

Damping Reactor

Capacitor switching



SA , SB and Sc type

Capacitor **damping reactors** are able to withstand a rated inrush current, which must be high enough to cover all recognized cases of switching the capacitor battery or battery sections. The system planner must provide information to the reactor supplier regarding the relevant inrush resonant frequency. The reactor supplier supplies information about the Q-factor (the ratio reactance to resistance) of the damping reactor at this frequency.

Damping Reactors SA, SB and SC series
Damping reactors are an ironless (air core) reactors and used for damping transients and inrush currents. When connected in series with the capacitor the reactor reduces the inrush peak current into the capacitor to a value which cannot stress the insulation and does not damage the internal connections of the capacitor elements. Such reactors remain connected after energization of the capacitor.

Consequently these must be designed in accordance with the continuous load current that the capacitor is exposed to. Unless otherwise specified Mangoldt will typically design these reactors for 43 % current overload and a fault level which is 25 times the nominal current

Type	Air core single phase dry type reactor (without magnetic core)
Rated voltage	3.6 kV up to 36 kV
Rated frequency	50 Hz or 60 Hz
Rated current	Up to 650 A
Inductance	Up to 1000 μ H
Rated insulation level	3.6/10/40 kV up to 36/70/170 kV
Rated short-circuit current	43 x I _n A/1s (25 x I _n A/3s) up to 16 kA/1s
Dynamic current	2.5 x I _{th}
Construction	Cast resin (reactors are encapsulated in epoxy resin)
Winding material	Copper
Mounting arrangement	Indoor or outdoor
Temperature class	A
ambient temperature	-40 °C up to +70 °C
Cooling	Air natural
Surface protection	Against UV and pollution class IV areas
Standards	IEC 60289

