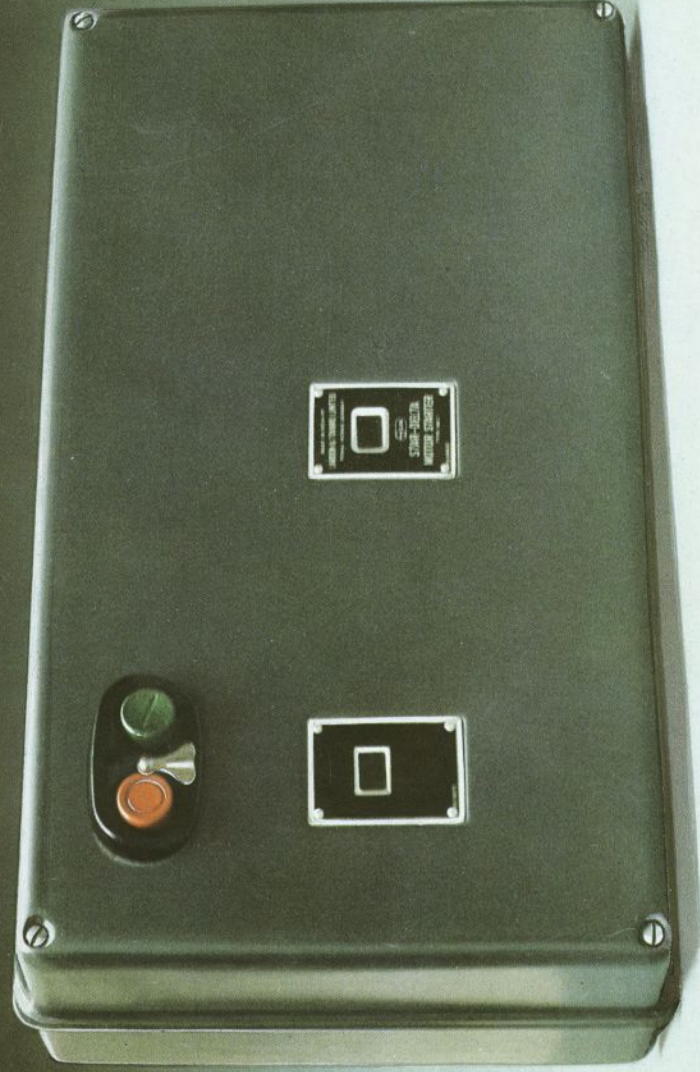


LT-LK Type MK1 Star-Delta starters

Overload and undervoltage protection for
motors up to 12.5 hp



Quality features for convenient operation

LT-LK MK1 Star-Delta Starters are available in two designs: Fully Automatic and Semi-Automatic.

Fully Automatic

The motor starts in 'Star' when the green START button is pressed. Change over to 'Delta' is automatic, controlled by an adjustable thermal timer incorporated in the starter.

Semi-Automatic

The motor starts in 'Star' when the START button is pressed. This button must be released only after the motor picks up speed. On releasing it, connections change over to 'Delta'.

Construction features and performance in the two designs are identical.

Construction

LT-LK MK1 Star-Delta Starters have three MK1 contactors and one triple pole bimetallic thermal overload relay suitably wired and interconnected.

Contact System

The contactor consists of a fixed contact system with a magnetic core and solenoid coil, and a moving contact system with armature. These air break contactors are of bounce-free double break design with silver contact tips. Springs used are of stainless steel and contacts are tested for millions of operations.

Overload Protection

The triple pole bimetallic thermal overload relay is

of the hand reset type. It unmistakably indicates overload. A temperature compensation device prevents the relay from being affected by variation in ambient temperature. Housed in a bakelite enclosure, the entire relay unit is accurately calibrated and individually tested on an automatic test bench. Setting can be adjusted by means of a pointer. Relays are available in different ranges to suit motors up to 12.5 hp.

Undervoltage Protection

Under voltage protection is provided by the coil of the contactor. Machine wound, vacuum impregnated and baked, LT-LK coils are tested for inter-turn short circuit. They undergo a 4000 V impulse test.

Coils suitable for the following ac 50 cycles voltages are available:

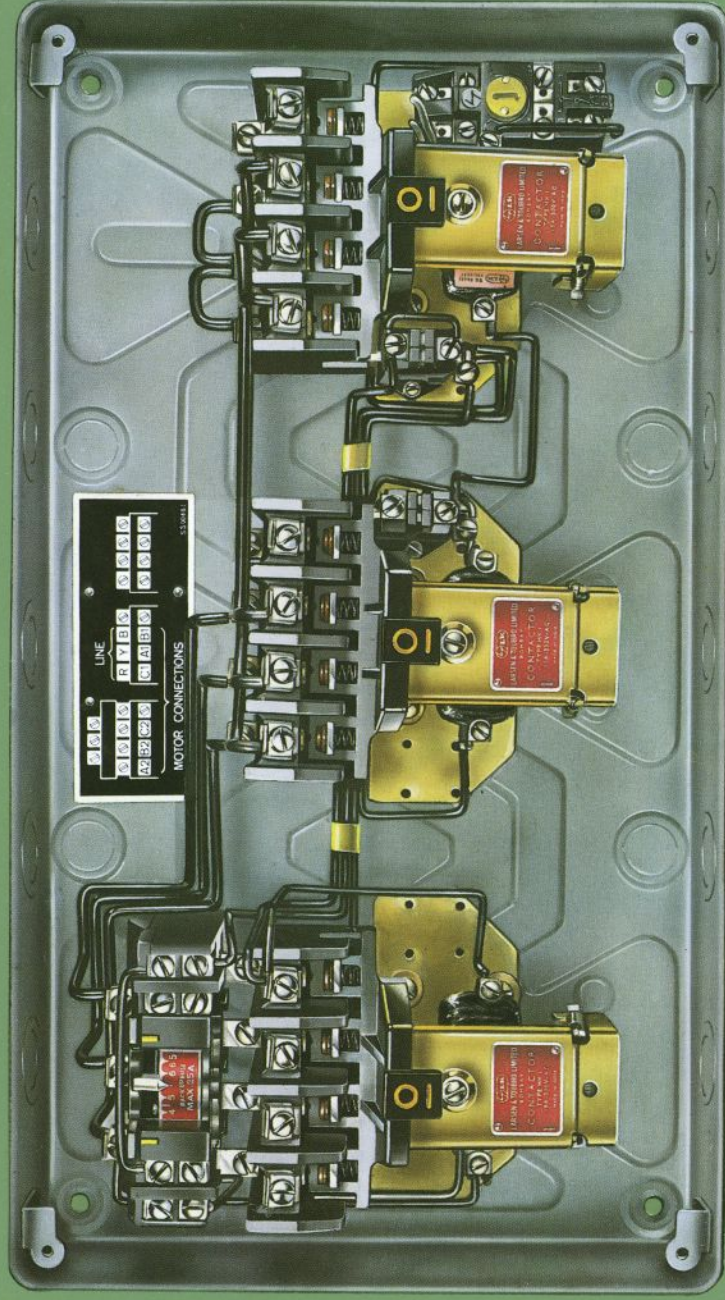
110V, 220V, 230/250V, 360V, 380V, 400/440V, 500V, 550V.

Push Button

Shrouded START and STOP push buttons are mounted on the front cover. The STOP button which can be latched in the pressed position from outside also acts as the reset button for hand reset of the overload relay.

ON-OFF Indication

Starters are designed with mechanical ON-OFF indicator which is visible through a glass window.



Remote Operation

Star-Delta starters can be operated from remote START, STOP push buttons. The fully automatic type can also be operated through limit switches, float switches, pressure switches, etc.

Protective Enclosure

These starters are available in elegant sheet steel enclosures. The enclosure is dust and vermin proof and has knock-outs at the top and bottom for taking in conduit or screwed packing glands.

The enclosure receives an elaborate surface treatment. This makes it highly anti-corrosive and gives a smooth, elegant finish.

Wiring

Starters are complete with all internal wiring. An anodised aluminium terminal indication plate helps easy identification of terminals for supply lines and motor connections. The front terminals of the contactor can take cables up to 6 mm² and the rear terminals up to 10 mm².

Earthing

Two earthing screws, one at the top and one at the bottom, are provided.

Spares & Accessories

The following readily available spares and accessories make repair and replacement easy:

Auxiliary contact block
 Thermal overload relay
 Set of four moving contacts
 Spares kit without operating coil
 Timer complete with combination coil 400/440V, 230/250V, 380V, 360V or 500V.

Operating coils for 110V, 220V, 230/250V, 360V, 380V, 400/440V, 500V, 550V.

SS 90120
 SS 90035
 SS 90484
 SS 90126
 SS 90225

SS 90043, 044,
 045, 165, 046,
 047, 161, 048.

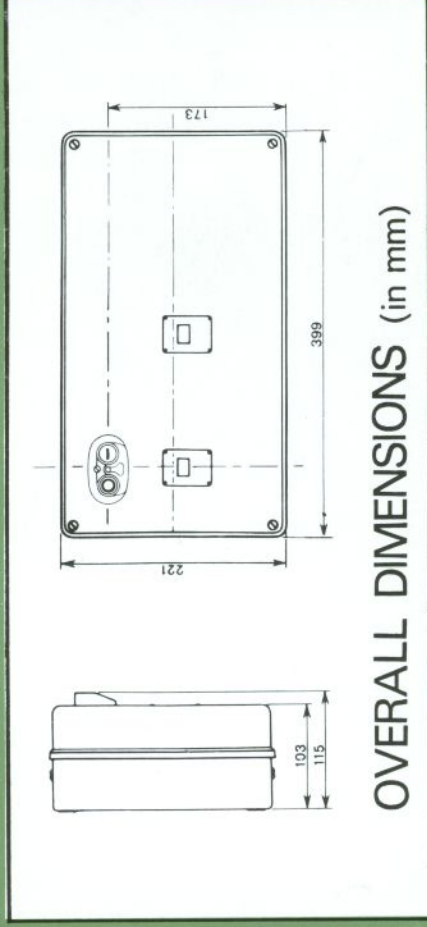
Selection Guide

Fully automatic Star-Delta starter in sheet steel enclosure. SS 96254
 Semi-automatic Star-Delta starter in sheet steel enclosure. SS 96255

All these starters are suitable for motors up to 12.5 hp, 3 phase, 400/440V, 50 Hz supply.

Important

- *When ordering please specify motor hp, voltage, full load current rating and coil voltage.
- *Please note that the overload relay is to be set at the value $I_n/\sqrt{3}$ given in the table since the relay as connected carries only the phase current in delta connected motors.
- *When starting current is heavy in case of heavy torque motors, special Star-Delta starters can be supplied on request.



OVERALL DIMENSIONS (in mm)

Motor Rating 400/440V 3 Phase hp	Full Load Line Current in Amps	$I_L / \sqrt{3}$	Relay Range in Amps	Back-up Fuse Rating			
				Maximum		Minimum	
				Diazed	SWG	Diazed	SWG
1	1.8	1.04	1-1.6	6	32	4	35
1.5	2.6	1.5	1-1.6	6	32	4	35
2	3.5	2.02	1.5-2.5	15	25	6	32
3	5.0	2.88	2.5-4	25	23	6	32
4	6.2	3.58	2.5-4	25	23	10	28
5	7.5	4.32	4-6.5	25	23	10	28
6	9.0	5.2	4-6.5	25	23	10	28
7.5	11.0	6.34	6-10	35	21	15	25
10	14.0	8.08	6-10	35	21	15	25
12.5	18.0	10.4	9-14	35	21	20	24



Switchgear—Standard Products Division

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