

## Control Panel Wiring and Circuit Breakers & Relays

1). Which is the correct sequence of operation of contactors for operating an automatic star delta starter?

- (A) Main → Star → Delta → Timer
- (B) Star → Main → Timer → Delta
- (C) Main → Timer → Delta → Star
- (D) Star → Timer → Delta → Main

Correct Answer : B

2). How the control circuit voltage for a contactor are selected?

- (A) As per rated current
- (B) As per supply voltage
- (C) As per no volt coil rating
- (D) As per the type of supply

Correct Answer : C

3). Which circuit breaker is used as a switch and protective device in the domestic wiring circuit?

- (A) Air circuit breaker
- (B) Miniature circuit breaker
- (C) Moulded case circuit breaker
- (D) Earth Leakage circuit breaker

Correct Answer : B

4). What is the fault in the DOL starter if the no volt coil is operating but motor fails to start?

- (A) Mechanical obstruction in the contactor
- (B) Single phasing fault
- (C) Incorrect setting of over load relay
- (D) Broken shading coil

Correct Answer : A

5). Which DC load is represented by the DC4 standard duty cycle of contactors?

- (A) Resistive loads except motor loads
- (B) Starting and stopping of shunt motor
- (C) Starting and stopping of series motor
- (D) Starting and stopping of shunt motor with inching and braking

Correct Answer : C

6). Which switch with an actuator is operated by the motion of a machine or part of an object?

- (A) Limit switch

- (B) Toggle switch
- (C) Isolating switch
- (D) Push button switch

Correct Answer : A

7). Which accessory prevents the flare out of stripped stranded cables in the panel board wiring?

- (A) Sleeves
- (B) Wire ferrules
- (C) Lugs and thimbles
- (D) Cable binding straps and button

Correct Answer : C

8). Which device protects from overload and short circuit in a panel board?

- (A) Isolating switch
- (B) Time delay relay
- (C) Thermal overload relay
- (D) Miniature circuit breaker

Correct Answer : D

9). What happens, if time delay relay of an auto star delta starter still in closed condition after starting?

- (A) Motor runs in high speed
- (B) Motor runs normally
- (C) Motor runs in star only
- (D) Motor runs in delta only

Correct Answer : C

10). What is the reason for providing two separate Earthing in the panel board?

- (A) Panel board is made in metal box
- (B) Control the stray field in the panel
- (C) Reduce the voltage drop in panel board
- (D) Ensure one earthing in case of other failure

Correct Answer : D

11). What is the purpose of external source for passive sensors?

- (A) To generate pressure
- (B) To generate heat
- (C) To generate light
- (D) To generate signal

Correct Answer : D

12). Which circuit breaker is installed along with wiring circuit against leakage current protection?

- (A) OCB
- (B) MCB
- (C) ELCB
- (D) MCCB

Correct Answer : C

13). What is the defect in a oil circuit breaker if the oil heats up excessively?

- (A) Line current is too low
- (B) Load is too low
- (C) Poor dielectric strength of oil
- (D) Good dielectric strength of oil

Correct Answer : C

14). Which relay is hold their contacts in the position after power is cutoff?

- (A) Read relay
- (B) Current relay
- (C) Voltage relay
- (D) Latching relay

Correct Answer : D

15). Which is the essential feature to be considered while designing a layout of control panel?

- (A) Weight of the control panel
- (B) Cost of the control panel
- (C) Suitable method of labelling and cable harnessing
- (D) Outside dimensions and swing area of cabinet door

Correct Answer : D

16). How to prevent the entry of the insects and rats into the control panel?

- (A) By using sleeve
- (B) By using Grommets
- (C) By using cable binding straps
- (D) By providing nylon cable ties

Correct Answer : B

17). Which gas is used in SF<sub>6</sub> circuit breaker?

- (A) Acetylene
- (B) Sulphur dioxide
- (C) Sulphur hexafluoride
- (D) Carbon dioxide

Correct Answer : C

18). What happened if the load increased beyond the rated level in transmission system?

- (A) Increases the current in the line
- (B) Increases the voltage in the line
- (C) Decreases the current in the line
- (D) Decreases the voltage drop in the line

Correct Answer : A

19). Why the motor is contunious in the same direction if the reverse push button is pressed in the forward and reverse star delta stater?

- (A) No volt coil is not energized
- (B) Fault in forward contactor
- (C) Due to interlock in reverse contactor
- (D) No voltage exist in reverse contactor

Correct Answer : C

20). What is the use of 'G' channels in control panel?

- (A) For fixing relays
- (B) For fixing contactors
- (C) For fixing instruments
- (D) For fixing terminal connectors

Correct Answer : D

21). Why the power and control wirings run in separate race ways?

- (A) To decrease the heat dissipation
- (B) To reduce the radio interference
- (C) To reduce the insulation resistance
- (D) To decrease the current carrying capacity

Correct Answer : B

22). How the contacts in a contactor can be engaged for working?

- (A) By manual operation
- (B) By mechanical settings
- (C) By operating electromagnet
- (D) By using bimetallic strip

Correct Answer : C

23). What is the purpose of DIN-rail used in the control panel wiring?

- (A) It provides a path way for electrical wiring

- (B) Mounting the control accessories using screws
- (C) Mounting the double deck terminal connectors
- (D) Mounting the control accessories without screws

Correct Answer : D

24). Which device is avoided in the panel board assembly?

- (A) Sensors
- (B) Indicating lamp
- (C) Isolating switch
- (D) Push button switch

Correct Answer : A

25). Which type of load is protected by 'G' series MCB?

- (A) Ovens
- (B) Geysers
- (C) Air conditioners
- (D) General lighting systems

Correct Answer : C

26). Which device detects a physical quantity?

- (A) Motor
- (B) Circuit breaker
- (C) Sensors
- (D) Starter

Correct Answer : C

27). Which device is controlling the operations in the sequential control systems?

- (A) Timer
- (B) Relays
- (C) Contactor
- (D) Control transformer

Correct Answer : A

28). Which accessory is used to mount the MCB,OLR in the panel board without using screws?

- (A) DIN Rail
- (B) G channel
- (C) Grommets
- (D) PVC channel

Correct Answer : A

29). What is the use of PVC channel in a control panel wiring?

- (A) Mounting MCB
- (B) Mounting relays
- (C) Path way for electrical wiring and protection
- (D) Mounting double deck terminal contactor

Correct Answer : C

30). What is the purpose of the trip coil used in a circuit breakers?

- (A) For the under voltage protection
- (B) For the remote operation
- (C) For the over voltage protection
- (D) For the over load protection

Correct Answer : B

31). Which cable ties are used to bunch the wires?

- (A) Silk ties
- (B) P.V.C ties
- (C) Nylon ties
- (D) Cotton ties

Correct Answer : C

32). What is the purpose of thermal over load relay in control panel?

- (A) Switching ON/OFF the circuit
- (B) Protect the circuit from earth fault
- (C) Control the circuit based on time delay
- (D) Protect the motor from over loading

Correct Answer : D

33). What is the defect in an air circuit breaker, if trips intermittently on loading?

- (A) Incorrect setting of relay
- (B) Excessive heat
- (C) Insufficient air pressure
- (D) Higher setting of relay

Correct Answer : A

34). What is the purpose of control transformer used in the control panel wiring?

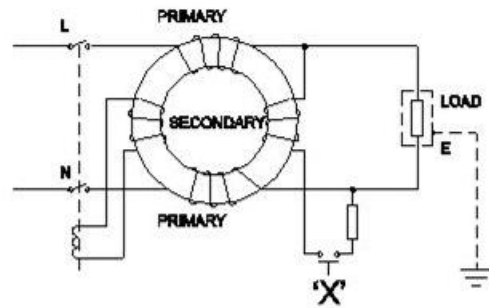
- (A) To maintain the constant supply voltage
- (B) To supply the power to the auxiliary circuits
- (C) To supply the power circuits
- (D) To supply the power to the motor circuits

Correct Answer : B

35). What is the pick-up voltage in a over voltage relay indicated?

- (A) Working voltage of relay
- (B) Maximum voltage rating of relay
- (C) Minimum voltage rating of relay
- (D) Minimum voltage to start the relay

Correct Answer : D



36). Why sequential control of motors are required in an industrial application?

- (A) To share more loads
- (B) To reduce power consumption
- (C) To minimise the operating cost
- (D) To increase the accuracy of operation

Correct Answer : D

- (C) ELCB trips permanently
- (D) ELCB will not trip on leakage

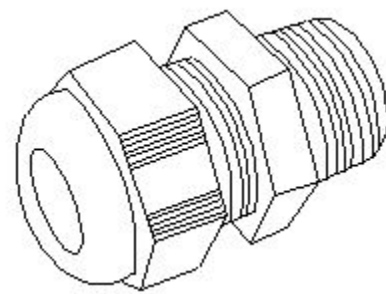
Correct Answer: C

37). Which switch is operated at OFF load condition?

- (A) Limit switch
- (B) Isolating switch
- (C) Two way switch
- (D) Push button switch

Correct Answer : B

41). What is the name of accessory used in control panel wiring as shown in the figure?



- (A) Lugs
- (B) Thimble
- (C) Grommet
- (D) Terminal connector

Correct Answer: C

38). Why control panels are provided with control transformer?

- (A) To maintain the rated voltage
- (B) To operate the auxiliary circuits
- (C) To maintain the rated load
- (D) To supply reduced voltage to power circuit

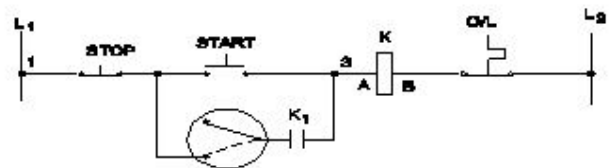
Correct Answer : B

39). What is the function of relay in the operation of circuit breaker?

- (A) Measure the abnormal condition and send the close command
- (B) Measure the abnormal condition and display the value
- (C) Senses the abnormal condition and display the value
- (D) Senses the abnormal condition and send the trip command

Correct Answer : D

42). What is the name of the control circuit as shown in the figure?



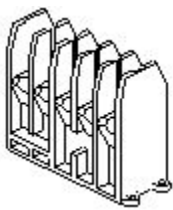
- (A) Remote control circuit
- (B) Jog control using a relay
- (C) Inching control circuit with push motor
- (D) Jogging control circuit with selector switch

Correct Answer: D

40). What is the effect, if the test button marked as 'X' is closed permanently in ELCB as shown in the figure?

- (A) ELCB trips intermittently
- (B) ELCB functions normally

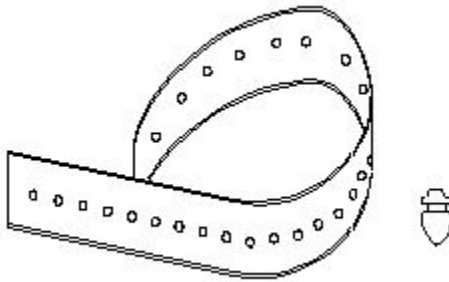
43). What is the part name of the contactor as shown in the figure?



- (A) Contact support
- (B) Protective housing
- (C) Magnetic coil
- (D) Support for the yoke

Correct Answer: B

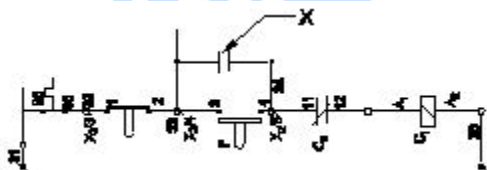
44). What is the name of the accessory used in control panel wiring as shown in the figure?



- (A) Wire ferrules
- (B) Wire sleeves
- (C) Nylon cable ties
- (D) Cable binding straps and button

Correct Answer: D

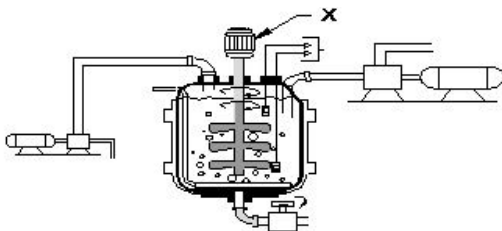
45). What is the name of the device marked as 'X' as shown in the figure?



- (A) Stop button
- (B) Start button
- (C) Main contact
- (D) Auxiliary contact

Correct Answer: D

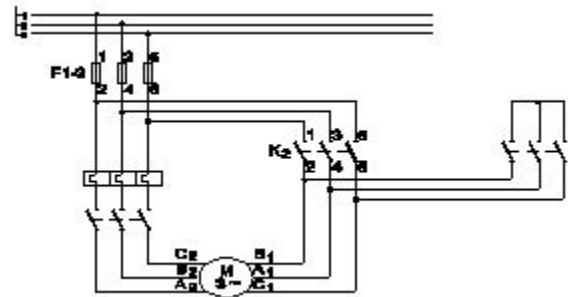
46). What is the name of the part marked as "X" in industrial agitator system as shown in the figure?



- (A) Discharge pump
- (B) Agitator tank
- (C) Feed pump
- (D) Agitator motor

Correct Answer: D

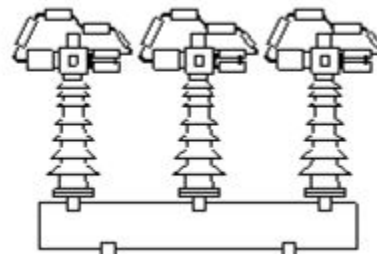
47). What is the name of the circuit as shown in the diagram?



- (A) Power circuit of star delta starter
- (B) Control circuit of star delta starter
- (C) Power circuit of rotor resistance starter
- (D) Control circuit of rotor resistance starter

Correct Answer: A

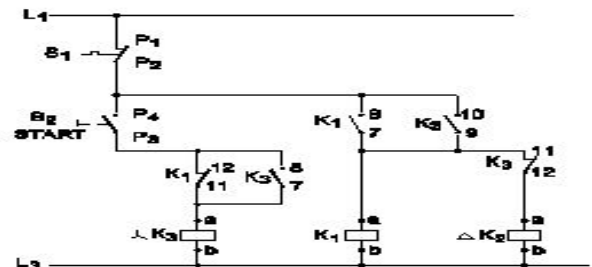
48). What is the name of circuit breaker as shown in the figure?



- (A) Oil circuit breaker
- (B) Air blast circuit breaker
- (C) Vacuum circuit breaker
- (D) Air break circuit breaker

Correct Answer: B

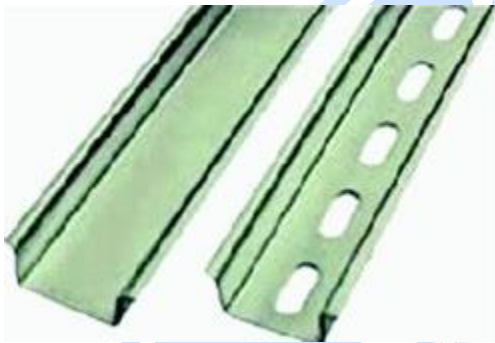
49). What is the name of the circuit as shown in the diagram?



- (A) Control circuit of fully automatic star delta starter
- (B) Power circuit of fully automatic star delta starter
- (C) Control circuit of semi automatic star delta starter
- (D) Power circuit of semi automatic star delta starter

Correct Answer: C

45). What is the name of the wiring accessory used in control panel wiring as shown in the figure?



- (A) DIN rails
- (B) G channel
- (C) Grommets
- (D) Race ways

Correct Answer: A

