SUPERCONDUCTING QUENCH PROTECTION

Discharge magnetic energy from superconducting coils quickly and safely.

Using a Metrosil non-linear resistor, the energy from the magnetic field can be extracted at a much faster rate and more efficiently. Our tests on superconducting systems at CERN have shown that using Metrosil varistors results in a rapid current decay that is roughly three times faster than a linear dump resistor - reducing the amount of energy dissipated in the superconducting coils during quench by as much as 50%.

FEATURES:
• Passive silicon carbide semi-conducting varistor with non-linear electrical characteristics
• Clamps voltage to a required magnitude and absorbs energy stored in the superconducting magnet's electromagnetic field
• 100% high energy tested and certified to ratings
• Can be retrofitted to replace existing linear dump resistors

BENEFITS:
• Faster discharge of current from the electromagnetic system
• Less energy is dissipated within the superconducting elements following a quench event - reducing the likelihood of damage
• Metrosil protection enables magnets to be run under higher currents/field strengths
• If subject to currents/energies beyond design ratings, Metrosil varistors short-circuit, further protecting the magnet and its elements
**PROVEN TO DISCHARGE ENERGY FASTER THAN LINEAR RESISTORS**

Faster Current Discharge

Reduced Energy Dissipation in Coils

Non-Linear Vs. Linear Electrical Characteristics

metrosil.com

Patent Pending.

To discuss utilising Metrosil within quench protection systems, please contact our team:

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