial capacitor on the output. | EXG0006-REVA |
| | Power range | 0 – 11 kW | EXG0007-REVA |
| | Voltage waveform and characteristics | Rectangular pulse wave centered on zero | EXG0008-REVA |
| | | Rise time: tr ≤ 1 µs | EXG0009-REVA |
| | | Fall time: tf ≤ 1,2 µs | EXG0010-REVA |
| | | Dead time: td ≤ 400 ns | EXG0011-REVA |
| | | Jitter ≤ 50 ns (in Ethernet mode) | EXG0012-REVA |
| | Voltage adjustments | Frequency: 30kHz to 160 kHz | EXG0013-REVA |
| | | Minimum frequency step: 128 Hz | EXG0014-REVA |
| | | Duty cycle: 15 % to 85 % | EXG0015-REVA |
| | | Minimum Duty cycle step: 1,5 % | EXG0016-REVB |
| General features | Power soft start | 1 s (5 % to DCY setpoint) | EXG0017-REVA |
| | Power efficiency | > 98 % @11 kW in resonant mode | EXG0018-REVA |
| | Supply consumption on 230 $V_{AC}$ | ≤ 1 A | EXG0019-REVA |