

CONTROL SYMBOLS – WIRING DIAGRAMS

Power	Symbol	Relays	Symbol	Switches	Symbol	Operators	Symbol	Elements	Symbol																						
Ground		Relay		Switch NO SPST		Time delay NO		Resistor																							
Ground chassis		Relay Coil		Switch NO SPDT		Time delay NO		Capacitor																							
Fuse		Thermal relay		Switch NO DPST		Liquid level		Inductor																							
Circuit breaker		Relay Contact NO		Pushbutton NO		Gas flow		Transformer Air core																							
Disconnect 3-phase		Relay Contact NC		Pushbutton NC		Liquid flow		Transformer Iron core																							
Motor 1-phase		Label relay coil and contact with same notation, i.e. R1 or TD1		Pushbutton DPDT		Temperature		Thermostat																							
Motor 3-phase		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Source</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>Alternating current</td> <td></td> </tr> <tr> <td>Direct current</td> <td></td> </tr> <tr> <td>Battery</td> <td></td> </tr> <tr> <td>Thermo-couple</td> <td></td> </tr> </tbody> </table>	Source	Symbol	Alternating current		Direct current		Battery		Thermo-couple		Switch selector		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Abbrev</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>NO</td> <td>normally open</td> </tr> <tr> <td>NC</td> <td>normally closed</td> </tr> <tr> <td>SPST</td> <td>single pole single throw</td> </tr> <tr> <td>SPDT</td> <td>single pole double throw</td> </tr> <tr> <td>DPST</td> <td>double pole single throw</td> </tr> <tr> <td>DPDT</td> <td>double pole double throw</td> </tr> </tbody> </table>	Abbrev	Description	NO	normally open	NC	normally closed	SPST	single pole single throw	SPDT	single pole double throw	DPST	double pole single throw	DPDT	double pole double throw	Delta 3-phase	
Source	Symbol																														
Alternating current																															
Direct current																															
Battery																															
Thermo-couple																															
Abbrev	Description																														
NO	normally open																														
NC	normally closed																														
SPST	single pole single throw																														
SPDT	single pole double throw																														
DPST	double pole single throw																														
DPDT	double pole double throw																														
Interlock safety				HOA 3-position		Wye 3-phase																									
Surge protector																															
Light Pilot																															

Function	Diagram
<p style="text-align: center;">Start / Stop Motor Control</p> <p>Press start to energize motor relay M. Contact M latches around start. Stop breaks circuit. Thermal overload relay O/L in motor circuit senses current. If high, then it opens contact O/L to stop.</p>	
<p style="text-align: center;">Start / Stop With Indicator</p> <p>Press start to energize relay M. Contact M latches around start. Stop breaks circuit. Thermal overload relay O/L senses current. If high, then it opens contact O/L to stop. Another contact M turns on red indicator</p>	
<p style="text-align: center;">Switch Time Delay</p> <p>Normally closed contact R1 energizes indicator light Red. Closing Switch energizes relay R1. Contact R1 energizes time delay relay TD2. NC contact R1 opens to turn off red light. After time delay, contact TD2 closes to turn on Green indicator.</p>	