Title: **ESTOP and Selector Switches** Job: 2

Course: Intro to Automation Unit: Manual Motor Control CLO: 2

Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Grade \_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Objectives**

1. Student shall identify the function of a “latching” switch.
2. Student shall recognize a mushroom head pushbutton and its use.
3. Student shall contrast the difference between a two-position selector switch and a three-position selector switch.
4. Student shall interpret NEMA symbols for a mushroom-head pushbutton and both selector switches.

**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.

**Materials**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Inputs | | | Outputs | | |
| Q | Input Device | Function | Q | Input Device | Function |
| 1 | Mushroom head PB |  | 1 | Green Pilot Light |  |
| 1 | 3P selector switch |  | 1 | Yellow Pilot Light |  |
| 1 | 2P selector switch |  | 0 | Red Pilot Light |  |
| 0 | NC Pushbutton |  | 1 | Blue Pilot Light |  |
| 0 | Dual Pushbutton |  | 0 | Eight-pin relay |  |
|  |  | | 0 | Eleven-pin relay |  |

**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.

|  |  |  |
| --- | --- | --- |
| Red | Green | Yellow |
|  |  |  |

1. Press ESTOP. Notice that the pushbutton stays “latched”. Record light sequence.

|  |  |  |
| --- | --- | --- |
| Red | Green | Yellow |
|  |  |  |

1. Rotate head of ESTOP to “un-latch” the pushbutton. Record light sequence.

|  |  |  |
| --- | --- | --- |
| Red | Green | Yellow |
|  |  |  |

1. Rotate the position of the selector switch to the “B” position. Record light sequence.

|  |  |  |
| --- | --- | --- |
| Red | Green | Yellow |
|  |  |  |

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.



1. With the selector switch in the “Off” (or center) position, record the light sequence.

|  |  |
| --- | --- |
| Green | Yellow |
|  |  |

1. With the selector switch in the “A” position, record the light sequence.

|  |  |
| --- | --- |
| Green | Yellow |
|  |  |

1. With the selector switch in the “B” position, record the light sequence.

|  |  |
| --- | --- |
| Green | Yellow |
|  |  |

1. List three applications that is type of selector switch may be useful.

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