

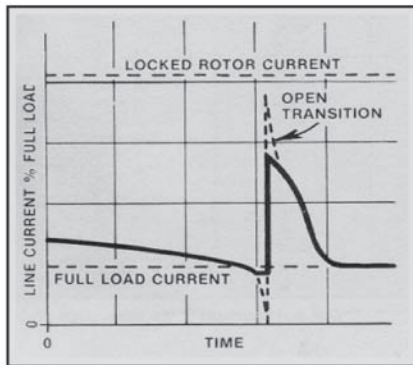
## Full Voltage and Part Winding Starters

**Full Voltage Magnetic Starters** provide the simplest method of starting and stopping AC squirrel cage motors. A full voltage starter connects the motor windings directly to the power line. It consists of magnetically actuated switch and thermal overload relay.

A typical squirrel cage motor when started across-the-line will result in a line current of approximately 6 times full load current as shown in the diagram.

**Part-winding Reduced Voltage Starters** are the simplest type reduced voltage starters.

Part-winding motors have two sets of identical winding which are energized in sequence to reduce the starting inrush current. The two identical windings are operated in parallel. Most (but not all) 230/460 volt motors are suitable for part-winding start is required. During the period when one winding only is energized, a part-winding motor will draw approximately 60-70% inrush current and will develop approximately 45-50% torque.



## Wye-Delta Starters

Wye-Delta motors are similar in construction to standard squirrel cage motors, except that both ends of each of the three (3) windings are brought out to terminals. By using starters having the required number of contacts properly wired, the motor starts in Wye and runs in Delta. This starter can be built as either an open or closed transition device. The closed transition starter requires an extra contactor and resistor bank and are considerably more expensive. By far, the majority of Wye-Delta starters supplied world wide are OPEN transition type.

By starting with Wye connection, line current is reduced to one-third (<sup>1/3</sup>) of the current which would be obtained with a Delta connection.

This starter is frequently applied to unload compressors and other loads that require less than 33% of normal starting torque.

## REDUCED VOLTAGE STARTERS / WYE DELTA COIL & OVERLOAD SUFFIXES

For LS4K-LS18K (3 pole)		
AC	60Hz	50HZ
-G	24	24
-A	120	120
-B	200	200
-C	220	220
-H	277	230
-E	480	380
-F	600	500
<b>DC add \$60 to list</b>		
-MSW	12 VDC	
-NSW	24VDC	
-OSW	48 VDC	
-PSW	110 VDC	
-RSW	220 VDC	

For LS22K-LS55K (3 pole)		
AC	60Hz	50HZ
-G	24	24
-A	120	120
-B	200	200
-C	220	220
-H	277	230
-E	480	380
-F	600	500
<b>DC add \$90 to list</b>		
-NSW	24-28 VDC	
-OSW	42-48 VDC	
-PSW	110-127 VDC	
-RSW	220-250 VDC	

For LS75K-LS375K (3 Pole)	
AC/DC	50/60 Hz + DC
-N	24-28V
-AP	110-127V
-CR	220-250V
-EX	440-500V

### \* Coil Suffix Chart

** Overload Relay Suffix			
O.L. Relay Setting Range		O.L. Relay Setting Range	
Suffix	(Amps)	Suffix	(Amps)
-B	0.16-0.26	-ON	21-26
-C	0.25-0.41	-P	25-32
-D	0.4-0.65	-Q	30-43
-E	0.65-1.1	-QN	42-55
-F	1.1-5	-RN	54-65
-G	1.3-1.9	-SN	64-82
-H	1.8-2.7	-TM	78-97
-I	2.5-4	-TN	90-110
-K	4-6.3	-TT	110-140
-L	5.5-8.5	-U	140-190
-M	8-12	-V	175-280
-N	10-16	-W	200-310
-O	14.5-18	-WT	250-400
-OM	17.5-22	-X	315-500

Discount Schedule ST Modification & Accessories

### DC Coil list adders for reduced voltage starters add 2 speed starters.

#### Reduced Voltage:

YLS4K-18- \$90 Adder  
 YLS22K-55K \$135 Adder  
 YLS75K-37K No Adder  
 WLS22K-45K \$90 Adder  
 WLS750-375K No Adder

#### 2 Speed Starters

2SH/2STLS7K-15K Add \$60  
 2SH/2ST22K-45K Add \$90  
 1SH/1STLS7K-15K Add \$90  
 1SH/1STLS22K-45K Add \$135  
 1SH/1STLS75K-280K No Adder