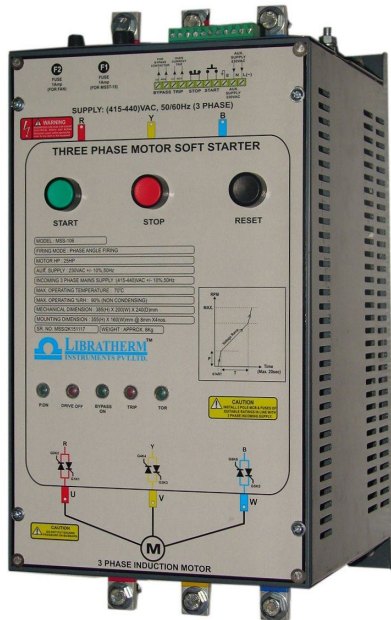
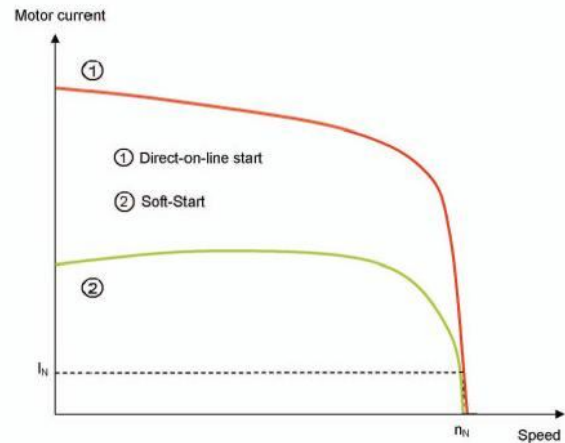
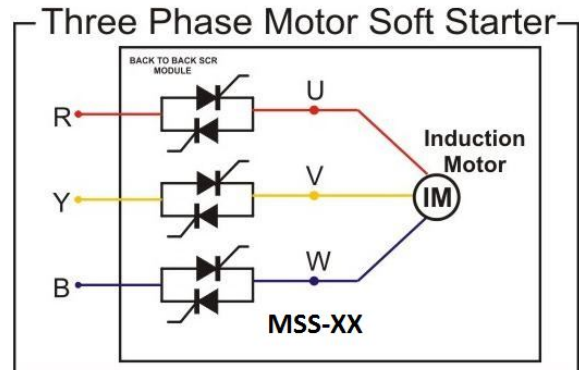


THYRISTOR BASED MOTOR SOFT STARTER (MSS-XX) FOR 3 PHASE INDUCTION MOTOR



MSS-035



Model Wise Description:

Model	Motor Ratings (HP) @ 440VAC	Motor Ratings (KW) @ 440VAC	Max. Starting Current /Continuous current	Std. Sizes (H x W x D) mm
MSS-006	(1 to 6) HP	(0.75 to 4.5) KW	20A / 6.2A	255 x 170 x 80
MSS-010	(7 to 10) HP	(5 to 7.5) KW	32A / 10.5A	255 x 170 x 80
MSS-015	(11 to 15) HP	(8 to 11) KW	45A / 15A	255 x 170 x 80
MSS-020	(16 to 20) HP	(12 to 15) KW	55A / 18A	315 x 180 x 240
MSS-035	(21 to 35) HP	(16 to 26) KW	75A / 36A	385 x 200 x 240
MSS-050	(36 to 50) HP	(27 to 37) KW	110 / 50A	385 x 200 x 240
MSS-075	(51 to 75) HP	(38 to 55) KW	150A / 75A	425 x 285 x 280
MSS-110	(76 to 110) HP	(56 to 82) KW	230A / 115A	450 x 355 x 355
MSS-150	(111 to 150) HP	(83 to 111) KW	310A / 155A	450 x 355 x 355
MSS-200	(151 to 200) HP	(112.5 to 147) KW	410A / 205A	450 x 355 x 355
MSS-225	(198 to 225) HP	(147.5 to 168) KW	470A / 235A	450 x 355 x 355
MSS-275	(226 to 275) HP	(170 to 205) KW	570A / 300A	450 x 355 x 355

Features:

- ❖ Suitable for 3 phase AC Induction motor up to 205KW (275HP)
- ❖ Semikron make SCR modules (SKKT series)
- ❖ Reduces starting current
- ❖ Motor connection for both 3 wire close delta (In line) and 6 wire open delta (in-side line)
- ❖ User settable jump start and soft start / ramp time
- ❖ Accepts start and stop command from external potential free contact
- ❖ Over load trip facility and built in motor protection
- ❖ Contactor bypass output and Fault output
- ❖ Easy to install and maintain



MSS-015

Description:

A **motor soft starter** is a device used with AC electrical motors to temporarily reduce the load and torque in the power train and electric current surge of the motor during start-up. This reduces the mechanical stress on the motor and shaft, as well as the electrodynamic stresses on the attached power cables and electrical distribution network, extending the lifespan of the system.

To gradually accelerate the speed of AC 3 phase induction motor it is required to feed increasing voltage to the motor and such behavior is only possible by connecting SCRs in series with the motor. The SCRs are controlled by MSST-15 firing card to generate the firing pulses giving the effect of soft start. Libratherm offers ready to use motor soft starter MSS-XX for 3 phase induction motor. User has access to set the starting voltage to create the torque and to set the soft start time. For over load trip, the feedback it taken from internal CT to monitor the load current and to generate the trip contact in case of over load condition. Once the motor achieves full RPM, it is not required to pass the current through the SCRs and hence these SCRs can be bypassed using external bypass contactor. The bypass command is available in the form of potential free contact, once the full speed is achieved as indicated by TOR LED. The START/STOP/RESET push buttons are accessible from front and parallel remote connections are available only for START/STOP to the user for external controls.

The soft starter is built using Libratherm make thyristor firing card MSST-15, suitably rated back to back connected SCR modules (with electrically isolated base)- mounted on the forced air cooled Aluminum extruded heat sink, with copper/aluminum bus bars for incomer and motor connections. SCR modules are protected by thermal cutouts (Thermistors), RC-snubber and MOVs. The entire assembly is mounted in MS powder coated enclosure, which in turn can easily be mounted inside the closed control panel as per the user's requirement.

Libratherm MSS-XX series of motor soft starters can be used for conveyors, pumps, elevators, winders, compressors or any other machines operating using 3 phase AC motors and requires frequent or occasional but smooth start and stop operations.

Technical Specifications:

Configuration	Three phase close delta (In Line) or open delta (Inside Delta)
Control Action	Phase angle control (self - synchronized)
Control Switches	Front panel push button switches for Start/Stop to start and stop the motor. Reset push button switch to use in case of overload trip condition. (Optionally – the control switch connections can be given on the terminals for external remote operation)
Incomer Supply	415VAC/440VAC @ 50Hz. (690VAC – optional)
Output	0 to 415/440VAC 3 phase variable voltage to achieve full speed in max. 10-20 Sec.
Smooth Control	Adjustable Ramp Up Time for soft Increase of output voltage.
Motor Protection	Motor protection against over load, phase failure and phase reversal. Feedback is taken from built in current transformers.
Settings	For adjusting ramp or soft start time and jump start voltage level. (internally fixed – but accessible to user for fine adjustments)
LED Indications	For Power ON, External Fault, Bypass, Over load Trip, Top of Ramp.
Relay Outputs (DO)	For Bypass relay, Fault Relay (Change over contacts)
Load type	Suitable for both 3 phase squirrel cage Induction motor and Slip ring motor.
Aux. Supply Voltage	230 VAC +/- 10%, 50/60 Hz. Max – 10VA
Size in mm	As given in above table

Note: Technical specification and physical dimensions are subject to revision due to design upgradation.

