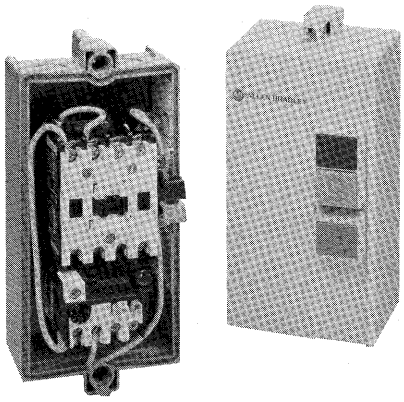
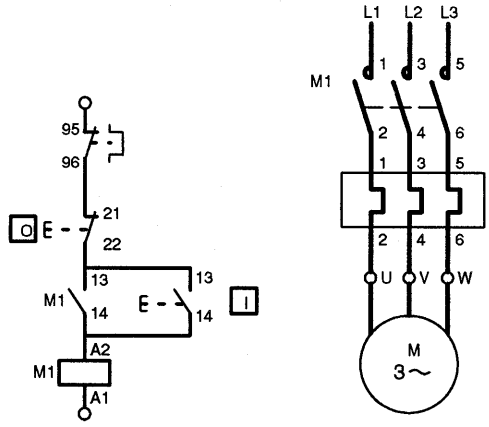
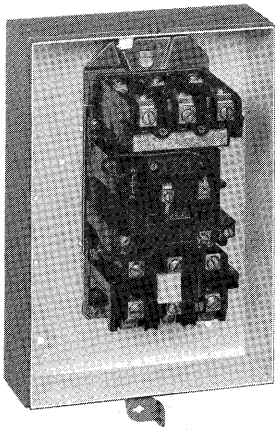
ALLEN-BRADLEY

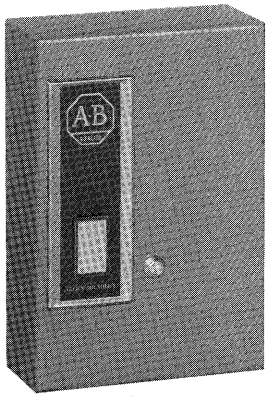
A Global Reference Guide for Reading Schematic Diagrams

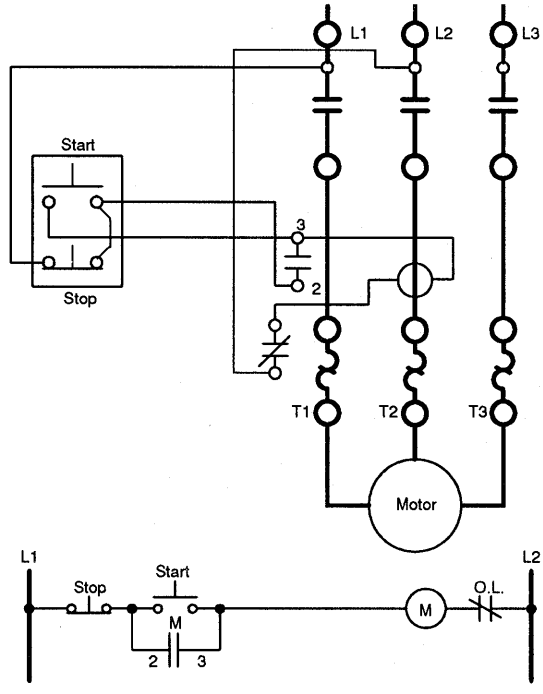
Product Data









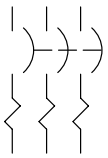
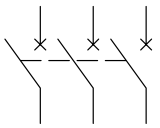
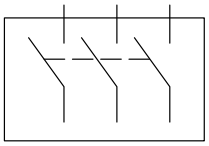
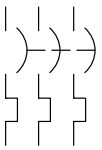
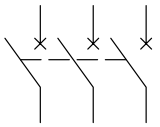
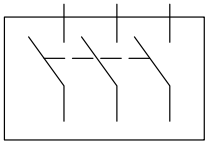
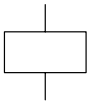
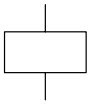


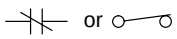
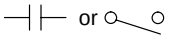
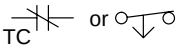
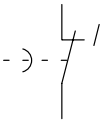
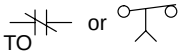
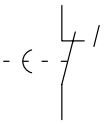
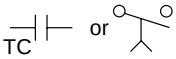
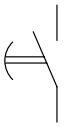
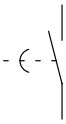
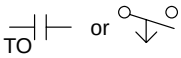
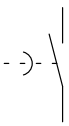
General. With the increasing emphasis on globalization, many industries are now looking to all parts of the world to produce, market and sell their products. Electrical manufacturers are no exception. Since the electrical standards adopted by various nations may vary, the markings and symbols used to describe electrical control products can also vary. Whether it is a complex control system on a machine tool or a simple across-the-line motor starter, the need to recognize and understand these symbols becomes more important. It is possible that products from all parts of the world are being used in any one facility.

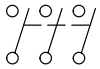
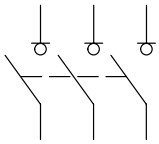
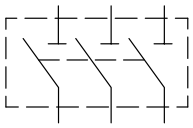
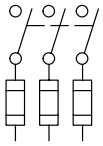
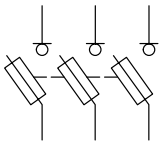
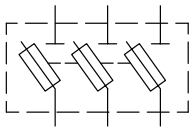
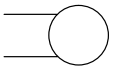
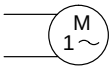
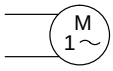
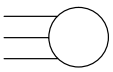
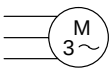
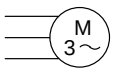
The purpose of this document is to provide a simple cross-reference of common schematic/wiring diagram symbols used throughout various parts of the world. The graphical symbols were taken from the following standards:

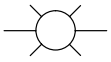
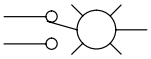
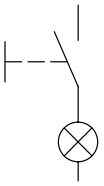
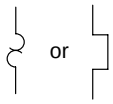
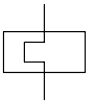
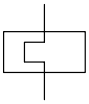
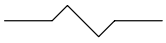
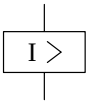
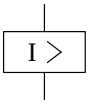
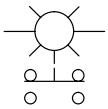
BS 3939.
CENELEC EN 50 013.
DIN 40700 to 40717.
EEMAC E14-3.
IEC 617-1 to 617-8.
NEMA ICS 1.

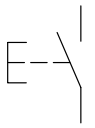
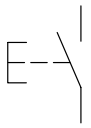
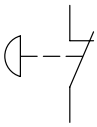
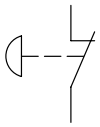
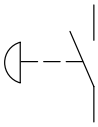
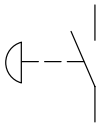
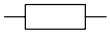
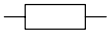
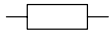
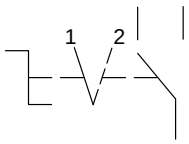
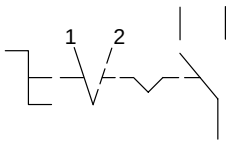
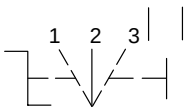
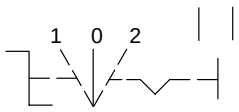
The following tables describe the device and show the symbol by area of usage.

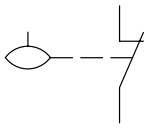
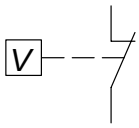
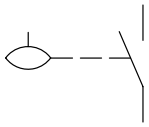
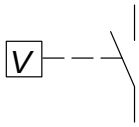
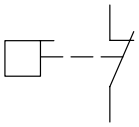
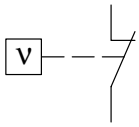
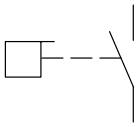
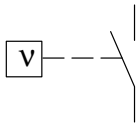
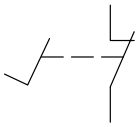
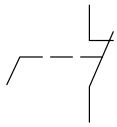
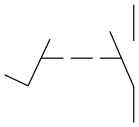
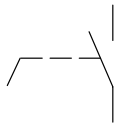
Description		US / Canadian	International / British	German
Capacitor				
Circuit Breaker	Magnetic Only			
	Thermal-magnetic			
Coil				

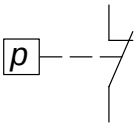
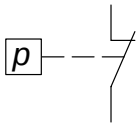
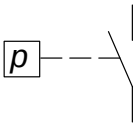
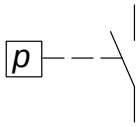
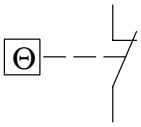
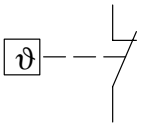
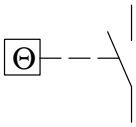
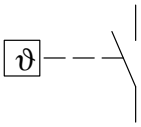
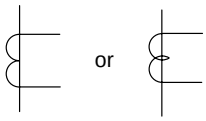
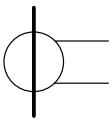
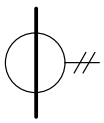
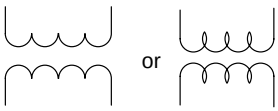
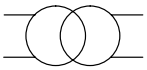
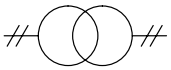
Description		US / Canadian	International / British	German
Basic Contacts	**Normally Closed**			
	Normally Open			
Time Delay Contacts	**N.C., Timed Closed**			
	N.C., Timed Open			
	N.O., Timed Closed			
	N.O., Timed Open			

Description		US / Canadian	International / British	German
Disconnect Switch	**Non-Fused**			
	Fused			
Fuse				
Ground				
Induction Motor	**Single Phase**			
	Three Phase			

Description		US / Canadian	International / British	German
Lights, Indicating	**Standard**	 Insert color code inside symbol	 Insert color code next to symbol	 Insert color code next to symbol
	Push-To-Test	 Insert color code inside symbol		 Insert color code next to symbol
Meters		 Insert function code inside symbol	 Insert function code inside symbol	 Insert function code inside symbol
Overload Relay	**Thermal Element**			
	Magnetic Element			
Push Button	**Illuminated**			
	Momentary (N.C.)			

Description		US / Canadian	International / British	German
Push Button	Momentary (N.O.)			
	Mushroom Head (N.C.)			
	Mushroom Head (N.O.)			
Resistor				
Selector Switch	2 Position		Letter Sym / Position: 1 2 A: X B: X		
	3 Position		Letter Sym / Position: 1 2 3 A: X B: X		

Description		US / Canadian	International / British	German
Switches	Float (N.C.)			
	Float (N.O.)			
	Flow (N.C.)			
	Flow (N.O.)			
	Foot (N.C.)			
	Foot (N.O.)			
	Limit (N.C.)			

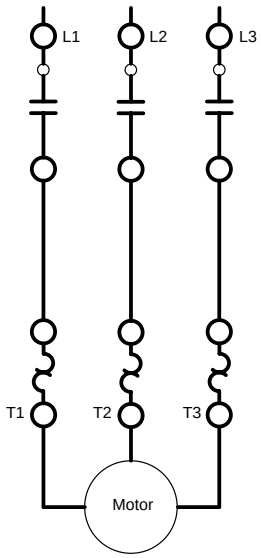
Description		US / Canadian	International / British	German
Switches	Limit (N.O.)			
	Pressure (N.C.)			
	Pressure (N.O.)			
	Temperature (N.C.)			
	Temperature (N.O.)			
Transformer	Current			
	Voltage			

Common Schematic Diagrams

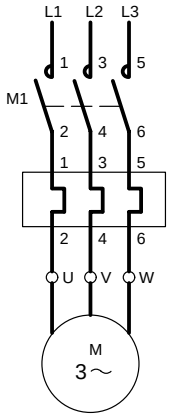
Across-the-Line Non-Reversing Starters with Start– Stop Push Buttons

Power Circuit

NEMA

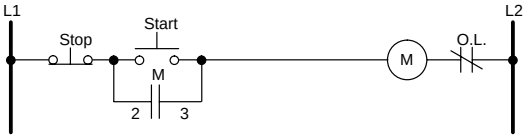


IEC

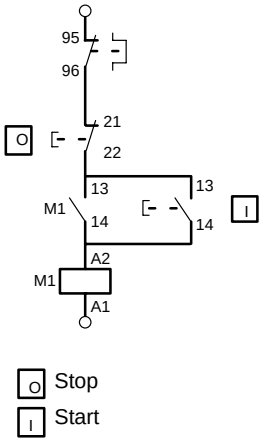


Control Circuit

NEMA



IEC

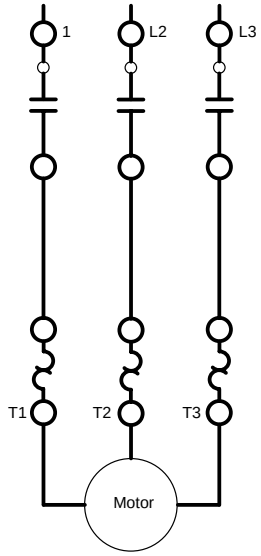


Common Schematic Diagrams

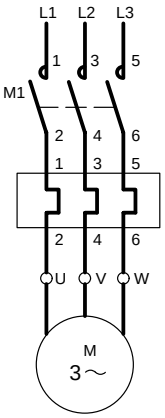
Across-the Line Non-Reversing Starters with Hand-Off-Auto Selector Switch

Power Circuit

NEMA

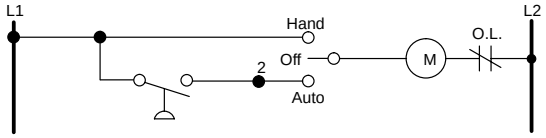


IEC

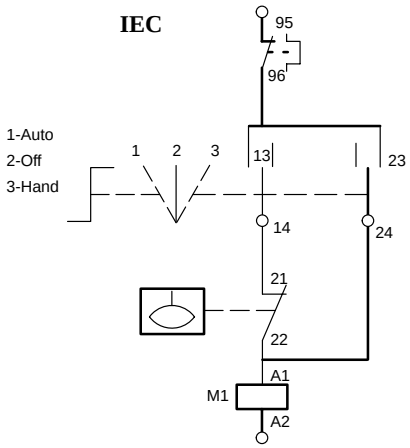


Control Circuit

NEMA



IEC

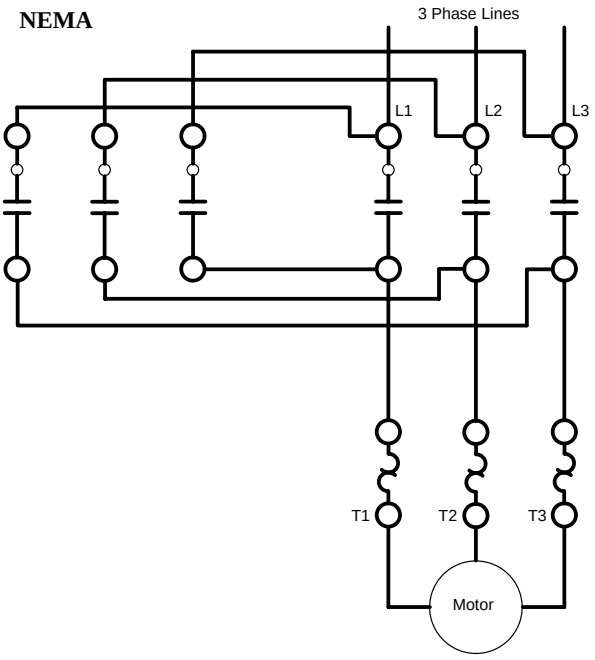


Common Schematic Diagrams

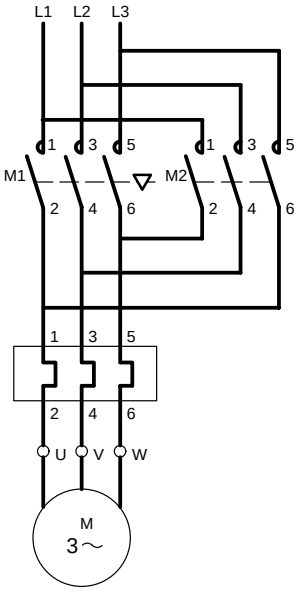
Across-the-Line Reversing Starters

Power Circuit

NEMA

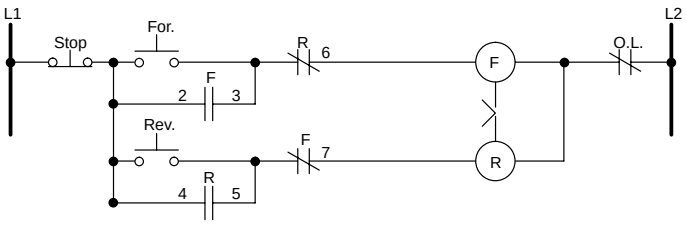


IEC

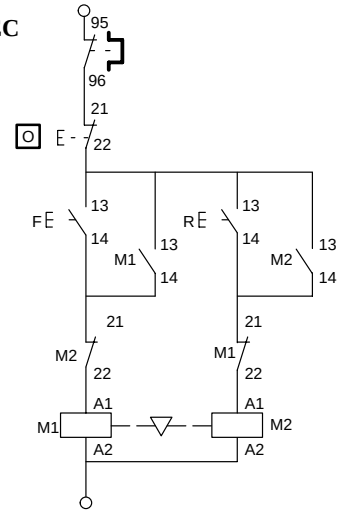


Control Circuit

NEMA



IEC

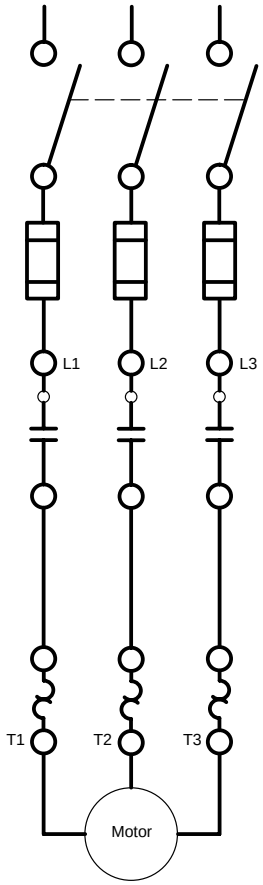


Common Schematic Diagrams

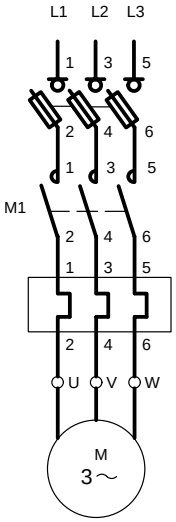
Combination Starter with Fused Disconnect Switch

Power Circuit

NEMA

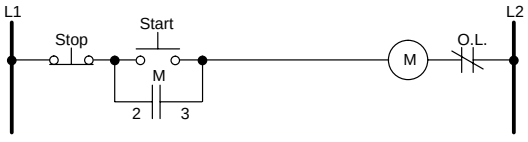


IEC

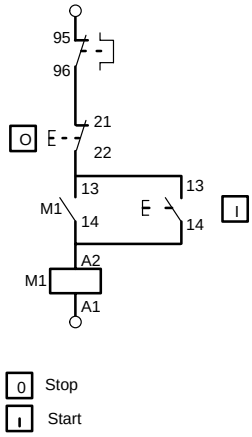


Control Circuit

NEMA



IEC



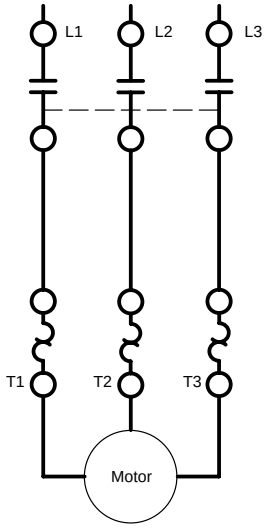
Common Schematic Diagrams

Manual Starter

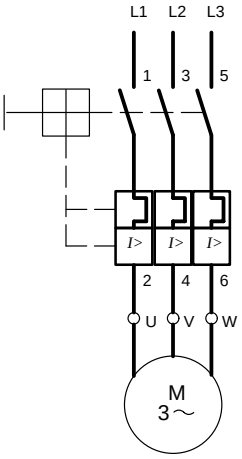
1

Power Circuit

NEMA



IEC



ALLEN-BRADLEY
A ROCKWELL INTERNATIONAL COMPANY

A subsidiary of Rockwell International, one of the world's largest technology companies, Allen-Bradley meets today's automation challenges with over 85 years of practical plant floor experience. More than 11,000 employees throughout the world design, manufacture and apply a wide range of control and automation products and supporting services to help our customers continuously improve quality, productivity and time to market. These products and services not only control individual machines, but also integrate the manufacturing process while providing access to vital plant floor data that can be used to support decision–making throughout the enterprise.

With offices in major cities worldwide.

WORLD HEADQUARTERS
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382–2000
Telex: 43 11 016
FAX: (1) 414 382–4444

EUROPE/MIDDLE EAST/ AFRICA HEADQUARTERS
Allen–Bradley Europe B.V.
Amsterdamseweg 15
1422 AC Uithoorn
The Netherlands
Tel: (31) 2975/43500
Telex: (844) 18042
FAX: (31) 2975/60222

ASIA/PACIFIC HEADQUARTERS
Allen–Bradley (Hong Kong) Limited
Room 1006, Block B, Sea View Estate
2-8 Watson Road
Hong Kong
Tel: (852) 887-4788
Telex: (780) 64347
FAX: (852) 510-9436

CANADA HEADQUARTERS
Allen–Bradley Canada Limited
135 Dundas Street
Cambridge, Ontario N1R 5X1
Canada
Tel: (1) 519 623–1810
FAX: (1) 519 623–8930

LATIN AMERICA HEADQUARTERS
Allen-Bradley
1201 South Second Street
Milwaukee, WI 53204 USA
Tel: (1) 414 382–2000
Telex: 43 11 016
FAX: (1) 414 382–2400

Publication 100-2.10 – December 1992
Supersedes Publication 100–2.10 – September 1992