CONDENSATOR DOMINIT

...the power quality company

RESONANCE ELIMINATION SYSTEMS

RESI

CONDO D2261804

GridClass® Technology

MADE IN GERMANY

WE ARE DESIGNING, PLANNING AND MANUFACTURING OUR RESI-PRODUCTS IN GERMANY

RESI – RESONANCE ELIMINATION SYSTEMS

The RESI product family is used when disturbances or resonances occur at higher frequencies unlike the case of classical higher-order harmonics.
Using a usual LC absorption circuit, network resonances cannot be eliminated completely but only be shifted to another frequency. By the introduction of damping – e.g. a high pass resistor – resonances can be completely eliminated from the respective electrical systems. RESI systems are available up to larger units when attenuating the effects of commutation sags through high-power converters is necessary.

THE PROBLEM

Capacities spread around the power grid, e.g. long cable sections, input filters of inverters or compensation systems without choke, are forming together with the power supply transformer a resonance. If a source for a current is existing within the power grid close to this frequency, already a minor current can result in high disturbances of the voltage levels.

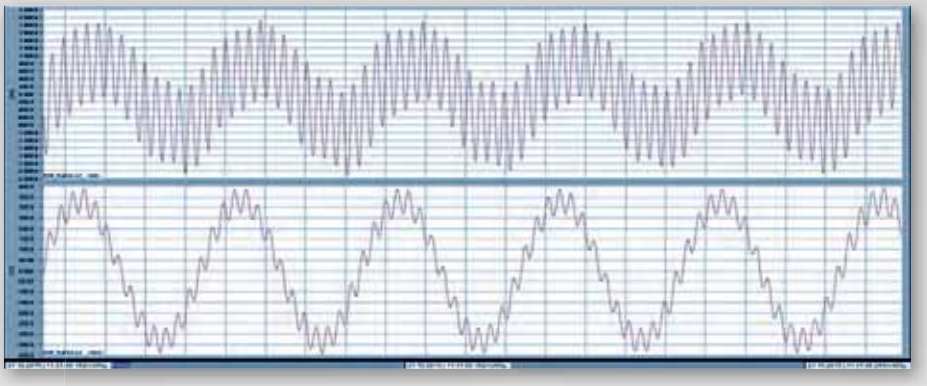
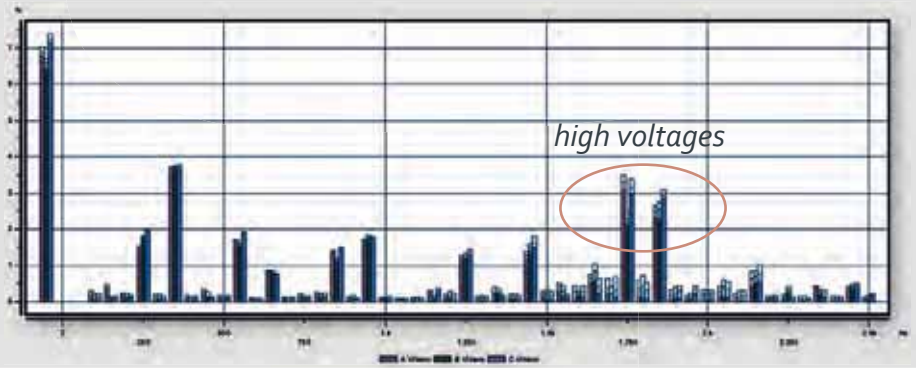


Image 1



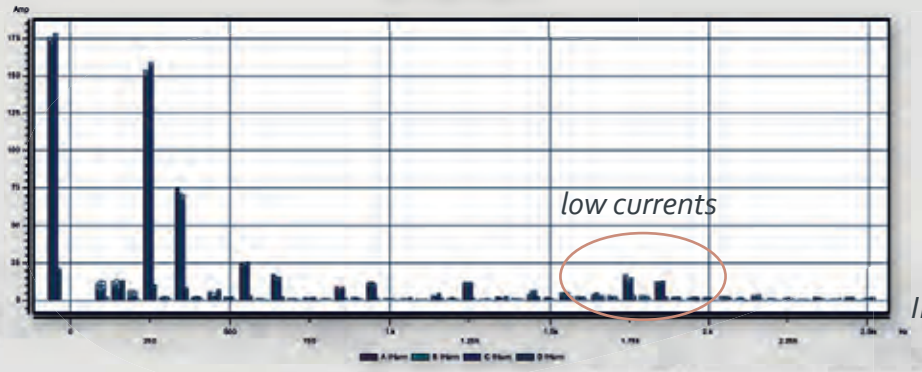
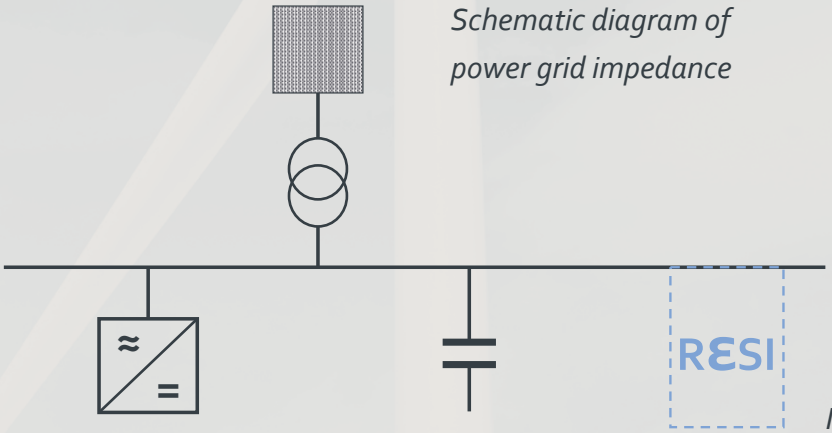


Image 2

Example for distortions of current and voltage due to resonance

THE SOLUTION

By using a damping high pass filter in parallel to the power grid (see image 3) the resonance can be eliminated effectively, as shown in image 4. The red graph shows the power grid impedance from the point of view of a low-voltage distribution of a power grid with 50 MVA short-circuit capacity, a 630 kVA transformer and a capacity of 100 µF. The green graph shows the same power grid after adding a RESI-filter with 25 kvar capacitive reactive power.



Schematic diagram of power grid impedance

Image 3

Power grid impedances

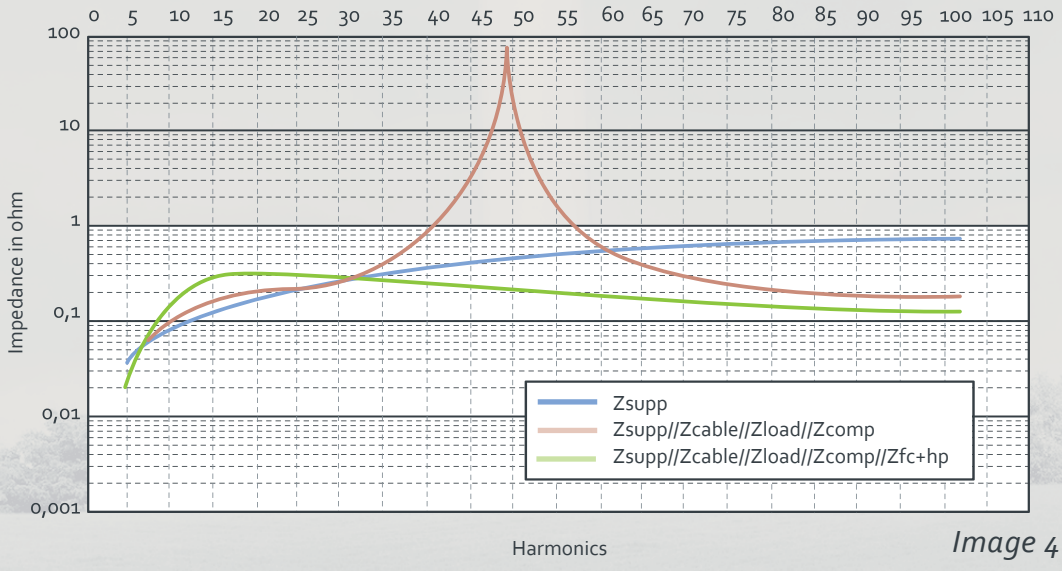
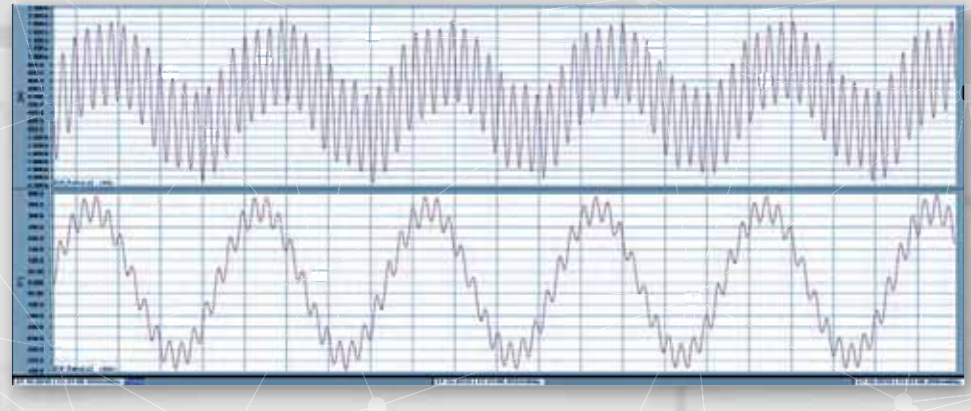
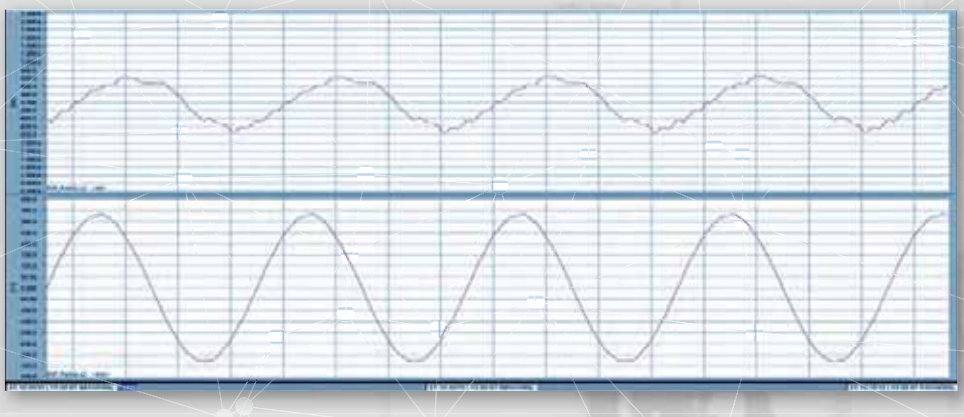


Image 4

CASE STUDY



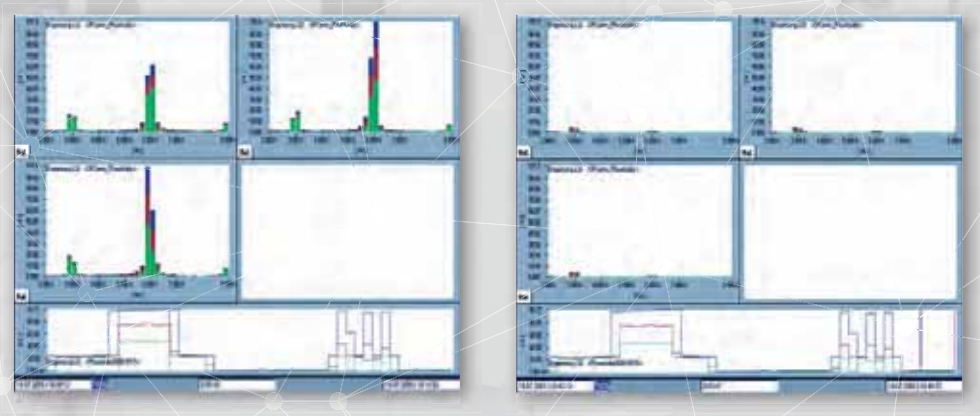
without RESI



with RESI

Variation in time of current and voltage from an actual measurement.

without RESI *with RESI*

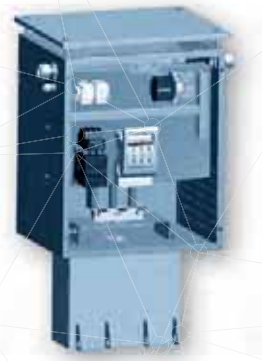


Spectrums of current and voltage from an actual measurement.

RANGE OF TYPES

RESI-SG
Compact floor-mounted appliance for damping of resonances with higher frequencies

Dimensions W x D x H = 522 x 424 x 959 mm
RESI-SG-400/50-25-H11-0,35
RESI-SG-440/50-26-H11-0,35
RESI-SG-690/50-35-H11-0,7
RESI-SG-480/60-30-H11-0,35



RESI-MOD
Module for installation in a control cabinet

Dimensions W x D x H = 230 x 344 x 1400 mm
Same range of types as RESI-SG

RESI-EMV
Installed in Rittal TS8-Control cabinet, for damping of resonances and switching frequencies in power grids with high-power inverters.

Dimensions W x D x H = 812 x 650 x 2100 mm
RESI-EMV-400/50-1x40
RESI-EMV-400/50-2x40
RESI-EMV-400/50-3x33,3

RESI-HV
For damping of resonances and switching frequencies in medium- and high-voltage power grids (> 1kV)

Other designs on request
(different voltages, with cooling unit, for outdoor installation, ...)

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Condensator Dominit GmbH
An der Bremecke 8
D-59929 Brilon / Germany
Phone +49 (0) 2961 - 782-0
Fax +49 (0) 2961 782-36
E-Mail info@dominit.eu
Web www.condensator-dominit.de