

Motor Control by Relay

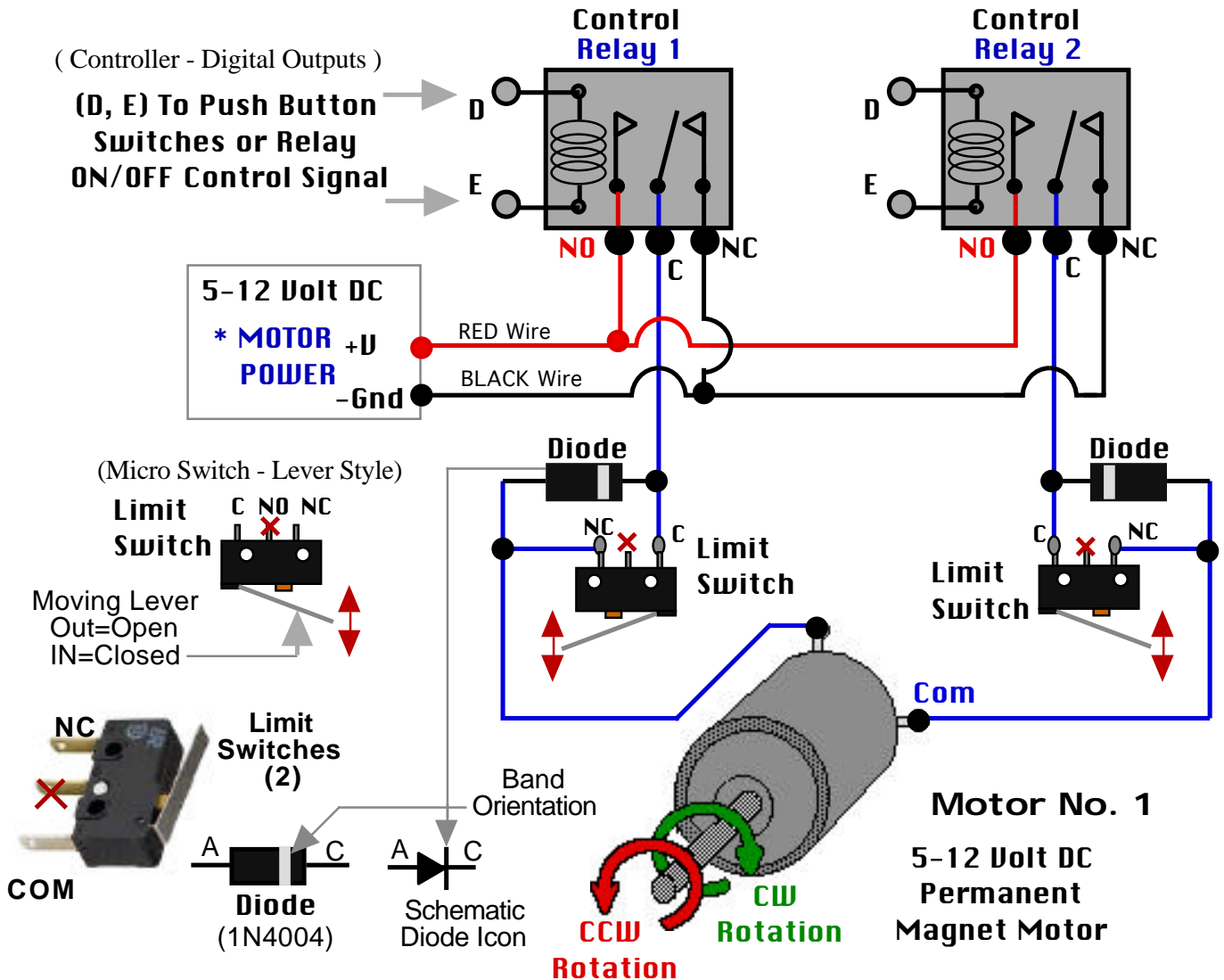
Motor Rotation Control with Limit Switches

Dual Relay Motor Control

MOTOR CW-CCW ROTATION SETUP

Interface controlled setup that operates DC Permanent Magnet Motors with CW (Clockwise) and CCW (Counter Clockwise) rotation control.

C, COM = Common Connection
NO = Normally Open Connection
NC = Normally Closed Connection



* NOTE:

You can operate several motors at the same time with different voltage requirements. Each pair of relays can be connected to a motor and power supply of different voltages. This method allows 5 volt DC motors to be controlled at the same time that 12 volt DC motors are being used.

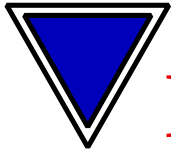
The amount of voltage applied to the Motor Power +V and -Gnd connection for each set of motor relays is determined by the motor voltage. A 5 volt motor would require a 5 volt supply. A 12 volt motor would require a +12 volt supply, etc.

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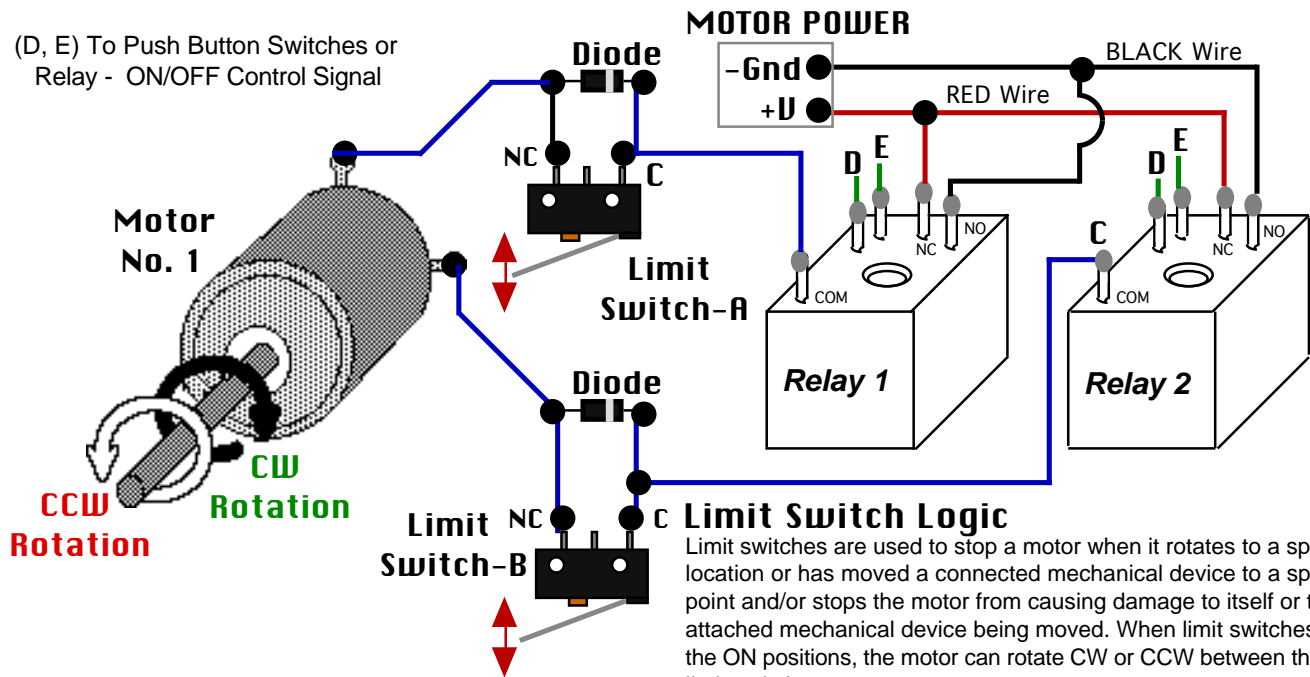
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Motor Control by Relay

(D, E) To Push Button Switches or Relay - ON/OFF Control Signal



Limit Switch Logic

Limit switches are used to stop a motor when it rotates to a specific location or has moved a connected mechanical device to a specific point and/or stops the motor from causing damage to itself or the attached mechanical device being moved. When limit switches are in the ON positions, the motor can rotate CW or CCW between the two limit switches.

Limit Switch Logic

	Switch A	Switch B	Motor Status
Motor No. 1	ON	ON	CCW or CW
	OFF Diode	ON	CW
	ON	OFF Diode	CCW

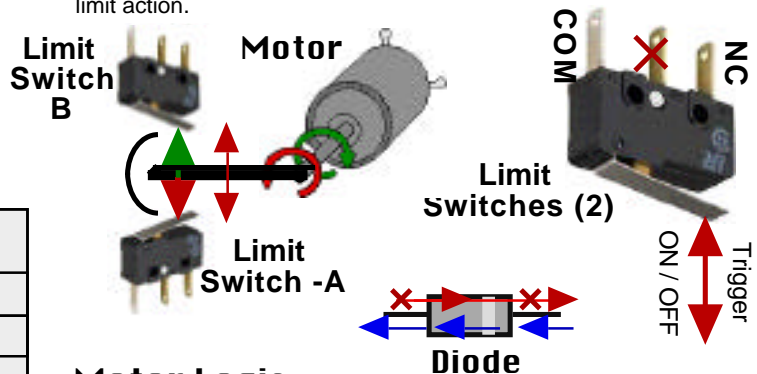
NOTE:

Limit Switches are wire as a Normal Closed connection (NC). Power will flow through the switch until it has been activated to the Open position (NO). On open position NO power will flow to the connected device.

Example 1: Motor is rotating left (CCW) and hits limit switch. Limit switch-A has now been activated, (Turned OFF) the motor has stopped rotating to the left (CCW). No power is going to the motor now. To move motor to the right (CW) the diode on Limit Switch -A now must conducts current past the open switch to allow the motor to activate rotation movement to the right (CW). The connected diode completes the circuit, allowing current to flow one way. When the move right (CW) command is received, (Relay activated) motor will move CW, since diode is completing the circuit needs to power the motor. As the motor moves away from the hit limit switch - A, the switch is reset to the normal closed position, allowing current to flow back through the switch, bypassing the diode now and setting the switch for the next hit limit action.

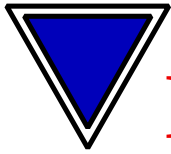
Motor Relay / Switch Logic

	Relay 1	Relay 2	Motor Status
Motor No. 1	OFF	OFF	STOP
	OFF	ON	CCW
	ON	OFF	CW
	ON	ON	STOP



Motor Logic

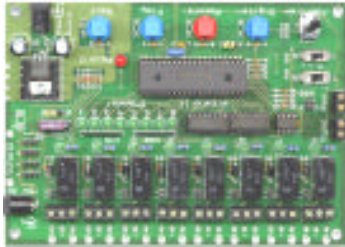
This connection setup prevents the possibility of both relays from shorting back into the power supply when both switched on.



Motor Control by Relay

Application Example

WIZARD 2 Controller

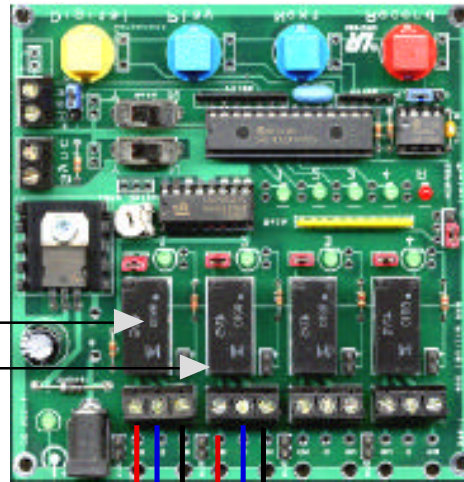


(Motor 1- Relays 1,2)
(Motor 2- Relays 3,4)
(Motor 3- Relays 5,6)
(Motor 4- Relays 7,8)

4 Motors

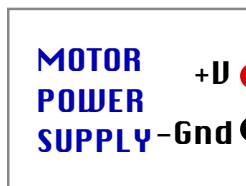
WIZARD 4 Controller

Programmable Relays
(Motor 1- Relays 1,2)
(Motor 2- Relays 3,4)

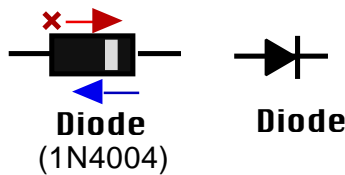
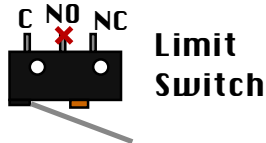


Relay 1
Relay 2

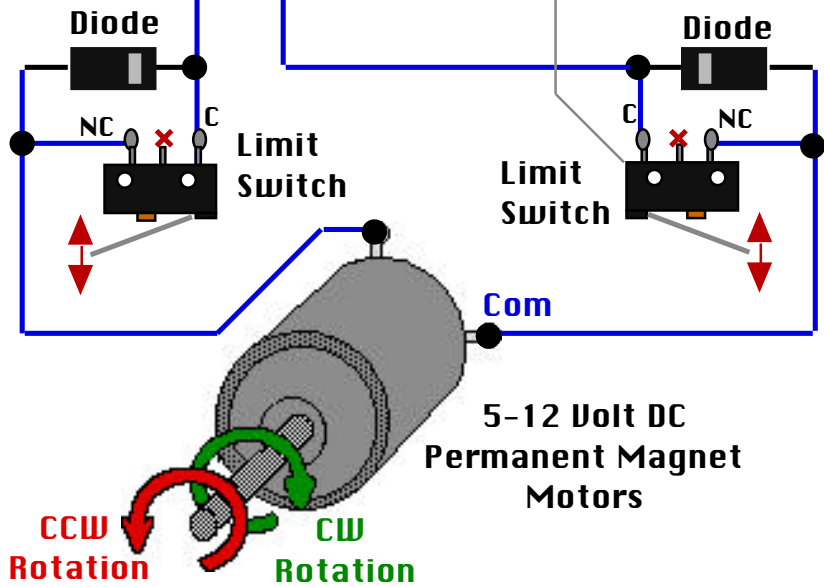
NO
C
NC
C
NO



(Micro Switch - Lever Style)

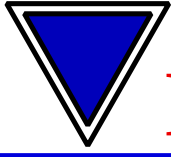


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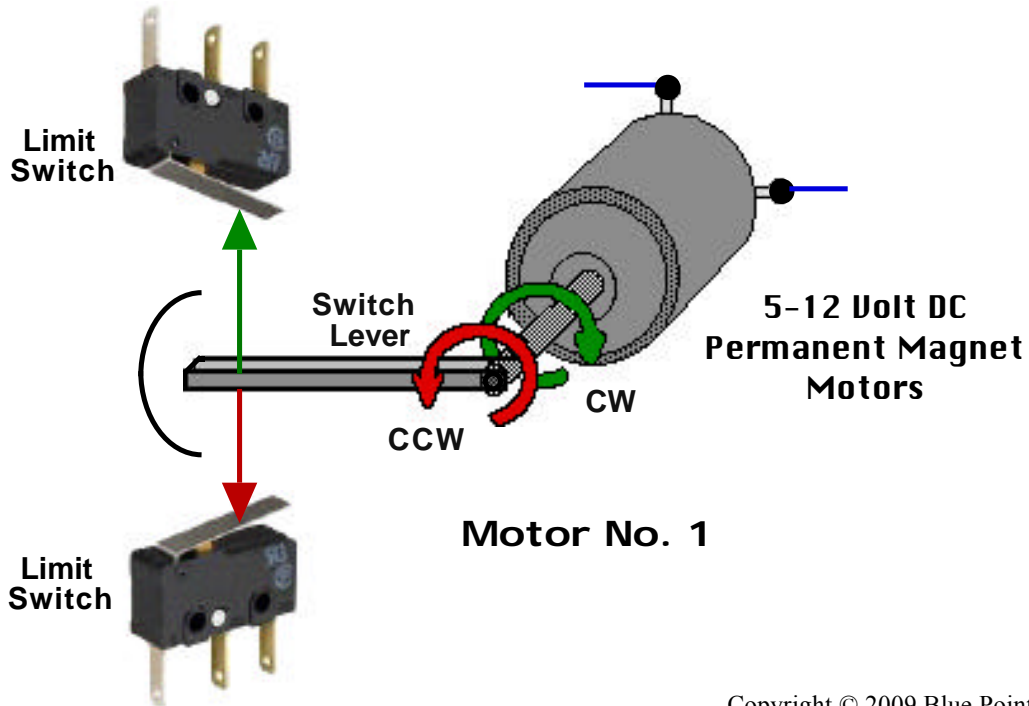
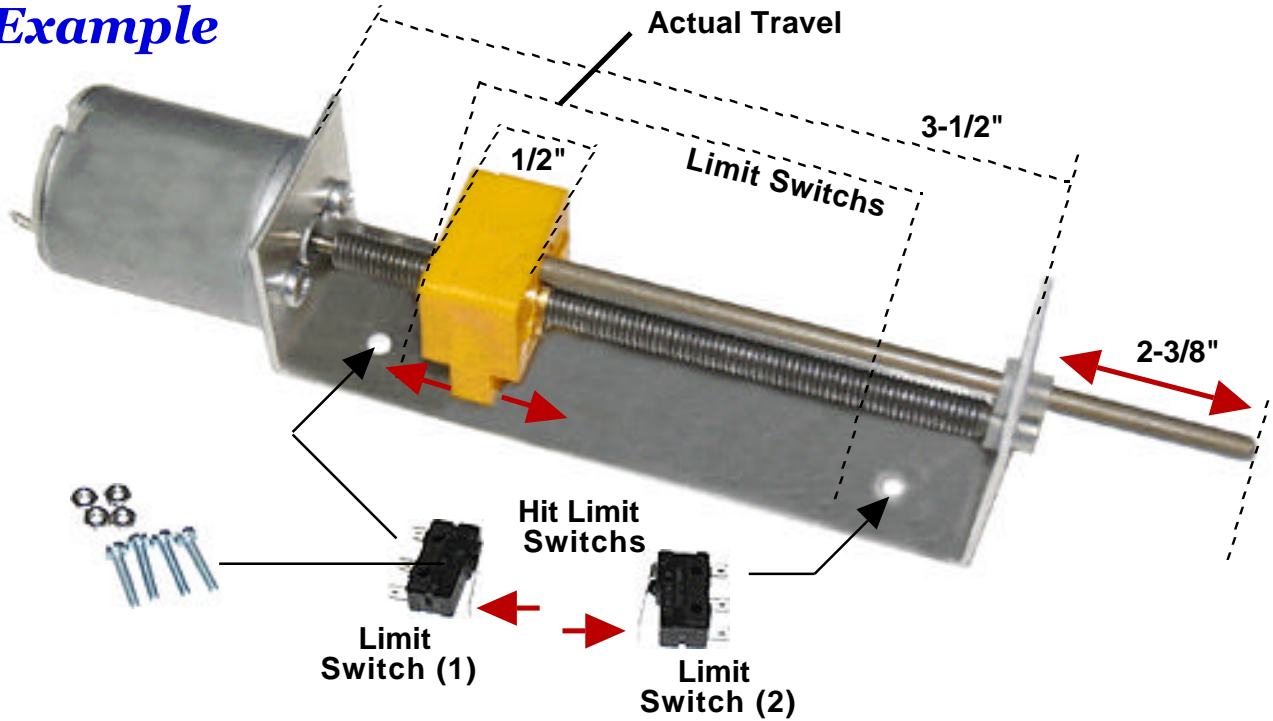
Motor No. 1

Motor No. 2



Motor Control by Relay

Application Example



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