Title: **8 Pin Relay, Wired** Job: 5

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

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

**Objectives**

1. Student shall identify the components of a standard eight-pin relay.
2. Student shall contrast the difference between “normally-open” contacts and “normally-closed” contacts.
3. Student shall evaluate the behavior of the relays contacts in a live circuit.

**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 instructor evaluation.

**Materials**

|  |  |  |
| --- | --- | --- |
| Inputs | | |
| *Device* | *Description* | *Symbol* |
| Dual Action Pushbutton | Test Relay | TEST |
| Outputs | | |
| *Device* | *Description* | *Symbol* |
| Green Pilot Light | State of Contact | CR1\_13 |
| Yellow Pilot Light | State of Contact | CR1\_14 |
| Red Pilot Light | State of Contact | CR1\_86 |
| Blue Pilot Light | State of Contact | CR1\_85 |
| Eight-Pin 24VDC Relay | Control Relay | CR1 |

**Instructions**

Wire the schematic shown on page 2. Ensure to use the proper colored wire and label all wires with the appropriate wire number. Have the instructor review your circuit before energizing the panel. After obtaining approval, energize the circuit and follow the steps in the table below.

**Diagram**

|  |  |  |  |
| --- | --- | --- | --- |
| **NEMA**  National Electrical Manufacturers Association |  |  |  |
| **IEC** International Electrotechnical Commision |  |  |  |

There are two “standards” for how the internal workings of a relay are depicted; NEMA and IEC. We shall be using NEMA throughout this course but it is important to be aware of both.

**Schematic**



1. The numbers in the boxes to the left are for what purpose? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The numbers below a device indicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. The number on the horizontal lines indicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. The numbers in the box to the right indicate? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. For what purpose are some of the numbers underlined? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Without pressing PB2, record the state of the four lights.

Green \_\_\_\_\_\_\_\_\_\_ Yellow \_\_\_\_\_\_\_\_\_\_ Red \_\_\_\_\_\_\_\_\_\_ Blue \_\_\_\_\_\_\_\_\_\_

1. Pressing PB2, record the state of the four lights

Green \_\_\_\_\_\_\_\_\_\_ Yellow \_\_\_\_\_\_\_\_\_\_ Red \_\_\_\_\_\_\_\_\_\_ Blue \_\_\_\_\_\_\_\_\_\_

1. For questions 6 and 7, what does the state of the pilot light indicate? \_\_\_\_\_\_\_\_\_\_\_
2. List two ways to physically tell whether the relay is energized just by looking at it.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. List three applications that a relay may be of use in a controls application.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Refer to the Manual Motor Controls Boolean Logic Shop Job #3 and answer the following questions.

1. Rung 1 is an example of what type of logic?   
   (EQUAL, NOT, OR, AND, NOR, NAND)
2. Rung 2 is an example of what type of logic?   
   (EQUAL, NOT, OR, AND, NOR, NAND)
3. Rung 3 is an example of what type of logic?   
   (EQUAL, NOT, OR, AND, NOR, NAND)