

2. Introduction

2.1. Functions of the OSFD active harmonic filter

The OSFD active harmonic filter enables:

- Compensation of current harmonics of the load and improvement of the current THD on supply-side
- Improvement of the voltage THD (depending on network impedance and pre-distortion by upstream loads)
- Compensation of reactive power and an improvement of the power factor $\cos \varphi$
- Load balancing
- Display and parameterization by integrated display and key-pad and standard PC (interface converter USB - RS485 is available accessorially)

2.2. Principle of operation

OSFD active harmonic filter is based on the principle of active power filter. The line current, which is drawn by a non-linear load, is measured by OSFD via external current transformers. The harmonic content and reactive power components are detected and processed in a digital control structure. The power electronic converter of OSFD continually generates a compensating current that offsets the harmonic content and reactive current in the load, so that the source only has to provide the fundamental in-phase current. By reducing harmonic distortion of the current drawn from source usually the harmonic distortion of voltage is decreased as well.

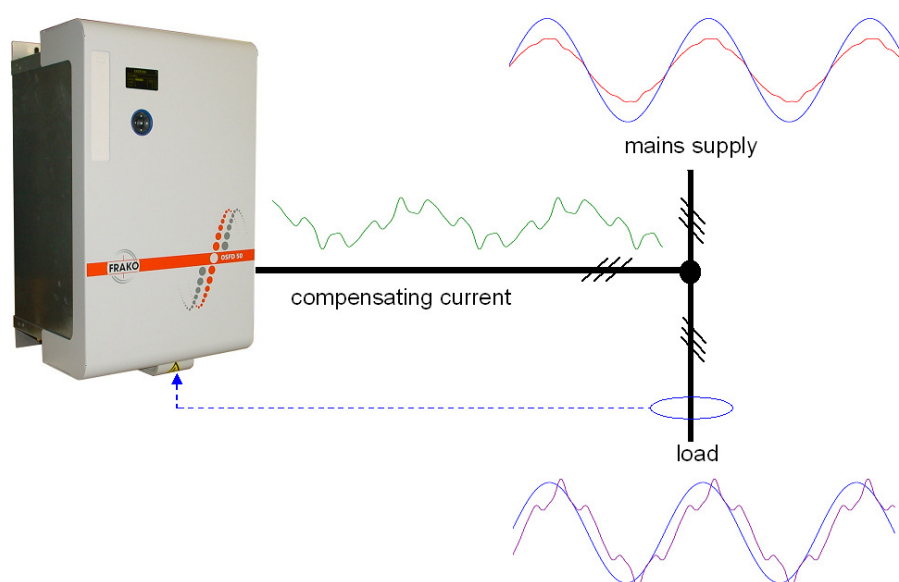


Fig. 1: Principle of operation of the OSFD active harmonic filter