

## SURGE SUPPRESSOR FOR LIFTING ELECTRO-MAGNETS SERIES KSS

**KAKKU** Surge Suppressors Series **KSS** are manufactured from ceramic semi-conducting resistance material in which the relationship between applied voltage and current is non-linear. An increase in the applied voltage will thus result in a much larger increase in the current. Therefore as the voltage increases, there is a fall in resistance value instantly.

### ELECTRICAL CHARACTERISTICS

The relationship between current and voltage of these devices can be expressed as :

$$I = H \cdot V^a \text{ or } V = K \cdot I^b$$

Where H (or K) are constants for any one resistor. The value of the exponent (b = 1/a) is  $\geq 20$  for these devices.

### LIFTING ELECTRO-MAGNET APPLICATIONS

The Surge suppressors Series **KSS** are designed to protect the coils of the lifting magnet in the event of de-energisation of the magnet in an abnormal way.

In normal operation, the voltage surges are limited by a non-inducting resistance, which is normally included in the magnet control circuit. However, in case of cable snapping, the voltage across the coil can rise to very high values, with consequent stressing of coil to coil and coil to shell insulation. The use of **KAKKU** surge Suppressors Series **KSS** connected directly across the coil ensures that the resultant back emf is clamped to safe value (about 1200V).

These devices can be used with magnets of rating upto 42KW.

Very little energy is consumed by these devices in normal operation (less than 40 $\mu$ A current at 220V DC).

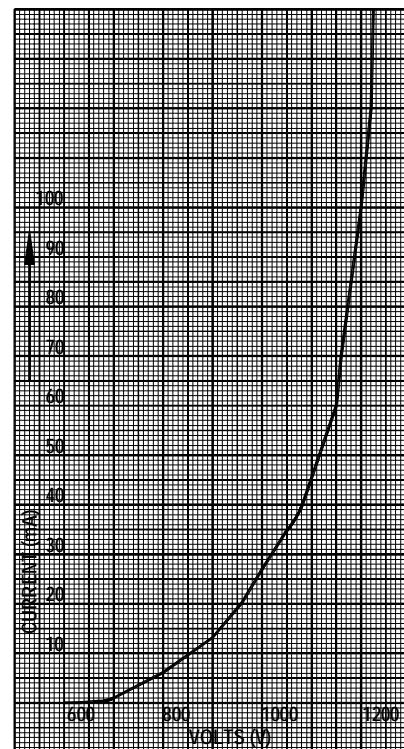
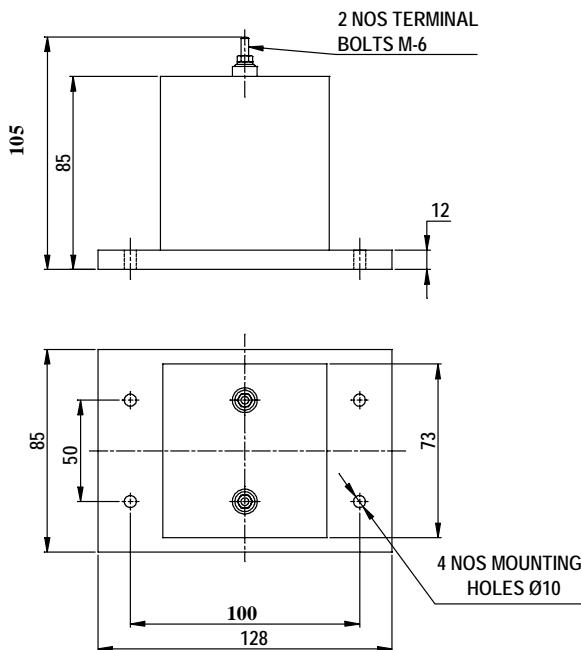
The Surge Suppressors Series **KSS** are suitable for Lifting Electro-magnets used upto 250 V DC supply.

### SERIES KSS

Dimensions (mm)

TYPE	Magnet KW (Max.)
KSS-101-01	7
KSS-101-02	11
KSS-101-03	22

### SELECTION CHART-I



Typical Characteristics Curve

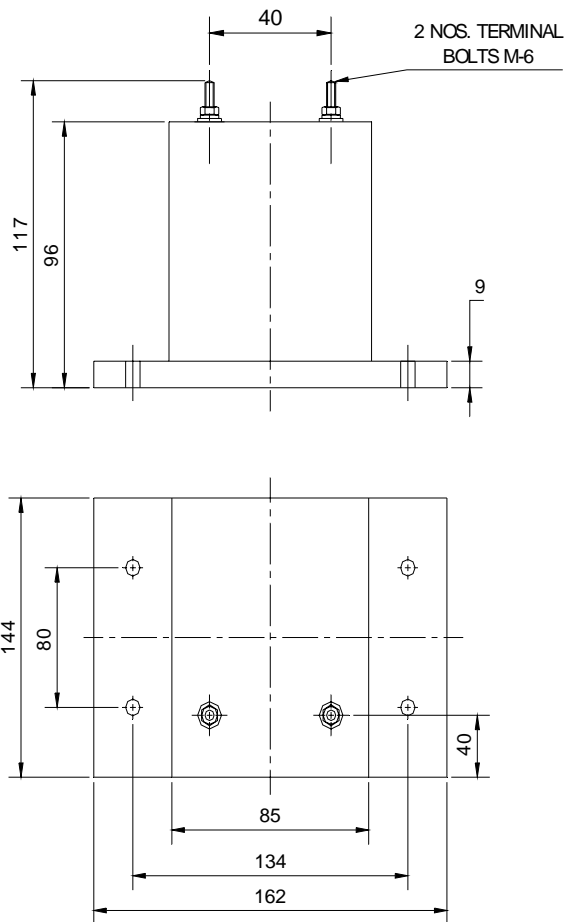


Symbol Of Reliability

**SURGE SUPPRESSOR FOR LIFTING ELECTRO-MAGNETS**  
**SERIES KSS**

Selection chart - II

TYPE	Magnet KW (Max.)
KSS-102-01	30
KSS-102-02	42



**NOTE: The Mounting Dimensions can be modified  
As Per requirement .**

*Product improvement is a continuous process at KAKKU. Hence data given in this catalogue is subject to revision without notice.*

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