



Title: **Pushbuttons**

Job: 1

Course: Intro to Automation

Unit: Manual Motor Control

CLO: 2

Name _____ Grade _____ Date _____

Objectives

1. Student shall identify the function of a "momentary" pushbutton.
2. Student shall define the terms "normally-open" and "normally-closed".
3. Student shall interpret NEMA symbols for pushbuttons and pilot lights.
4. Student shall establish the purpose and use of the training panel.
5. Student shall practice using tools to wire the training panel.

Assessment

Students shall demonstrate a comprehension of the objectives listed above by scoring a minimum of 75% on this Job. Grading shall be based on the Manual Motor Control rubric.

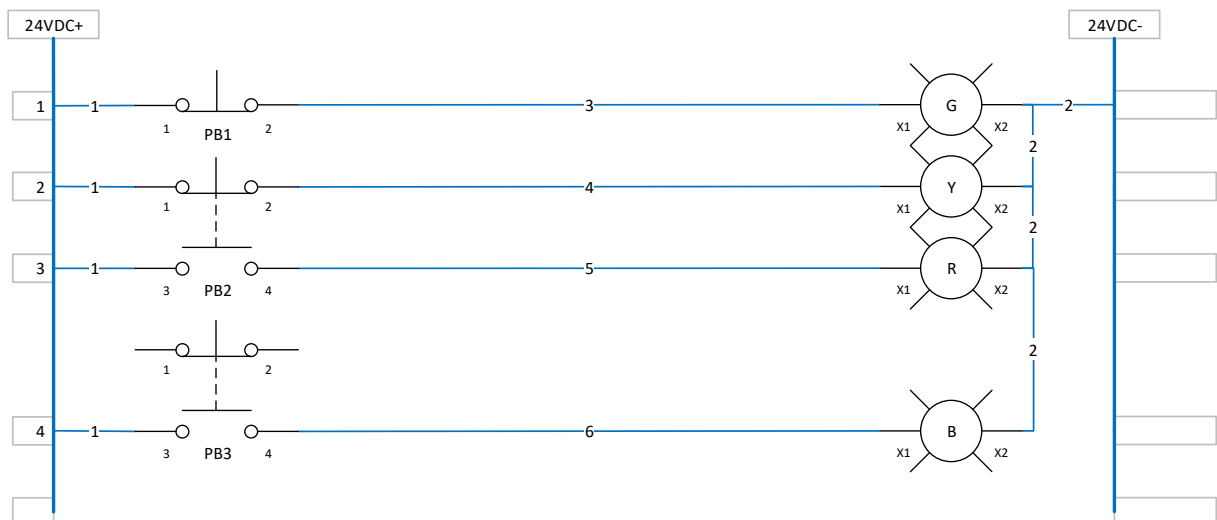
Devices

Inputs		
<i>Device</i>	<i>Description</i>	<i>Symbol</i>
Normally Closed Pushbutton	Test Button	TEST1
Normally Dual Action Pushbutton	Test Button	TEST2
Normally Open Pushbutton	Test Button	TEST3
Outputs		
<i>Device</i>	<i>Description</i>	<i>Symbol</i>
Green Pilot Light	Test Light	GREEN
Red Pilot Light	Test Light	RED
Yellow Pilot Light	Test Light	YELLOW
Blue Pilot Light	Test Light	BLUE

Instructions

Wire the circuit shown below. Before powering up your circuit, get approval from your instructor. After approval, you may energize your circuit and answer the questions below the schematic.

Circuit



1. Without pressing any pushbuttons record the light sequence.

Green Yellow Red Blue

2. Press and hold PB1. Record the light sequence.

Green Yellow Red Blue

3. Release PB1 and press and hold PB2. Record the light sequence.

Green Yellow Red Blue

4. Release PB2 and press and hold PB3. Record the light sequence.

Green Yellow Red Blue

A "state" is a term used to describe the condition of a component. For instance, a simple residential light switch has two states, OFF and ON. We simplify this by saying 0 and 1, where 0 is OFF and 1 is ON. Review the data collect in question 1 through 4 and answer the following questions.

5. In this circuit, how many actions does PB1 have? ____ Can any more actions be added? ____
6. In this circuit, how many actions does PB2 have? ____ Can any more actions be added? ____
7. In this circuit, how many actions does PB3 have? ____ Can any more actions be added? ____
8. Discuss your findings with your instructor.
9. Render the schematic above using a CAD type software package on a classroom PC. Once complete, post the schematic to your student network folder using filename MMC Job 01 – *name.ext* (ext would be the extension of the software you are using to render the schematic)