

48. The resistors (R1, R2, and R3) are° in _____.
 (a) series with Start contacts (b) parallel with the Run contacts
 (c) series with the Overloads (d) all of these
49. • A remote stop switch can be wired in _____.
 (a) Line 1 (b) Line 2 (c) Line 3 (d) Line 1 or Line 2
50. Which is true about **Diagram 1**?
 (a) The Normally Open Start contacts open after the Normally Closed Run contacts close.
 (b) The Normally Open Run contacts close after the Normally Open Start contacts close.
 (c) The Normally Open Start contacts open after the Normally Closed Run contacts open.
 (d) The Normally Open Run contacts close after the Start coil energizes.

Questions 51 through 56 apply to **Diagram 2** and **Diagram 3**. Match the letters shown in **Diagram 3** (the pushbutton station) with the numbers shown in **Diagram 2**.

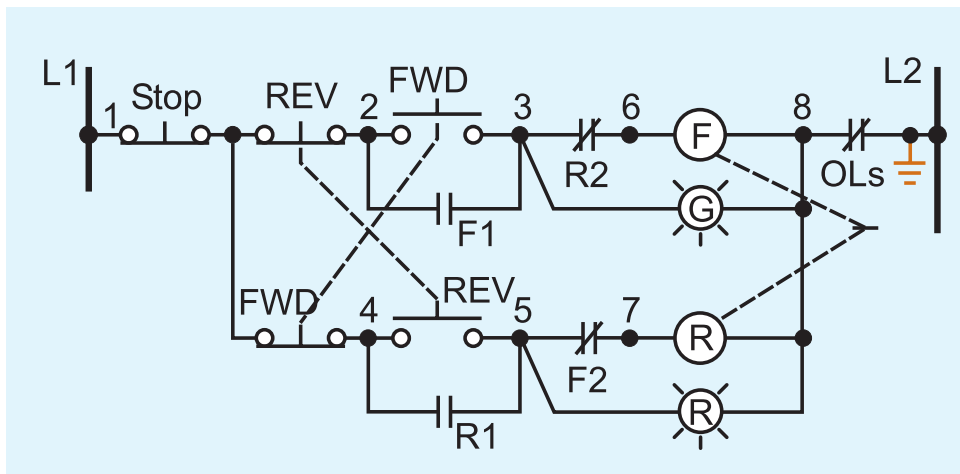


Diagram 2

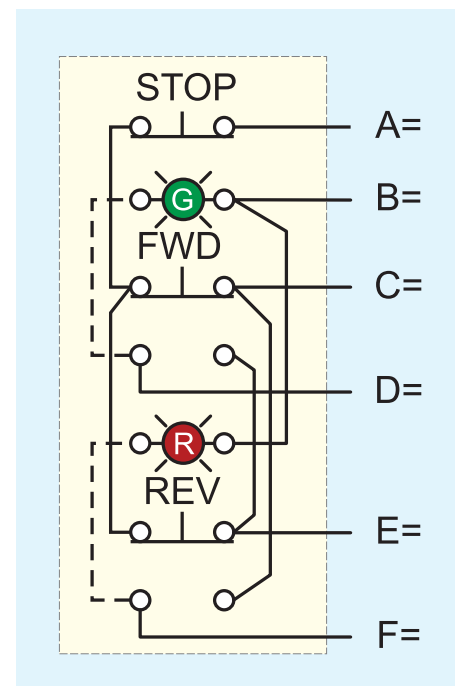


Diagram 3

51. • Letter A shown in the pushbutton station is connected to point ____ in **Diagram 2**.
 (a) 1 (b) 2
 (c) 3 (d) 4
52. • Letter B shown in the pushbutton station is connected to point ____ in **Diagram 2**.
 (a) 6 (b) 7
 (c) 8 (d) 3
53. • Letter C shown in the pushbutton station is connected to point ____ in **Diagram 2**.
 (a) 2 (b) 3
 (c) 4 (d) 5
54. Letter D shown in the pushbutton station is connected to point ____ in **Diagram 2**.
 (a) 2 (b) 3
 (c) 4 (d) 5

55. Letter E shown in the pushbutton station is connected to point _____ in **Diagram 2**.
 (a) 1 (b) 2 (c) 3 (d) 4
56. Letter F shown in the pushbutton station is connected to point _____ in **Diagram 2**.
 (a) 2 (b) 3 (c) 4 (d) 5

Questions 57 through 60 apply to **Diagram 4**:

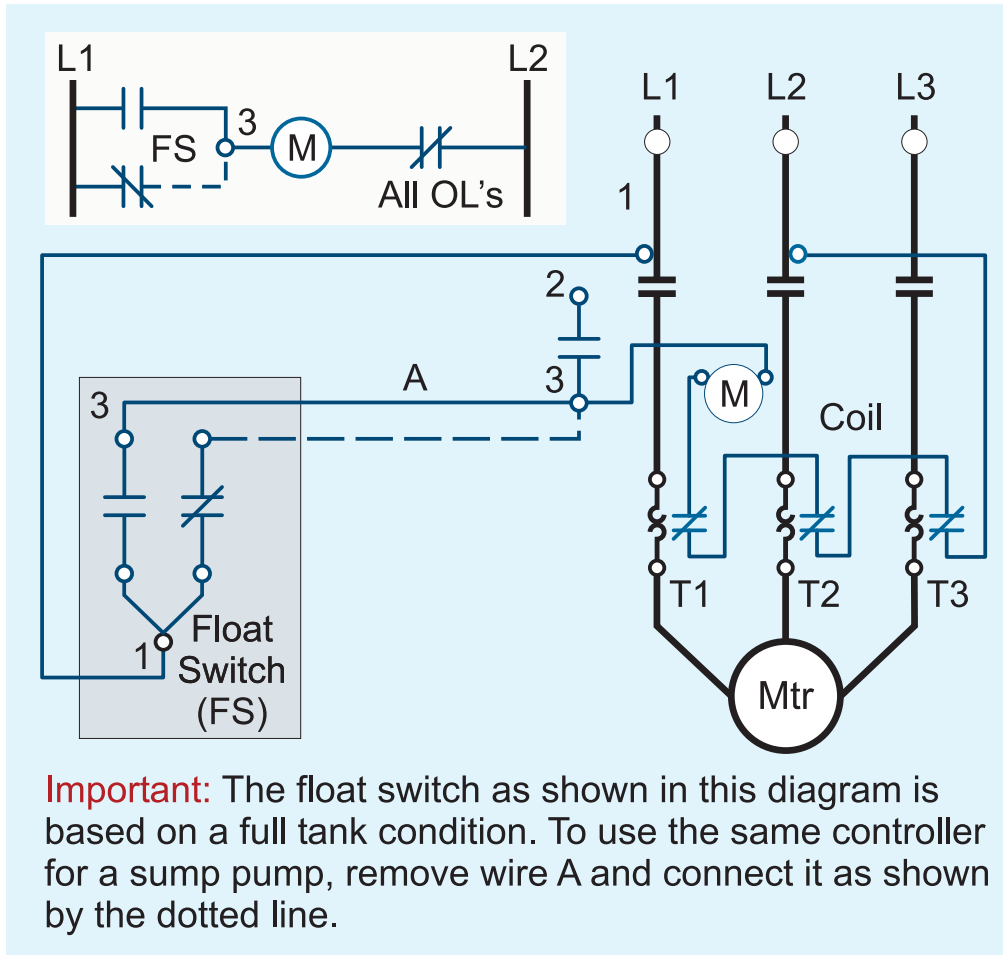


Diagram 4

57. Based on the conditions as shown in **Diagram 4**, which of the following statements are true?
 (a) The motor is running. (b) The motor is not running.
 (c) The holding contact (2-3) is not being used. (d) b and c
58. Based on the conditions as shown in **Diagram 4**, which of the following are true?
 (a) Relay M will not function since all of the contacts have been bypassed.
 (b) Relay M will function directly from the float switch.
 (c) Relay M is in parallel with the overload contacts.
 (d) all of these