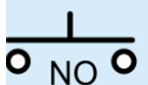
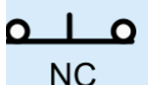
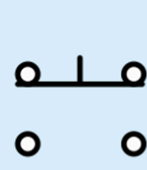

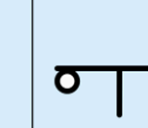
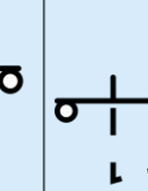

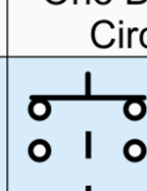
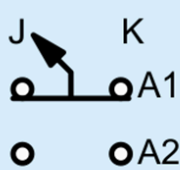
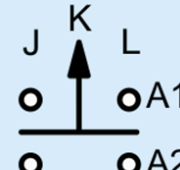
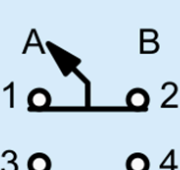


### Pushbuttons


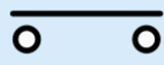


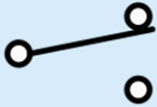
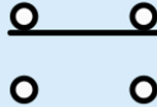
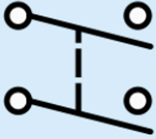
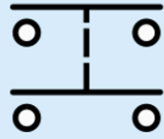
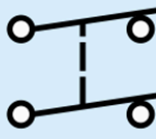
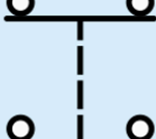
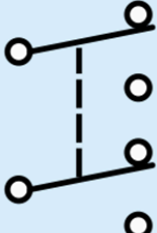
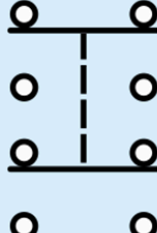
Momentary Contact				Maintained Contact		Illuminated
Single Circuit	Double Circuit	Mushroom Head	Wobble Stick	Two Single Circuits	One Double Circuit	
 NO  NC						

### Selector Switch

2-Position	3-Position	2-Position Selector Push Button																																	
 <table border="1" data-bbox="300 1060 446 1228"> <tr><td>J</td><td>K</td></tr> <tr><td>A1</td><td>I</td></tr> <tr><td>A2</td><td>I</td></tr> </table> <p>I = contact closed</p>	J	K	A1	I	A2	I	 <table border="1" data-bbox="706 1060 852 1228"> <tr><td>J</td><td>K</td><td>L</td></tr> <tr><td>A1</td><td>I</td><td></td></tr> <tr><td>A2</td><td></td><td>I</td></tr> </table> <p>I = contact closed</p>	J	K	L	A1	I		A2		I	 <table border="1" data-bbox="1161 1060 1502 1228"> <thead> <tr> <th>Selector Position</th> <th>Push Button</th> <th>Contacts 1-2</th> <th>3-4</th> </tr> </thead> <tbody> <tr> <td rowspan="2">A</td> <td>Free</td> <td>I</td> <td></td> </tr> <tr> <td>Depressed</td> <td></td> <td>I</td> </tr> <tr> <td rowspan="2">B</td> <td>Free</td> <td></td> <td>I</td> </tr> <tr> <td>Depressed</td> <td></td> <td>I</td> </tr> </tbody> </table> <p>I = contact closed</p>	Selector Position	Push Button	Contacts 1-2	3-4	A	Free	I		Depressed		I	B	Free		I	Depressed		I
J	K																																		
A1	I																																		
A2	I																																		
J	K	L																																	
A1	I																																		
A2		I																																	
Selector Position	Push Button	Contacts 1-2	3-4																																
A	Free	I																																	
	Depressed		I																																
B	Free		I																																
	Depressed		I																																

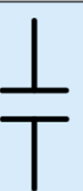
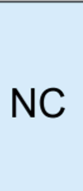

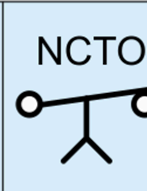
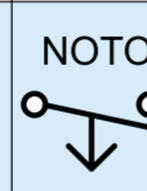
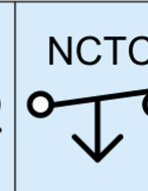






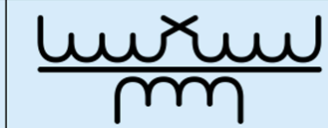


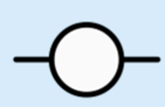

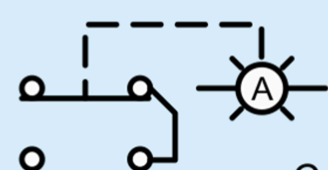
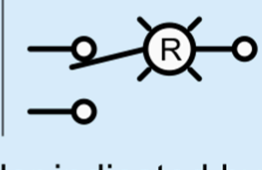

### Wiring

Not Connected	Connected	Power Conductor	Control Conductor	Wiring Terminal	Ground	Connections
						Mechanical  Mechanical Interlock

Supplementary Contact Symbols						Terms
SPST NO		SPST NC		SPDT		SPST: Single-Pole Single-Throw  SPDT: Single-Pole Double-Throw  DPST: Double-Pole Single-Throw  DPDT: Double-Pole Double-Throw  NO Normally Open NC Normally Closed
Single Break	Double Break	Single Break	Double Break	Single Break	Double Break	
						
DPST, 2 NO		DPST, 2 NC		DPDT		
Single Break	Double Break	Single Break	Double Break	Single Break	Double Break	
						

# Motor Controls Session 1

## Standard Elementary Diagram Symbols

Contacts						Overload Relays	
Instant Operating		Timed Contact				Overload Relays	
Normally Open	Normally Closed	Contact action is retarded after coil is:				Thermal	Magnetic
		Energized		De-energized			
NO 	NC 	NOTC 	NCTO 	NOTO 	NCTC 		
Transformers					Inductors		
Iron Core	Air Core	Auto	Current	Dual Voltage	Iron Core	Air Core	
							
Coils			Pilot Light				
	Solenoid		Push-to-test		Non Push-to-test		
							
Color indicated by letter							