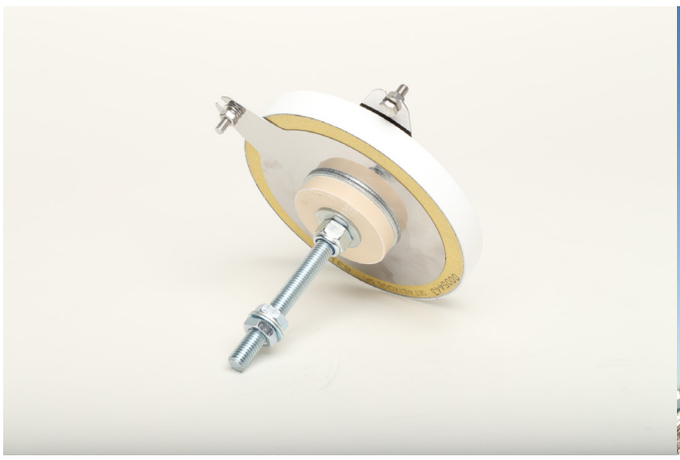
AUGUST 2010

METROSIL®
PROTECTION BUILT-IN

METROSIL FOR USE WITH ELECTROMAGNETS



Large electromagnets are extensively used in steel works, foundries, etc., for the handling of iron and steel. Power is fed to the magnets through trailing cables from a control box. These magnets, with ratings of tens of kilowatts, possess considerable stored magnetic energy, and it is therefore essential to provide a discharge resistor to absorb this energy when the magnet is switched off. It is usual for the discharge resistor to be situated in the control box with the rest of the control gear. Lifting magnets are often subjected to rough treatment and it is not uncommon for the cable to be broken. If this happens while it is switched on, the magnet is deprived of its discharge resistor and the final result is a breakdown of the magnet insulation, followed by a costly re-wind.

Magnet Rating	Metrosil Type	Max. Voltage on Discharge
Up to 8 kW	600A/S1/6010	1250V
16 kw	600A/US2/P/6014	1250V
24 kw	600A/US3/P/6004	1250V
32 kw	600A/US4/P/6032	1250V
40 kw	600A/US5/P/6314	1250V
48 kw	600A/US6/P/6138	1250V

WHY METROSIL?

A special range of Metrosil discharge resistors, intended for mounting on the magnet itself, have been designed. These resistors are not intended to replace the metal linear discharge resistor in the control box; their purpose is to protect the magnet in the event of cable breakage. Of robust construction, they are permanently connected across the magnet coil and, due to their non-linear characteristics; their power consumption is negligible. Extensive tests and many years of service have shown that these units will provide ample protection against voltage surges caused by cable breakage. They will also offer protection against surges caused by contact bounce as the contactor closes (the metal resistor is not in circuit at this time). Similarly, protection is given if the supply should, for any reason, be interrupted before the control gear has time to operate. The table above shows a list of recommended types of Metrosil assemblies for different magnet ratings at 220/250V smooth dc. For different supply voltages and other applications, please contact us.

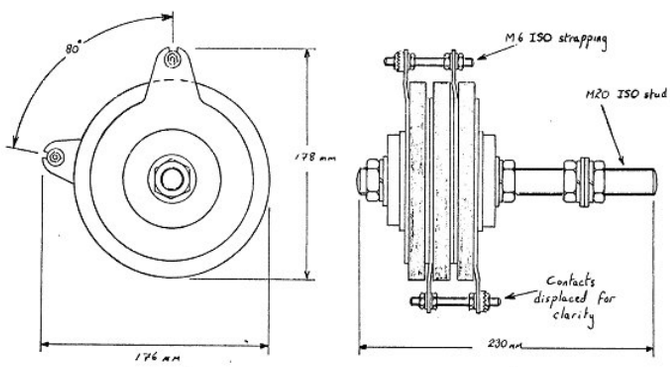


Figure 1 - Typical Outline Drawing

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