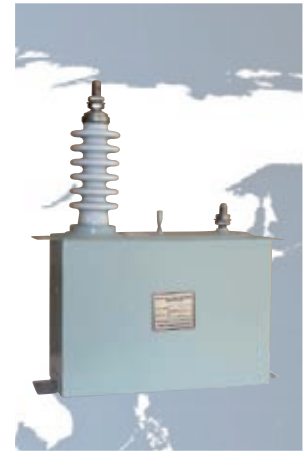
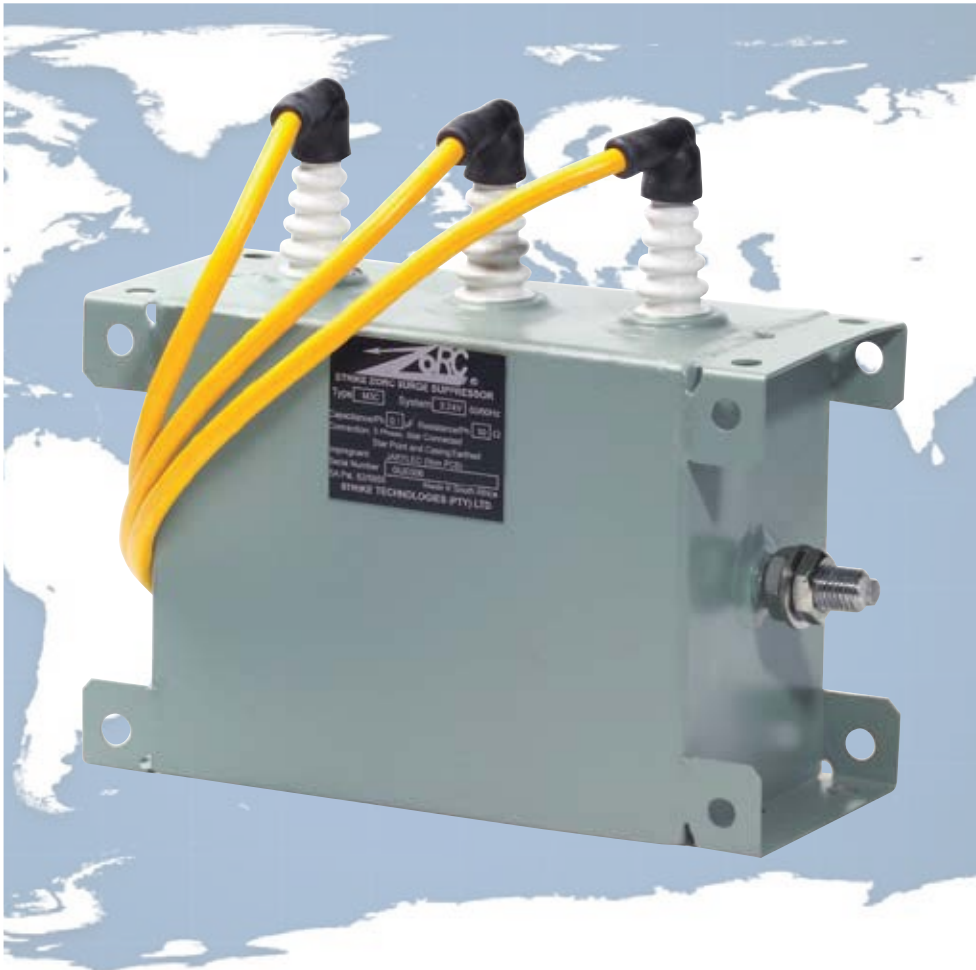


ZORC

Transient Surge Suppressor



Electrical Distributors



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

Key Features:

- Manufactured and supported in South Africa
- Saves money by eliminating production downtime due to insulation failures.
- Protects motors, generators and transformers throughout their service life.
- Eliminates multiple pre and re-strike transients associated with vacuum and other switchgear
- Standard and intrinsically safe models available
- Three and single phase

Product Functions:

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

Applications:

- Fans
- Compressors
- Crushers
- Motor-generator sets
- Conveyors
- Generators
- Induction and arc furnaces
- Pumps
- Mills
- Refrigeration machines
- Mine winders
- Mini and mobile substations
- Power station auxiliaries
- Dry type transformers

Installation:

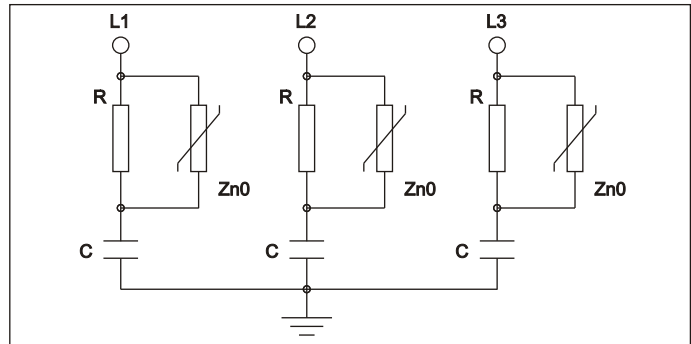
ZORC surge suppressors may be installed in any orientation (including upside down) on the machine side of the associated medium voltage motor/generator/transformer switch, in the following positions (in order of preference from a surge protection point-of-view):

- 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 (25mm² 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.

Overall mechanical dimensions - guide

Model	Height	Width	Depth
LVZ-400/550/1100	225	224	90
M1-3 & 6kV	190	115	120
M1-11kV/M1-13kV	480	405	135
M3/P3-3 & 6kV	410	405	135
M3/P3-11kV	480	515	105
M3C-3 & 6kV	255	280	110

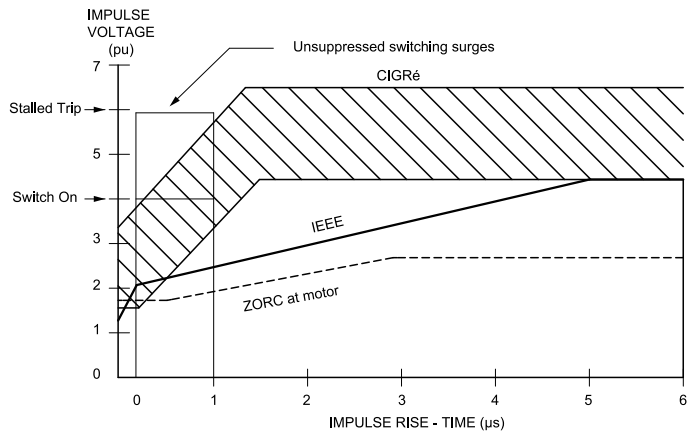
The ZORC surge suppressor is a unique voltage and frequency dependent cable-terminating network comprising of, capacitors, resistors and Zinc Oxide (ZnO) non-linear arresters.



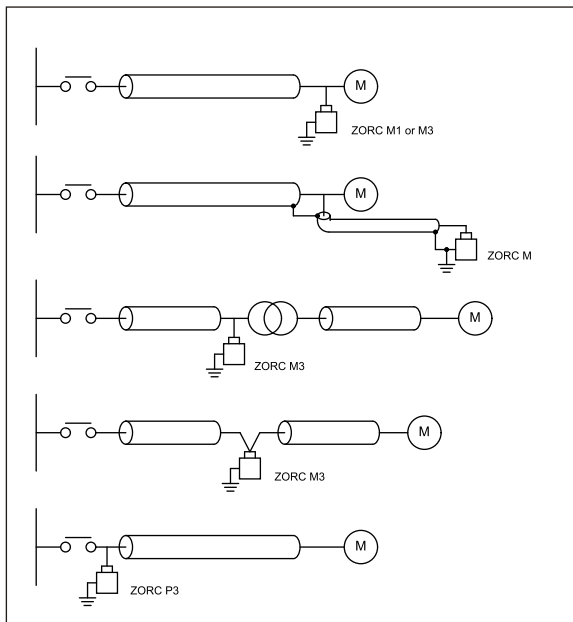
Patented ZORC circuit and technique.

Clamping

The IEEE curve takes the effect of ageing into account.



Showing unsuppressed switching surge magnitudes and rise-times, and insulation co-ordination provided by ZORC



Preferred connections of ZORC surge suppressors

Factory Test and AC Over-Potential Test:

Type	Test 1			Test 2	
ZORC rated voltage	Voltage between L1 & L2	Voltage between L1 & L2	Voltage between L1 & L2	Voltage between L1 & earth	Voltage between L2 & earth
M3/P3 – 3.3kV	14kV DC	14kV DC	14kV DC	3.3kV AC	3.3kV AC
M3/P3 – 6.6kV	28kV DC	28kV DC	28kV DC	6.6kV AC	6.6kV AC
M3/P3 – 11kV	47kV DC	47kV DC	47kV DC	11kV AC	11kV AC
M3C – 3.3kV	14kV AC	14kV AC	14kV AC	3.3kV AC	
M3C – 6.6kV	28kV AC	28kV AC	28kV AC	6.6kV AC	

TEST 1 Capacitance to be within 10% of nameplate rating when measure before and after test.

Apply test voltage between L1 & L2, L1 & L3, and L2 & L3 phases, each for 10 seconds.

TEST 2 Bridge L1, L2 & L3, and then apply test voltage between bridged connections and earth for 10 seconds.

Note: These are factory ZORC tests and should not be used as site testing. (Refer below).