

Chapter 02 Test Bank KEY

1. An analog input or output is a signal that varies continuously within a certain range.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

2. Most input modules have blown fuse indicators.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Units: NA*

3. I/O modules are designed to plug into a slot or connector.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.01 The I/O Section
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

4. Optical isolation used in I/O modules helps to reduce the effects of electrical noise.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

5. I/O modules are keyed to prevent unauthorized personnel from removing them from the I/O rack.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

6. The maximum current rating for the individual outputs of an AC output module is usually in the 20 to 30 ampere range.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

7. A thermocouple would be classified as an analog input sensing device.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

8. Shielded twisted pair cable is used for connecting to thermocouple inputs to reduce unwanted electrical noise.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

9. Electrical noise usually causes permanent operating errors.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 6. Organizing
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

10. The processor may perform functions such as timing, counting, and comparing in addition to logic processing.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

11. Memory is where the control plan is held or stored in the controller.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.07 Memory Design
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

12. A volatile memory will lose its programmed contents if operating power is lost.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

13. A nonvolatile memory will retain its programmed contents if operating power is lost.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

14. RAM memory is nonvolatile.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

15. Information stored in a RAM memory location can be written into or read from.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

16. When a new program is loaded into a PLC's memory, the old program that was stored in the same locations is over-written and essentially erased.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

17. Most PLC programming software will allow you to develop programs on another manufacturer's PLC.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

18. Analog signals can have only two states.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

19. A modular PLC that has room for several I/O modules is capable of being customized for a particular application.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

20. I/O modules are normally installed or removed while the PLC is powered.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 3. Apply
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

21. A module inserted into the wrong slot could be damaged.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 3. Apply
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

22. A redundant PLC system is configured using two processors.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

23. Most PLC electronic components are not sensitive to electrostatic discharge.

FALSE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

24. One advantage of discrete relay contact output modules is that they can be used with AC or DC devices.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

25. If you had a hand-held programming terminal from one manufacturer you can program only that manufacture's PLC using it.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

26. Hot swappable I/O modules are designed to be changed with the power on and the PLC operating.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 3. Apply
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.05 I/O Specifications
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

27. HMI screens are developed using a software package on a PC which is downloaded into the PLC operator interface device.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 3. Procedural
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.11 Human Machine Interfaces (HMIs)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

28. Discrete means that each input or output has two states: true (on) or false (off).

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

29. Light is used in I/O modules to separate the real-world electrical signals from the PLC internal electronic system.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

30. Digital modules are also called discrete modules.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

31. The sum of the backplane current drawn for all modules in a chassis is used to select the appropriate chassis power supply rating.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

32. A ____ is an example of a device that could be used to provide a discrete input to a PLC.

- A. pushbutton
- B. selector switch
- C. limit switch
- D.** All of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

33. A ____ is an example of an actuator that could be controlled by a discrete output from a PLC.

- A. pushbutton
- B.** motor starter
- C. limit switch
- D. All of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

34. A/An ____ input or output is a continuously variable signal within a designated range.

- A. discrete
- B. digital
- C. BCD
- D.** analog

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

35. One function of a PLC input interface module is to

- A.** accept signals from field devices and convert them into signals that can be used by the processor.
- B. convert signals from the processing unit into values that can be used to control the machine or process.
- C. input signals from the programming device and convert them into signals that can be used by the CPU.
- D. interpret and execute the user program that controls the machine or process.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

36. The location of a specific input or output field device is identified by the processor by means of its

- A. voltage rating.
- B. current rating.
- C. wattage rating.
- D.** address.

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Explain I/O addressing
Section: 02.01 The I/O Section
Subtopic: Addressing
Topic: PLC Hardware Components
Units: NA*

37. A discrete output interface module is designed to provide

- A. output voltages only in the 5 VDC range.
- B. varying AC or DC voltages depending on the type of module selected.
- C.** ON/OFF switching of the output field device.
- D. binary-coded outputs.

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

38. The following statement that does *not* apply to the optical isolator circuit used in I/O modules is that it

- A. separates high-voltage and low-voltage circuits.
- B.** rectifies AC signals.
- C. prevents damage caused by line voltage transients.
- D. reduces the effect of electrical noise.

Accessibility: Keyboard Navigation
Bloom's: Object 1, Factual
Bloom's: Verb 2, Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

39. Individual outputs of a typical AC output interface module usually have a maximum current rating of about

- A.** 1 A or 2 A.
- B. 25 A or 50 A.
- C. 50 mA or 100 mA.
- D. 250 μ A or 500 μ A.

Bloom's: Object 1, Factual
Bloom's: Verb 1, Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

40. Which of the following input field devices would most likely be used with an analog interface input module?

- A. Pushbutton
- B. Limit switch
- C. Selector switch
- D.** Thermocouple

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

41. The "ON state input voltage range" specification refers to

- A. the type of voltage device that will be accepted by the input.
- B. range of leakage voltage present at the input in its ON state.
- C. minimum and maximum output operating voltages.
- D.** voltage at which the input signal is recognized as being ON.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.05 I/O Specifications
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

42. Volatile memory elements can be classified as those that

- A. do not retain stored information when the power is removed.
- B. retain stored information when the power is removed.
- C. do not require a battery backup.
- D. both retain stored information when the power is removed and do not require a battery backup.

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

43. _____ memory is used by the PLC's operating system.

- A. RAM
- B. EEPROM
- C. Flash
- D. ROM

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

44. _____ is a type of memory commonly used for temporary storage of data that may need to be quickly changed.

- A. RAM
- B. ROM
- C. EPROM
- D. EEPROM

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

45. The most common form of memory used to store, back up, or transfer PLC programs is

- A. RAM.
- B. Flash EEPROM.
- C. EEPROM.
- D. both Flash EEPROM and EEPROM.

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

46. In event of a power interruption, a(an) _____ is used in some processors to provide power to the RAM.

- A. inductor
- B.** capacitor
- C. transistor
- D. resistor

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.08 Memory Types
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA*

47. Which of the following is *not* a function of a PLC programming device?

- A. To enter the user program
- B. To change the user program
- C.** To execute the user program
- D. To monitor the user program

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.09 Programming Terminal Devices
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

48. Status indicators are provided on each output of an output module to indicate that the

- A. load has been operated.
- B. input associated with the output is active.
- C. module fuse has blown.
- D.** output is active.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
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Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

49. The I/O system provides an interface between

- A. input modules and output modules.
- B.** the CPU and field equipment.
- C. the CPU and I/O rack.
- D. the I/O rack and I/O modules.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

50. The PLC chassis comes in different sizes according to the

- A. size of the program.
- B. type of I/O modules used.
- C.** number of slots they contain.
- D. All of these choices are correct

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

51. The Allen-Bradley SLC-500 address I:2/4 refers to an

- A. input module in slot 4, terminal 2.
- B. output module in slot 4, terminal 2.
- C.** input module in slot 2, terminal 4.
- D. output module in slot 2, terminal 4.

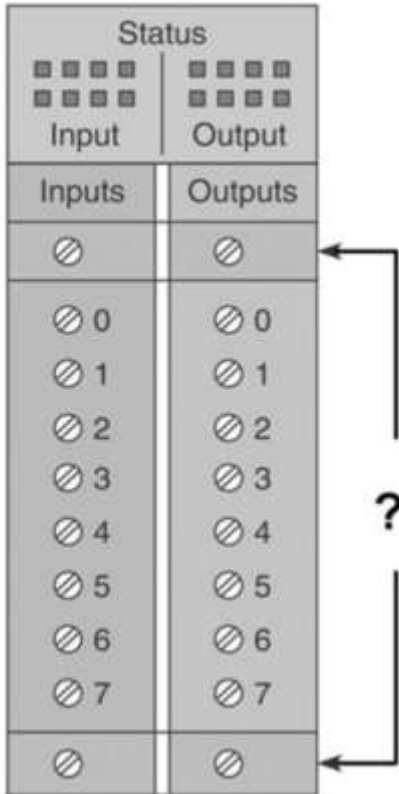
*Accessibility: Keyboard Navigation
Bloom's: Object 3. Procedural
Bloom's: Verb 3. Apply
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Explain I/O addressing
Section: 02.01 The I/O Section
Subtopic: Addressing
Topic: PLC Hardware Components
Units: NA*

52. The Allen-Bradley SLC-500 address O:3/0 refers to an

- A. input module in slot 3, terminal 0.
- B.** output module in slot 3, terminal 0.
- C. input module in slot 0, terminal 3.
- D. output module in slot 0, terminal 3.

Accessibility: Keyboard Navigation
Bloom's: Object 3. Procedural
Bloom's: Verb 3. Apply
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Explain I/O addressing
Section: 02.01 The I/O Section
Subtopic: Addressing
Topic: PLC Hardware Components
Units: NA

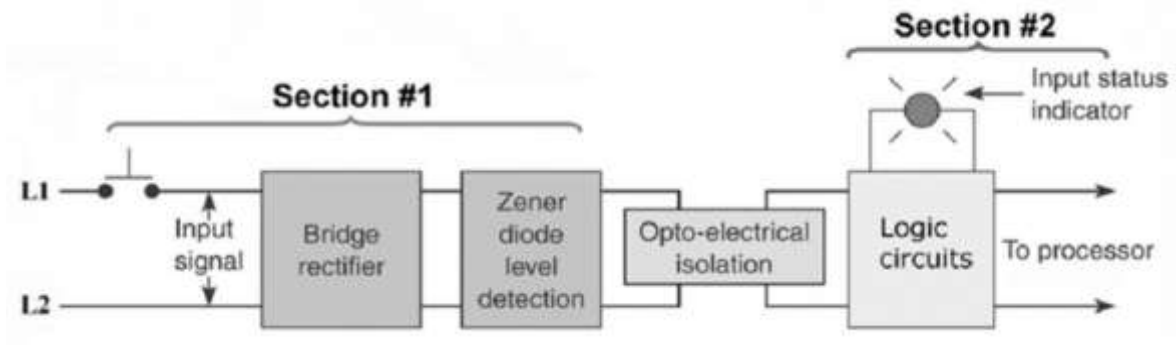
53. For the I/O module shown, the arrows point to the



- A. status indicator connections.
- B. input connections.
- C. output connections.
- D. power supply connections.

*Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
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Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.01 The I/O Section
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

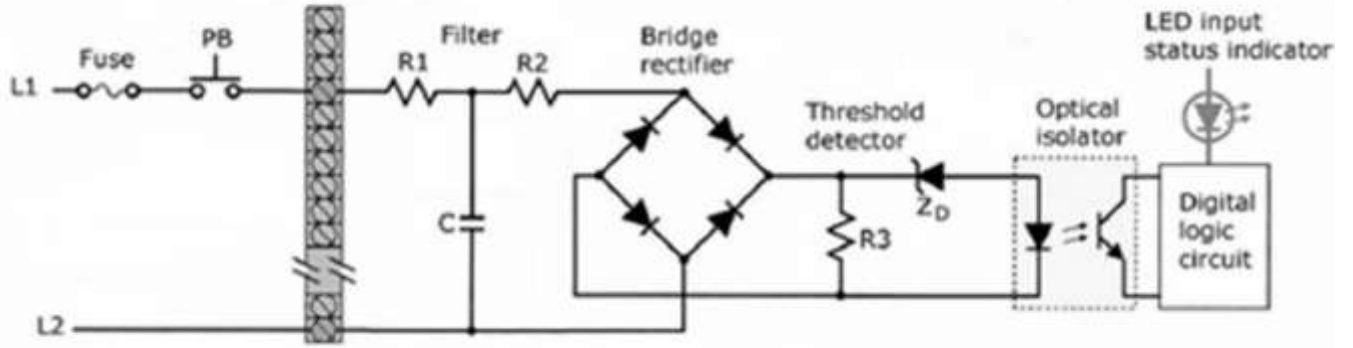
54. For the block diagram of the input module shown, Section #1 represents the _____ and #2 the _____



- A. AC, DC.
- B. DC, AC.
- C.** power, logic.
- D. logic, power.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

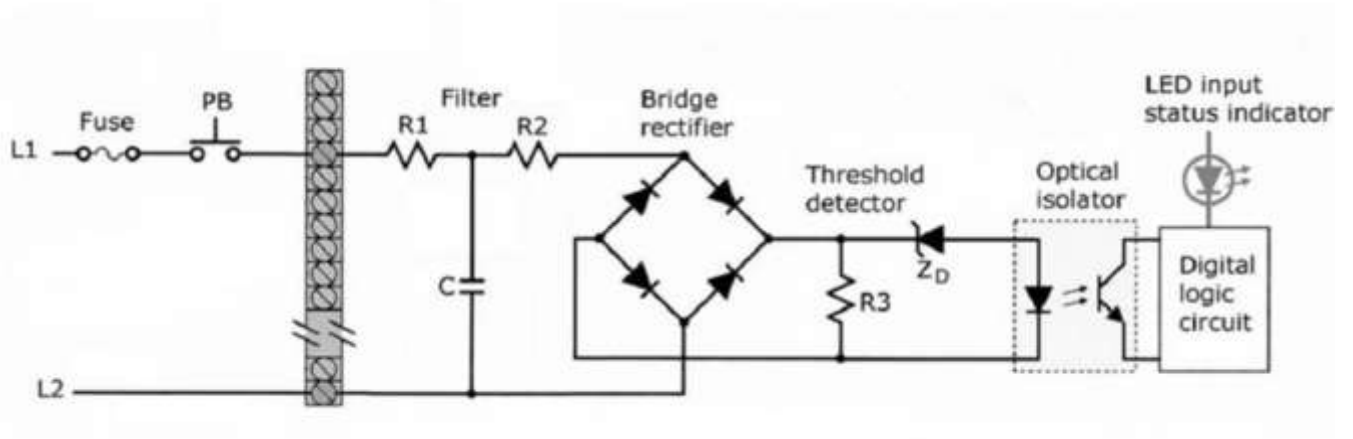
55. The schematic diagram shown is that of a(n)



- A. discrete output module.
- B. analog output module.
- C. discrete input module.
- D. analog input module.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

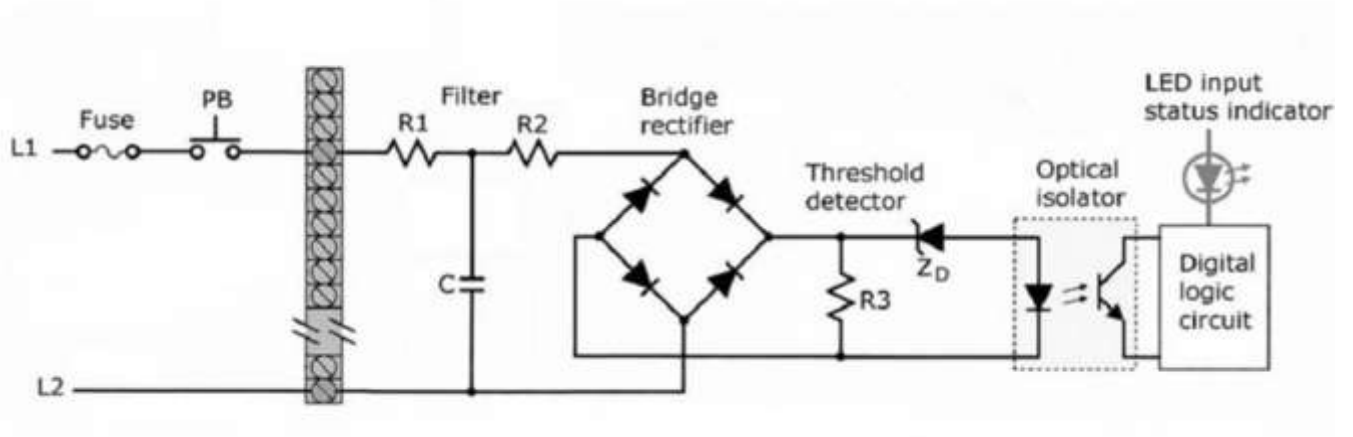
56. The purpose of the filter section is to



- A. aid in fault diagnosis.
- B. set the minimum level of voltage that can be detected.
- C. protect against electrical noise interference.
- D. separate the higher line voltage from the logic circuits.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

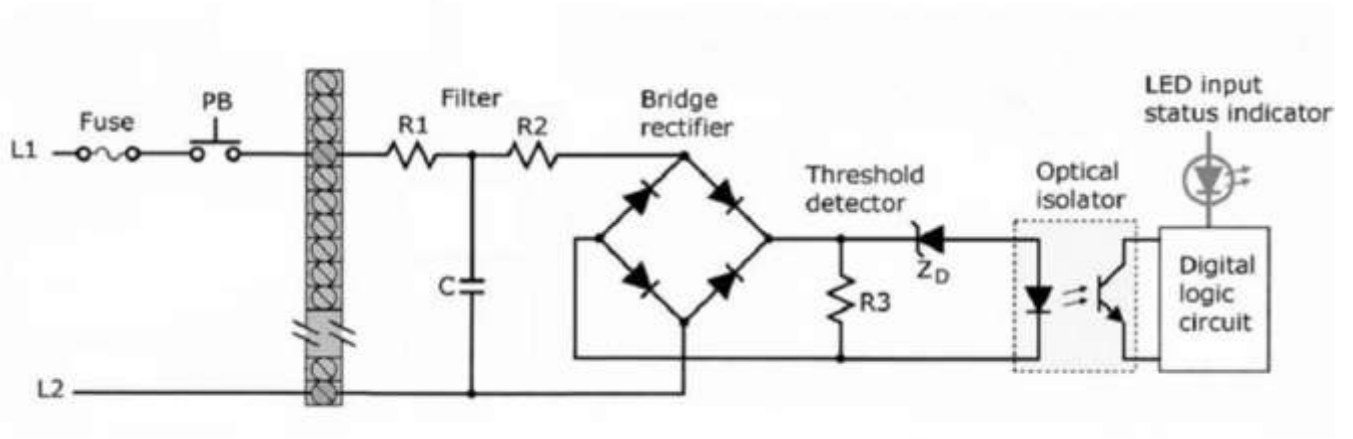
57. The purpose of the zener diode (ZD) is to



- A. aid in fault diagnosis.
- B.** set the minimum level of voltage that can be detected.
- C. protect against electrical noise interference.
- D. separate the higher line voltage from the logic circuits.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

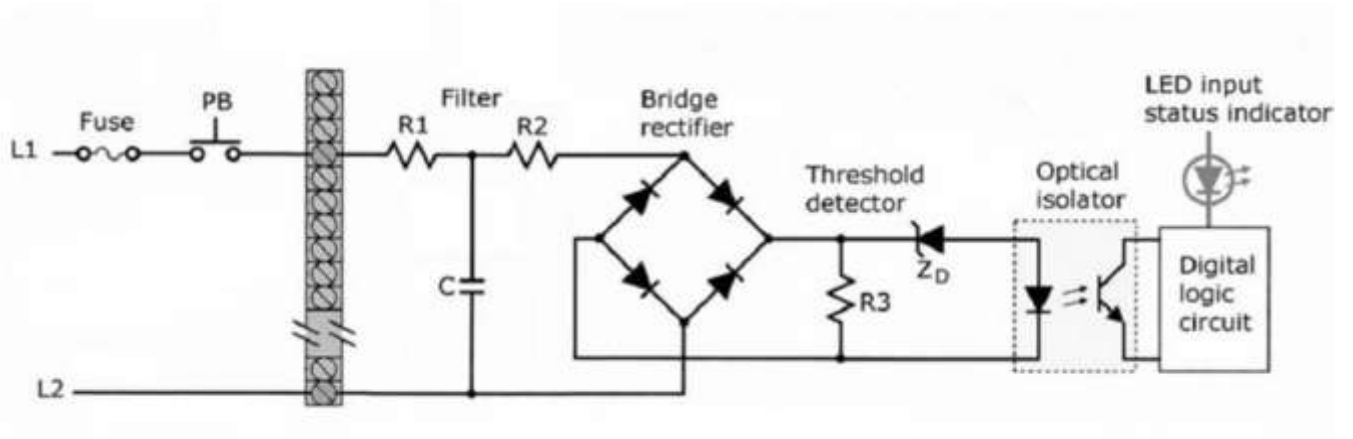
58. The purpose of the LED indicator is to



- A. aid in fault diagnosis.
- B. set the minimum level of voltage that can be detected.
- C. protect against electrical noise interference.
- D. separate the higher line voltage from the logic circuits.

Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

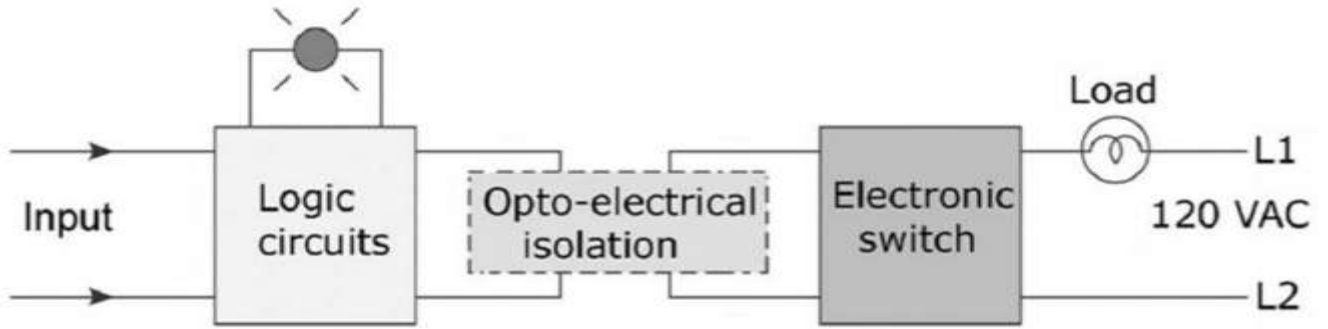
59. The purpose of the optical isolator is to



- A. aid in fault diagnosis.
- B. set the minimum level of voltage that can be detected.
- C. protect against electrical noise interference.
- D.** separate the higher line voltage from the logic circuits.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

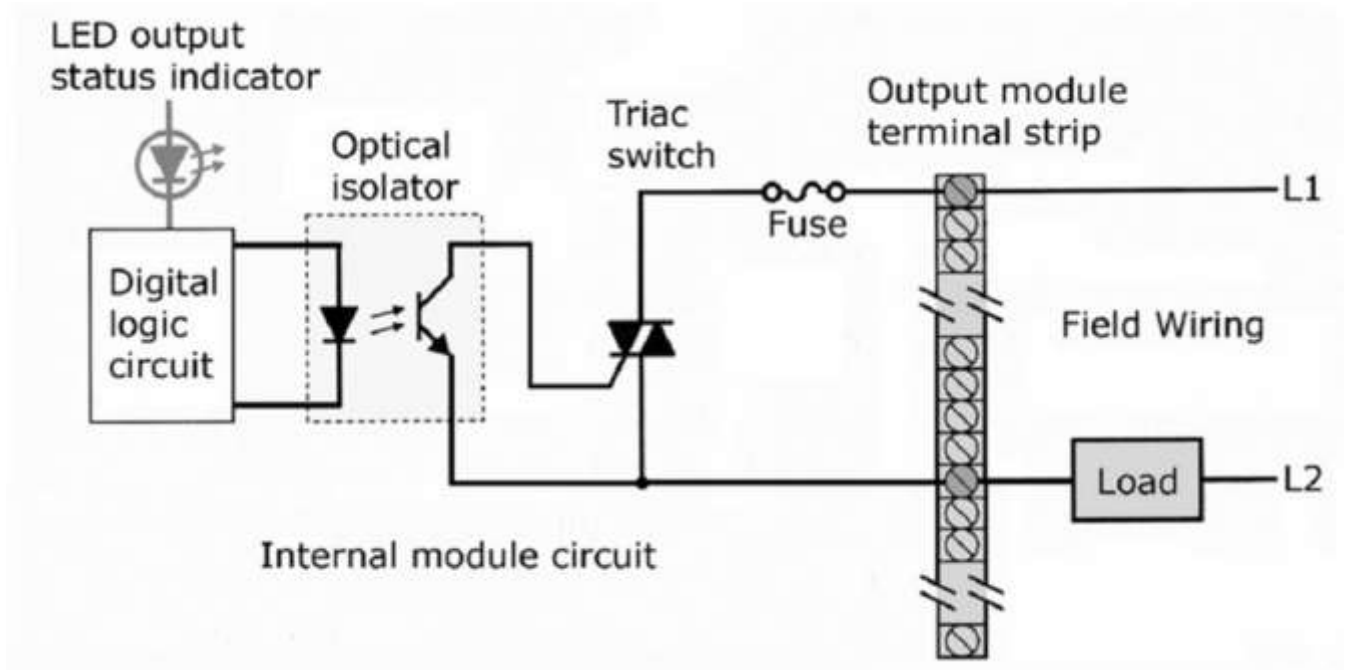
60. For the block diagram of the output module shown, the input comes from the



- A. input field device.
- B.** processor.
- C. output field device.
- D. line power supply.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

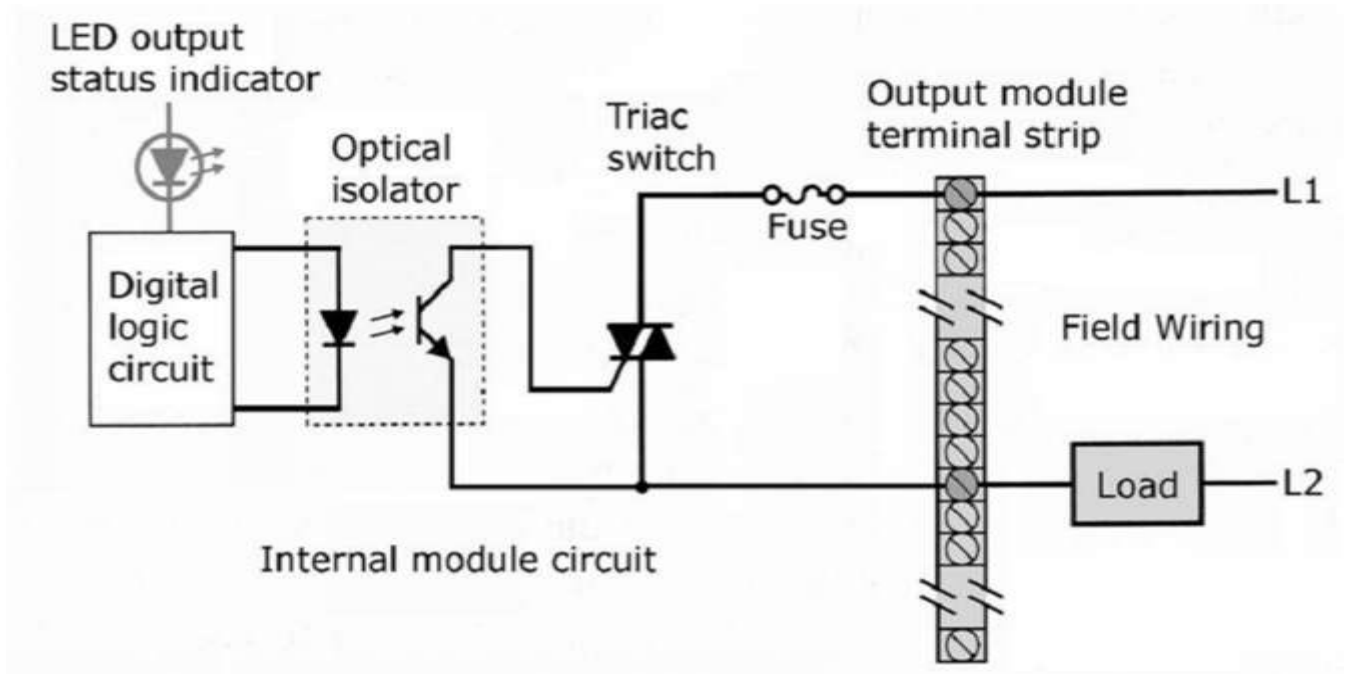
61. The schematic diagram shown is that of a(n)



- A. discrete output module.
- B. analog output module.
- C. discrete input module.
- D. analog input module.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

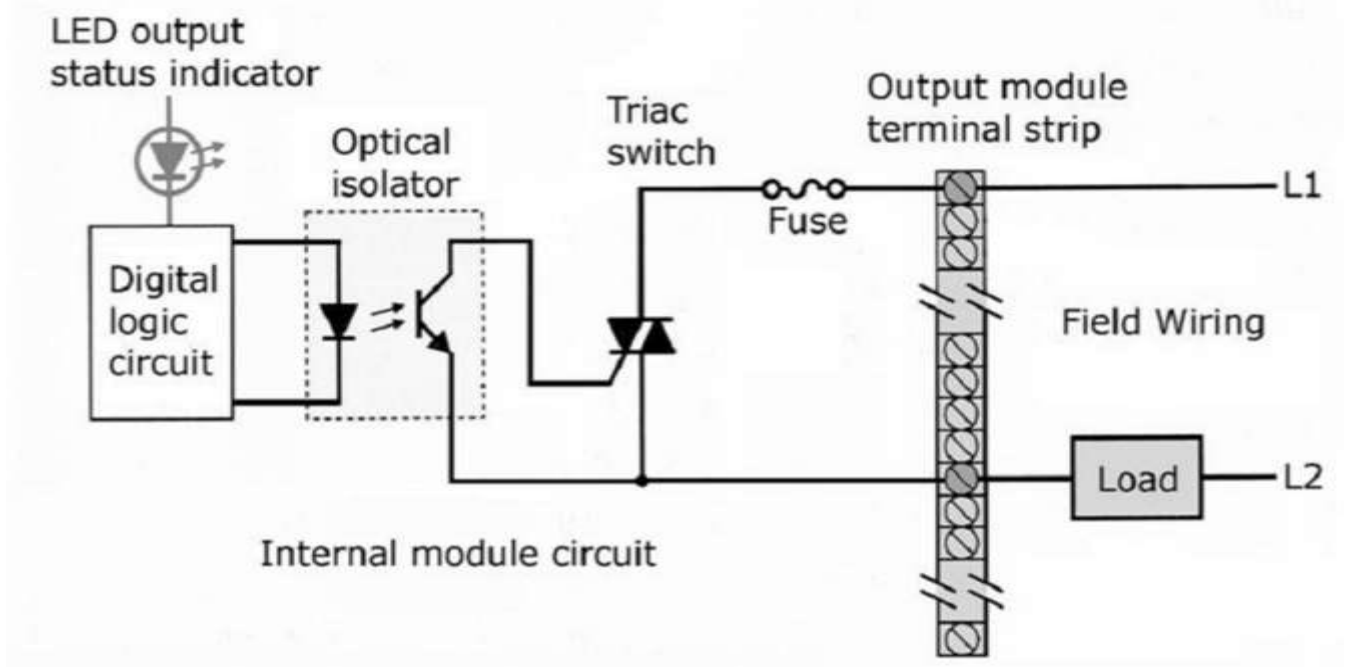
62. The input signal to the module comes from



- A. the input field device.
- B. the output field device.
- C. internal logic circuitry of the processor.
- D. either the input field device or the output field device.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

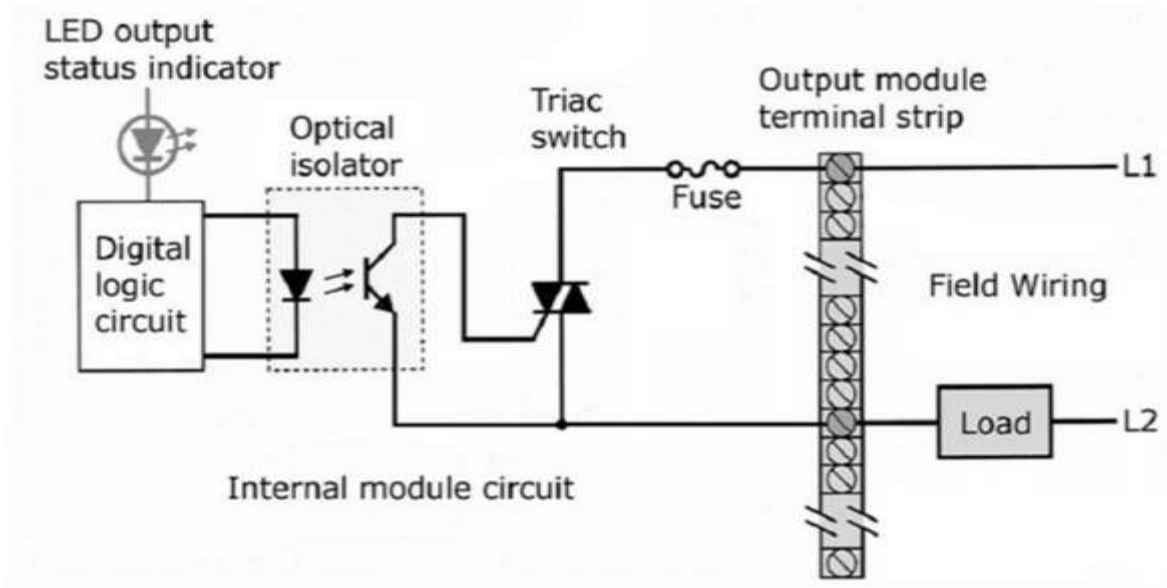
63. The purpose of the triac switch is to



- A. turn the load ON and OFF.
- B. vary the current flow to the load in accordance with the input signal level.
- C. vary the voltage across the load in accordance with the input signal level.
- D. both vary the current flow to the load in accordance with the input signal level and vary the voltage across the load in accordance with the input signal level.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

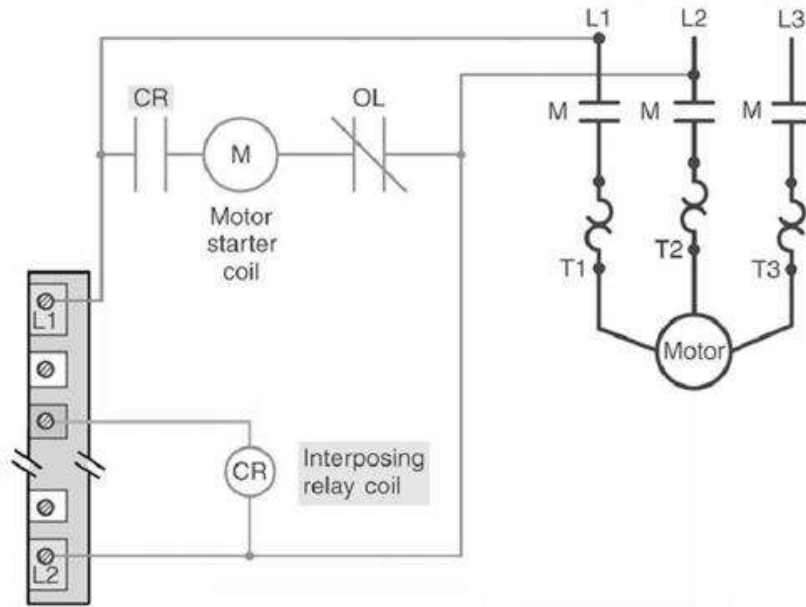
64. When the triac is in the OFF state



- A. zero current always flows through the load.
- B.** a small leakage current may flow through the load.
- C. the rated surge current flows through the lamp.
- D. the rated nominal current flows through the lamp.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

65. The schematic diagram of Figure 2-6 is an example of how a PLC output module is connected to



- A. isolate the load from the controller.
- B. control a high resistance load.
- C. vary the speed of a motor.
- D.** control a high current load.

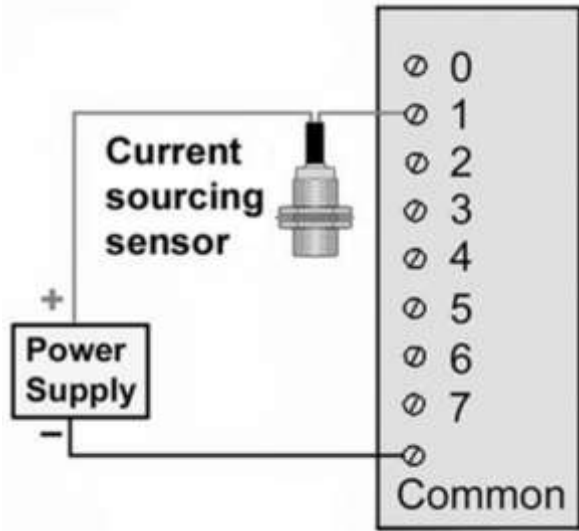
*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

66. Which of the following devices can be used for switching the output of a discrete DC output module?

- A. Transistor.
- B. Triac.
- C. Relay.
- D.** Either transistor or relay.

Accessibility: Keyboard Navigation
Bloom's: Object 1, Factual
Bloom's: Verb 4, Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

67. The current sourcing sensor shown must be matched with a _____ PLC input module.



- A. current sinking
- B. current sourcing
- C. alternating current
- D. either current sinking or current sourcing

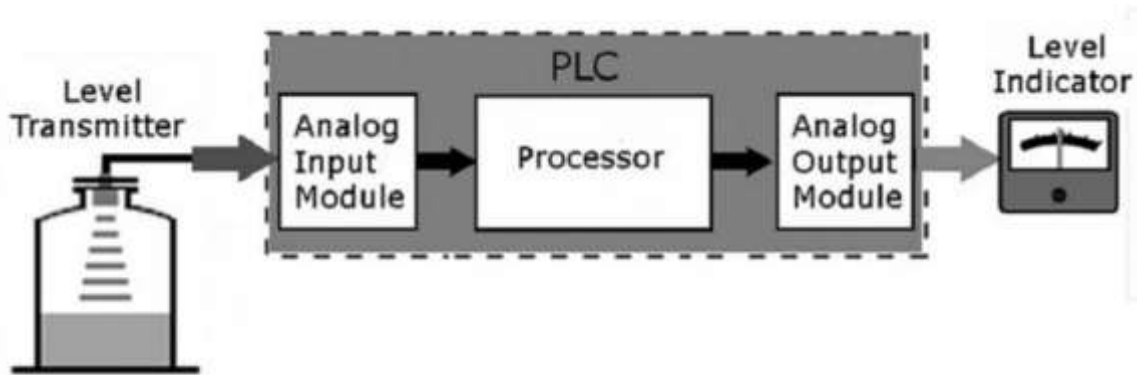
*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Hard
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

68. Typical analog inputs and outputs can vary from

- A. 0 to 20 mA.
- B. 4 to 20 mA.
- C. 0 to 10 volts.
- D.** All of these choices are correct

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

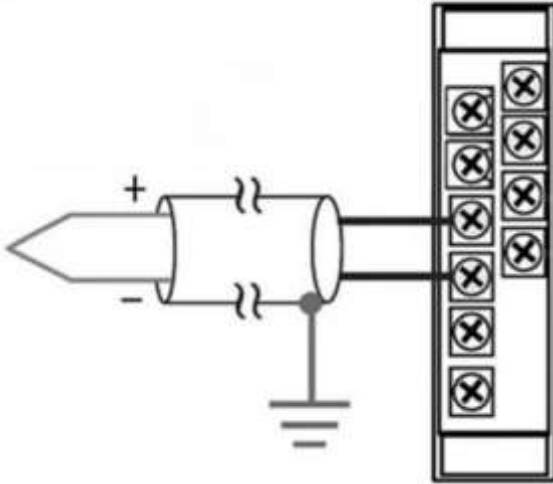
69. For the block diagram of the analog PLC control shown, which part has a binary input and analog output value?



- A. Level transmitter
- B. Input module
- C. Processor
- D.** Output module

*Bloom's: Object 2. Conceptual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

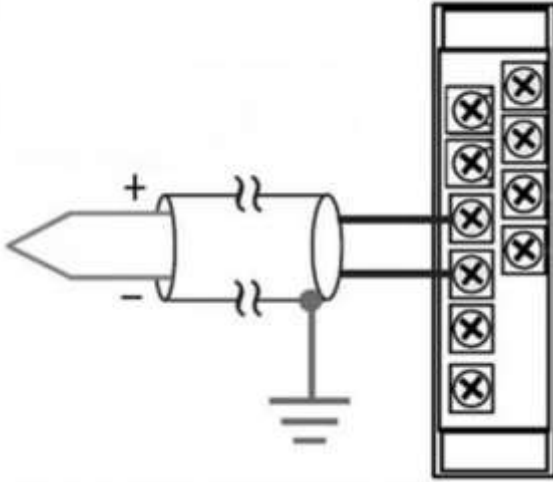
70. For the thermocouple analog input module shown, shielded cable is used to



- A. reduce unwanted electrical noise signals.
- B. carry the higher current required.
- C. lower the resistance of the conductors.
- D. insulate the circuit from other cables.

*Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

71. The thermocouple shown is a



- A. ungrounded type with the shield grounded at the module end.
- B. ungrounded type with the shield grounded at the thermocouple end.
- C. grounded type with the shield grounded at the module end.
- D. grounded type with the shield grounded at the thermocouple end.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

72. The main element of an analog output module is

- A. AC to DC rectifier.
- B. DC to AC inverter.
- C. analog to digital converter.
- D.** digital to analog converter.

Accessibility: Keyboard Navigation

Bloom's: Object 1, Factual

Bloom's: Verb 4, Analyze

Chapter: 02 PLC Hardware Components

Difficulty: Easy

Gradable: automatic

Learning Objective: Describe the basic circuitry for discrete and analog I/O modules

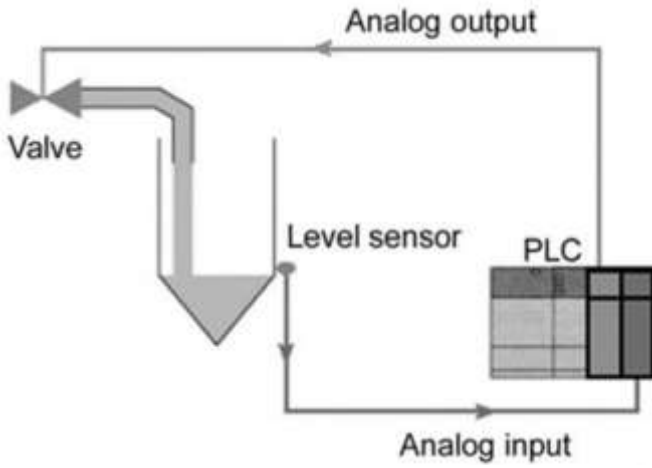
Section: 02.03 Analog I/O modules

Subtopic: Input and Output Modules

Topic: PLC Hardware Components

Units: NA

73. For the PLC analog I/O control system shown, the fluid flow is controlled by



- A. varying the amount of the valve opening.
- B. switching the valve ON and OFF.
- C. switching the level sensor ON and OFF.
- D. varying the position of the level sensor.

*Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

74. Which of the following special I/O modules would be used to operate a seven-segment LED Display?

- A. Encoder-counter module.
- B.** BCD-output module.
- C. Stepper-motor module.
- D. High-speed counter module.

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.04 Special I/O
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

75. A _____ module is used to establish connections for the exchange of data.

- A. thumbwheel
- B.** communication
- C. servo
- D. PID

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.04 Special I/O
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

76. High-density I/O modules

- A. may have up to 64 inputs or outputs per module.
- B. require more space.
- C. can handle greater amounts of current per output.
- D. All of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.04 Special I/O
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

77. Discrete I/O modules can be classified as

- A. bit oriented.
- B. word oriented.
- C. processor oriented.
- D. power supply oriented.

Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

78. Which of the following specifications defines the number of field inputs or outputs that can be connected to a single module?

- A. Electrical isolation.
- B.** Points per module.
- C. Threshold voltage.
- D. Current per input.

*Accessibility: Keyboard Navigation
Bloom's: Object 1, Factual
Bloom's: Verb 2, Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.02 Discrete I/O Modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

79. The ____ of an analog I/O module specifies how accurately an analog value can be represented digitally.

- A. number of inputs and outputs per card
- B. input impedance and capacitance
- C.** resolution
- D. common mode rejection ratio

*Accessibility: Keyboard Navigation
Bloom's: Object 1, Factual
Bloom's: Verb 2, Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.03 Analog I/O modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

80. The processor module of the PLC is where the

- A. ladder logic program is stored.
- B. input connections are made.
- C. output connections are made.
- D. sensors are located.

Accessibility: Keyboard Navigation

Bloom's: Object 1. Factual

Bloom's: Verb 2. Understand

Chapter: 02 PLC Hardware Components

Difficulty: Easy

Gradable: automatic

Learning Objective: List the functions of the hardware components used in PLC systems

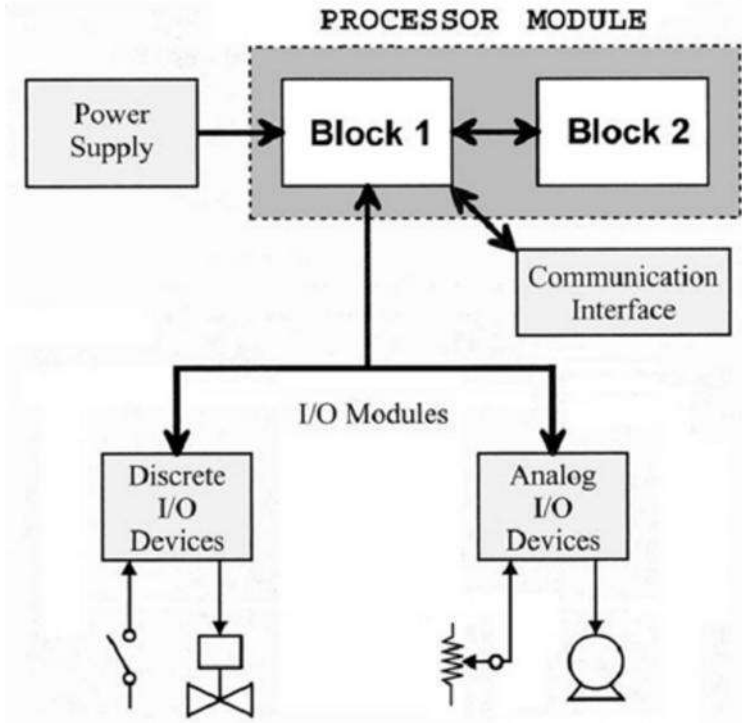
Section: 02.06 The Central Processing Unit (CPU)

Subtopic: PLC Hardware

Topic: PLC Hardware Components

Units: NA

81. For the processor module shown, Block 1 represents the ___ and Block 2 the ___.



- A. input, output
- B. output, input
- C. memory, CPU
- D. CPU, memory

Bloom's: Object 3. Procedural
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

82. When placed in the ___mode, the processor does not scan/execute the ladder program.

- A. program
- B. run
- C. test
- D. remote

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

83. The most commonly used programming device is a

- A. personal computer.
- B. dedicated industrial programming terminal.
- C. hand-held programmer.
- D. proprietary programming device.

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.09 Programming Terminal Devices
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

84. Electronic components found in PLC modules

- A. are not affected by electrostatic voltages.
- B. can be damaged by electrostatic voltages.
- C. can have their performance degraded by electrostatic voltages.
- D.** can be damaged by electrostatic voltages and can have their performance degraded by electrostatic voltages.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.06 The Central Processing Unit (CPU)
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

85. Batteries are used in a PLC's processor to

- A.** maintain data in volatile memory when line power is removed from the processor.
- B. operate the status lights LEDs.
- C. maintain data in nonvolatile memory when line power is removed from the processor.
- D. maintain outputs through a power failure.

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.08 Memory Types
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

86. A _____ defines a memory location where data are stored.

- A. analog-tag
- B. base-tag
- C.** digital-tag
- D. alias-tag

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Medium
Gradable: automatic
Learning Objective: Describe the general classes and types of PLC memory devices
Section: 02.01 The I/O Section
Subtopic: PLC Memory
Topic: PLC Hardware Components
Units: NA

87. Sinking and sourcing terminology applies to both AC and DC input and output circuits.

FALSE

Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 4. Analyze
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.02 Discrete I/O Modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA

88. A _____ converts a field device's variable (e.g., pressure, temperature, etc.) into a very low-level electric signal (current or voltage).

- A. capacitor
- B. resistor
- C. inductor
- D.** transducer

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.03 Analog I/O modules
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA

89. Which of the following would be classified as engineering units?

- A. Degrees Fahrenheit
- B. Centimeter
- C. Pounds per Square Inch
- D.** All of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: Imperial
Units: SI

90. Scaling refers to the changing of a quantity from one notation to another.

TRUE

*Accessibility: Keyboard Navigation
Bloom's: Object 2. Conceptual
Bloom's: Verb 2. Understand
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: Describe the basic circuitry for discrete and analog I/O modules
Section: 02.03 Analog I/O modules
Subtopic: Input and Output Modules
Topic: PLC Hardware Components
Units: NA*

91. Which of the following alarm conditions indicates that a condition is being monitored but does not have any faults present?

- A.** Inactive
- B.** Active
- C.** OFF
- D.** Acknowledged

*Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.11 Human Machine Interfaces (HMIs)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA*

92. Values of important process variables over a period of time are shown by a _____ display.

- A. trend
- B. event history
- C. alarm
- D. All of these choices are correct

Accessibility: Keyboard Navigation
Bloom's: Object 1. Factual
Bloom's: Verb 1. Remember
Chapter: 02 PLC Hardware Components
Difficulty: Easy
Gradable: automatic
Learning Objective: List the functions of the hardware components used in PLC systems
Section: 02.11 Human Machine Interfaces (HMIs)
Subtopic: PLC Hardware
Topic: PLC Hardware Components
Units: NA