



## Requirements

Recent European legislation on EMC imposes limits on RF emissions from electrical equipment. These power line filters have been specifically developed for use with ELSAG CHF100 motor drives, enabling systems incorporation them to meet the European RFI emissions standards for domestic or industrial use.

## Ranges Covered

Inverter	Filter Type	Voltage
CHF100-1-1,5	NF-U-CHF100-12023	230V Single Phase
CHF100-1-2,2	NF-U-CHF100-12023	230V Single Phase
CHF100-3-0,75	NF-U-CHF100-34009	400V Three Phase
CHF100-3-1,5	NF-U-CHF100-34009	400V Three Phase
CHF100-3-2,2	NF-U-CHF100-34009	400V Three Phase
CHF100-3-5,5	NF-U-CHF100-34020	400V Three Phase
CHF100-3-7,5	NF-U-CHF100-34020	400V Three Phase
CHF100-3-11	NF-U-CHF100-34038	400V Three Phase
CHF100-3-15	NF-U-CHF100-34038	400V Three Phase
CHF100-3-18,5	NF-U-CHF100-34038	400V Three Phase
CHF100-3-22	NF-U-CHF100-34076	400V Three Phase
CHF100-3-30	NF-U-CHF100-34076	400V Three Phase
CHF100-3-37	NF-U-CHF100-34076	400V Three Phase

## Design and Test Criteria

Generally with motor drive systems the emission levels are greatly affected by the length of the cable between the drive itself and the motor - longer cables will cause considerably higher emissions.

The inverter filter combinations here have been designed and tested to achieve compliance to:

- EN 55022:2006 Class B for use in domestic / light industrial environments (equivalent to the RF emissions tests of Power Drive Standard EN 61800-3:2004 cat. C1), when fitted with up to 25m motor cable (switch in position "1") resp. up to 10m motor cable (switch in position "0").
- EN 55011:2006 Class A (Group 1) for use in industrial environments (equivalent to the RF emissions tests of Power Drive Standard EN 61800-3:2004 cat. C2), when fitted with up to 50m motor cable (switch in position "1") resp. up to 25m motor cable (switch in position "0").

## Leakage Current

On single phase applications the leakage current is present all of the time. For three phases applications under normal conditions with three phases balanced, leakage currents are extremely small. The max values stated are worst possible values such as would occur momentarily during switch on or failure of one or two phases. All our three-phase filters have an additional switch for low leakage current (switch in position "1") and very low leakage current (switch in position "0").

## Use of Filters with 200V Three Phase Inverters

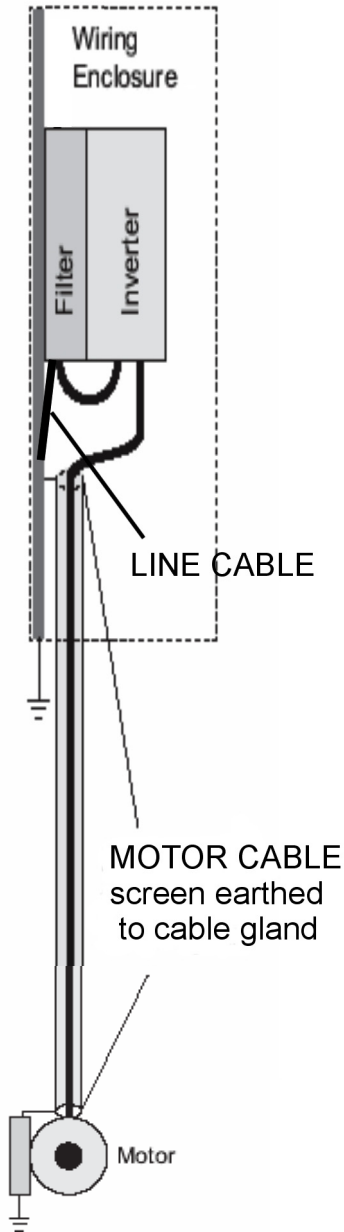
These filter ranges may also be used with 200V inverters, but care should be taken in the filter selection. The equivalent 200V model of an inverter will require approximately twice the current of the 400V model! Running a filter on under-voltage is perfectly acceptable, but running at over-current for any extended period is not advisable.

## Technical Information

For more technical data, a separate data sheet is available for each filter model. This gives detailed dimensions, circuit diagram and electrical ratings.

## Filter Installation Notes

To be conform to EMC directives, it is essential that good wiring practice is observed and that all installation recommendations are followed.



- The usual safety procedures when working with electrical equipment must be followed and all electrical connections to the filter, inverter & motor must be made by a qualified electrical technician.
- Filters should be fitted as closely as possible to the incoming mains supply of the wiring enclosure, usually directly after the enclosures circuit breaker or supply switch.
- Care should be taken to remove any paint etc. from filter and inverter mounting holes and face area of the panel to ensure the best possible earthing of the units.
- All lead lengths should be kept as short as possible and incoming mains, outgoing motor cables and control cables should be kept well separated. Cable earth screens should only be stripped back as far as necessary to make connections - screens should be securely earth bonded to the wiring panel.