

GINO AG

Elektrotechnische Fabrik



Surge Suppressor

Product data catalogue

1 Zinc Oxide Resistor Capacitor (ZORC)

GINO AG is the exclusive distributor of ZORC modules in Germany.



The ZORC is a unique, high frequency transient overvoltage surge suppressor for the protection of motors, transformers and generators from steep wave-front, short rise-time, high magnitude, spikes, surges, other transient voltages and circuit switching.

Every year huge losses are incurred by end-users because of insulation failures of medium voltage (3kV – 40kV) motors, generators and transformers. Owing to the nature and duty normally associated with medium voltage equipment, the indirect costs are often significantly higher than the direct repair costs.

The protective characteristics of the ZORC surge suppressor provide comprehensive insulation coordination with both the CIGRè and IEEE motor impulse voltage withstands characteristics at all practical surge magnitudes and rise-times.

ZORC surge suppressor eliminates multiple pre-striking and re-striking (re-ignition) transients associated with vacuum and other switchgear.

Suitable for both switchgear panel and machine terminal box mounting, the ZORC surge suppressor is an easy-to-apply, compact and low cost solution to the extremely expensive problem of motor, transformer and generator.

It is good engineering practice for any machine that has a winding to be fitted with ZORC surge suppressor in order to protect and prolong its work life. Many thousands of ZORC surge suppressors have been installed over the past 25 years on motors, generators and transformers, solving the pressing problem of insulation failures and attendant repair and downtime costs.



Why buy a ZORC surge suppressor

ZORC is designed and manufactured in South Africa to stringent standards and is supported globally.



ZORC saves money by eliminating production downtime incurred as a result of insulation failures.

ZORC protects and extends new as well as retrofitted motors, generators and transformers throughout their service life.

ZORC offers an unparalleled price to performance ratio.

ZORC eliminates multiple pre-striking and re-striking transients associated with vacuum and other switchgear.

ZORC halves the magnitude of steep wave-front surges impinging on the load terminals (i.e. eliminates voltage doubling effects).

ZORC is maintenance-free, requiring only periodic cleaning of bushings in contaminated areas.

2 Design overview



Standard: 3 Phase			
Type	Width [mm]	Height [mm]	Depth [mm]
M3 – 3,3 kV	428	444	138
M3 – 4,2 kV	428	444	138
M3 – 6,6 kV	428	444	138
M3 – 7,2 kV	428	444	138
M3 – 11 kV	535	489	105
M3 – 12 / 13 kV	535	489	120

Standard: 1 Phase			
Type	Width [mm]	Height [mm]	Depth [mm]
M1 – 11 kV	535	489	105
M1 – 12 / 13 kV	535	489	120
M1 – 15 kV	428	522	105



Compact: 3 Phase			
Type	Width [mm]	Height [mm]	Depth [mm]
M3C – 3kV	280	242	116
M3C – 4,2 kV	280	242	116
M3C – 6,6 kV	280	242	116

Low Voltage: 3 Phase			
Type	Width [mm]	Height [mm]	Depth [mm]
LVZ400	182	255	90
LVZ550	182	255	90
LVZ690	182	255	90
LVZ1000	182	255	90

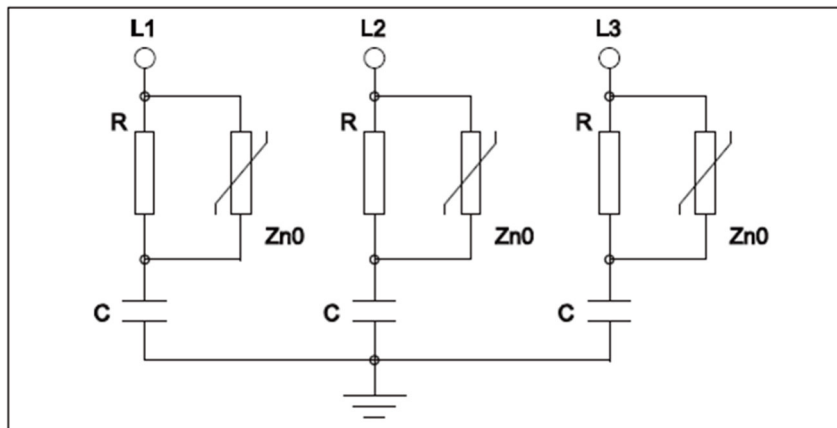


RC Suppressor: 1 Phase			
Type	Width [mm]	Height [mm]	Depth [mm]
M1 – 22 kV	429	762	138
M1 – 25 kV	440	1526	440
M1 – 33 kV	440	1526	440
M1 – 36 kV	440	1526	440
M1 – 40 kV	440	1526	440

3 Product Functions & Installation

- System Voltage 400 V to 40 kV
- Transient protection 0.1 to 0.2 micro seconds range
- Installation Special compact versions that can be fitted within most motor / transformer terminal enclosures or switchgear panels.

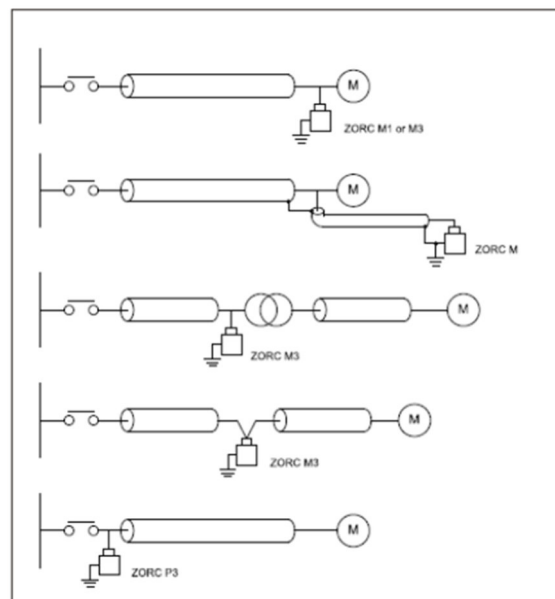
The ZORC™ surge suppressor is a unique voltage and frequency dependent cable-terminating network comprising of, capacitors, resistors and Zinc Oxide (ZnO) non-linear arresters.



ZORC surge suppressors may be installed in any orientation (including upside down) on the machine side of the associated medium voltage motor/generator/transformer switch, in the following positions (in order of preference from a surge protection point-of-view).

Preferred connections of ZORC surge suppressors:

- In the motor/generator/transformer terminal box, connected from each phase to earth
- Cabled to the motor/generator/transformer terminal box via a 3-core cable (25mm minimum), plus earth conductor (in accordance with local regulations)
- In line with the motor/generator/transformer supply cable, shunt connected from each phase to earth
- In the associated motor/generator/transformer switch panel, connected from each phase to earth
- Convenient mounting brackets or clamps are provided



4 Applications

Power station auxiliaries

Pumps

Crushers



Induction and arc furnaces

Compressors

Mini and mobile substations



Conveyors

Refrigeration machines



Mine winders

Fans

Generators



Motor-generator

Mills

Dry type transformers

GINO Representatives



Australia		Austria		Belgium		Bulgaria		Canada	
Chile		China		Czech Republic		England		France	
Hong Kong		India		Indonesia		Italy		Laos	
Luxembourg		Malaysia		Netherlands		New Zealand		Peru	
Philippines		Russia		South Africa		Sweden		Switzerland	
Taiwan		Thailand		Turkey		United States		Vietnam	



certified acc. to ISO 9001, IRIS

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