BASIC RELAY CIRCUITS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. The three main parts of a relay are the coil, the iron core and the contacts. Draw a diagram showing the basic construction of a relay.

2. Briefly explain the function of each of the three main parts of a relay.
3. a Relay is also a switch that connects or disconnects two circuits. But instead of a manual operation, a relay uses an electrical signal to control an electromagnet, which in turn connects or disconnects another circuit. a)

   b) _____

   _____

   c) _____

   _____

4. Explain the meaning of a relay being:

   a) de-energised – relay is deactivated when the power supply fails and the NO contact opens

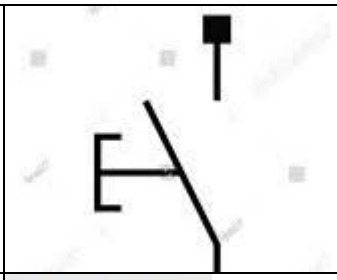
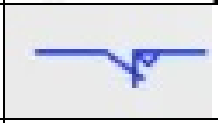
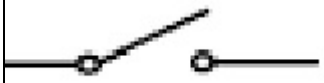
_____

_____

a) energised. -

if a relay is “normally energised”, this means that the relay is energised (powered up) during normal operation, while “normally de-energised” refers to a relay that is de-energised (not powered up) during normal operation.

6. Draw the Australian Standard drawing symbol for each of the following components:

normally open pushbutton	
normally closed pushbutton	
normally open relay contact	
normally closed relay contact.	

7. Explain the difference in operation between a manual switch and a pushbutton switch.

What is the difference between manual switch and push button switch?
Both pushbuttons and switches are actuated to allow a controlled flow of current. A switch remains in its position after being actuated. A pushbutton, on the other hand, jumps back to its initial position and is thus only the pulse generator. The difference therefore lies purely in the mechanism underlying both.

8. What is the purpose of using a latching contact in a relay circuit?

It is used in applications where we need to control a very large electric current using a very small current. The latching relay coil consumes power only during switching ON and even after releasing the switch, its movable contacts remain in the switching mode position.

9. Using semi-detached symbols, draw a circuit diagram for the circuit that operates in the following manner:

- Closing a manual switch S1 energises a relay coil R
- energising the relay coil causes a pilot light L1 to turn on via a set of relay contacts R1
- energising the relay coil causes a pilot light L2 to turn off via a set of relay contacts R2

10. Draw the circuit diagram for the circuit that operates in the following manner:
    a) the coil of a relay R/4 has on/off control provided by two pushbuttons S1 and S2
    b) when the relay is de-energised lamp L1 is to be on and lamp L2 is to be off
    c) the relay has two normally open and two normally closed contacts
    d) when the on pushbutton (S1) is pressed the relay is to be held in the energised condition by a latching contact.

11. What is the purpose of wire numbering as used on a circuit diagram?

    _____

    _____

12. Describe the operation of the circuit shown in figure 1. Assume the circuit is originally de-energised.

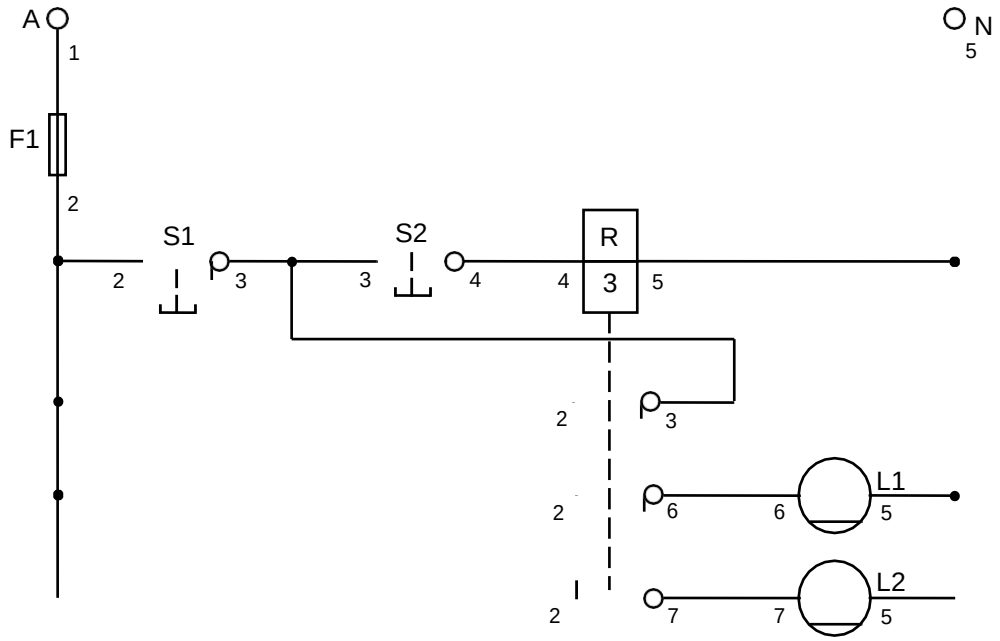


Figure 1

S1 is pressed , Current reaches Point 3, when S2 is pressed, Relay R/3 is energized.

R3 close the contactors so the current follows into L1 and L2

L1 and L2 on

The circuit is to be off by releasing S1 or S2 or both

RELAY CIRCUITS & DRAWING CONVENTIONS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. List five factors that must be considered when selecting a control relay.
2. Size.
3. Switching speed & frequency.
4. Mechanical durability.
5. Surge current durability.
6. Voltage rating.
7. Operating environment.
8. Isolation between control & load circuits.
9. Multiple contacts.
10.

i. _____

ii. _____

iii. _____

iv. _____

v. _____

11. Briefly explain the advantages of detached relay symbols.

Detached Relay" mode implies that I can trigger a scene based upon the switch(es) changing state,

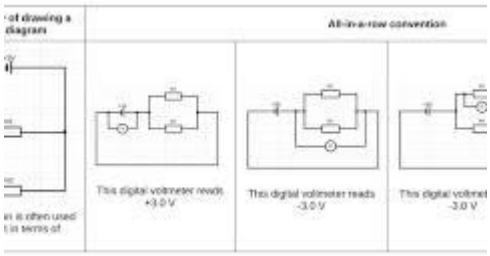
he states of external switches and relay are separated, so operating the external switch button won't affect relay state

12. A relay is labeled $\boxed{\frac{R}{3}}$ What does the number 3 identify?

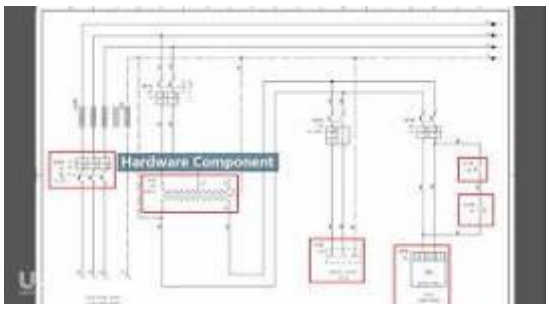
It is 3 contactors

13. What are the two acceptable methods for the drawing of circuit diagrams and what are the drawing conventions applicable to each?

i. Schematics Diagram



ii. Wiring Diagram



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14. Using detached relay symbols draw the circuit diagram for a start-stop station controlling a control relay CR. The control relay is to control a second relay R1. Relay 1 is to be energised when the control relay CR is de-energised and de-energised when the control relay CR is energised.

15. Using the grid on the next page convert the circuit diagram shown in figure 1 to a

circuit diagram that has a **vertical** layout.

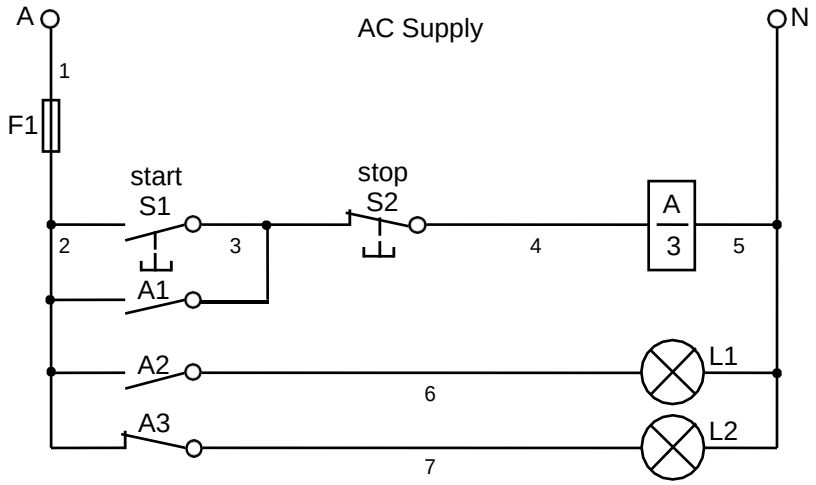
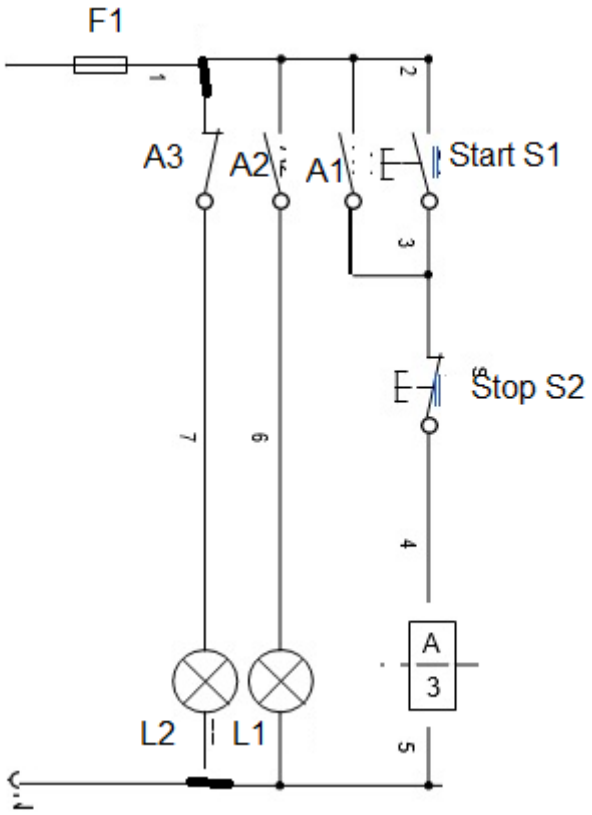


Figure 1



REMOTE STOP-START CONTROL &

ELECTRICAL INTERLOCKING

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. If a number of start pushbuttons are to be connected into a control circuit, how must the start buttons be connected with respect to one another?

   In parallel

2. If a number of stop pushbuttons are to be connected into a control circuit, how must the stop buttons be connected with respect to one another?

   In series

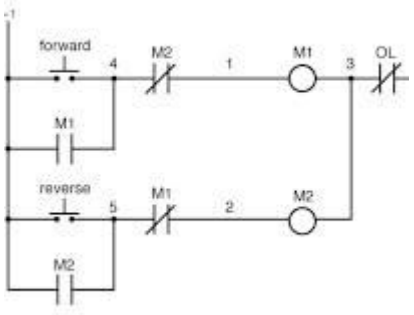
3. What is meant by the term start-stop station?

   A circuit **that features a single push button built-in for powering on and off electric** equipment, including machines or motors.

4. What is the purpose of electrical interlocking?

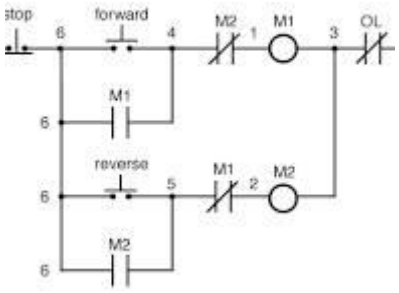
An electrical interlock is an interlock that is used to restrict current flow between two or more devices. These types of interlocks use normally open and normally closed contacts to prevent another device from turning on.

5. Draw the circuit diagram of a relay controlled from a single start-stop station. Once energised the relay is to latch.

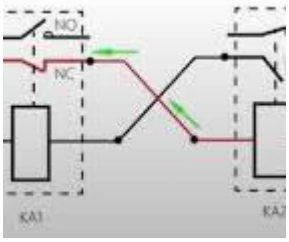


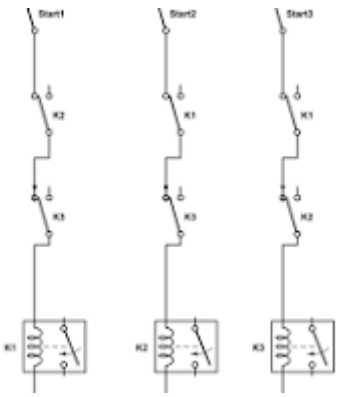
6.

7. Draw the circuit diagram of a relay controlled by both local and remote start-stop stations. Once energised from either location the relay is to latch.



8. Draw a circuit diagram showing how two relays can be interlocked, such that only one relay can be energised at any one time. In your diagram you need only show the coils of the two relays and the interlock contacts.





9. Draw the circuit diagram for a circuit that has to operate as follows -
   - S1, S3 and S5 are normally open pushbuttons
   - S2, S4 and S6 are normally closed pushbuttons
   - pushbuttons S1 and S2 provide start-stop control for relay R1
   - when relay R1 is energised lamp L1 turns on
   - pushbuttons S3 and S4 provide start-stop control for relay R2
   - relay R2 is also controlled by a remote start-stop station, comprised of S5 and S6.
   - when relays R1 & R2 are de-energised, lamp L2 turns on

   Use a horizontal layout and include on your diagram wire numbers, line numbers and relay brackets.

10. Draw the circuit diagram for a circuit that has to operate as follows -

- when power is first applied to the circuit and before any pushbutton is pressed, all relays will be de-energised, lamps L1 and L2 will be off and lamp L3 will be on
- relay R1 will be energised by pressing pushbutton S1 and de-energised by pressing either pushbuttons S2 or S3
- lamp L1 will light when relay R1 is energised
- relay R2 will be energised by pressing pushbutton S4
- relay R2 can only be energised if relay R1 is already energised
- if relay R2 is energised, it will remain energised if relay R1 is de-energised
- to de-energise relay R2, pushbutton S5 must be pressed
- lamp L2 will turn on when relay R2 is energised
- lamp L3 will turn off when relay R2 is energised.

Use a horizontal layout and include on your diagram wire numbers, line numbers and relay brackets.

FAULT FINDING ELECTRIC CIRCUITS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. List four commonly used items of test equipment used to test and fault find electrical control circuits?

- Voltmeter (Measures voltage)
- Ohmmeter (Measures resistance)
- Ammeter,
- Continuity tester

2. What instrument is used to measure insulation resistance?

IR tester

3. what is the minimum acceptable insulation resistance for -
   a) general wiring 1M Ohm
   b) motor windings 1M Ohm
   c) heating elements 0.01 M Ohm

4. When using an ohmmeter to measure the resistances associated with a control circuit, what value of resistance would you expect to measure for -
   a) the coil of a working relay between 50 ohms and 200 ohms.
   b) a set of normally open relay contacts Infinity
   c) a set of normally closed relay contacts Zero
   d) a blown fuse Infinity

5. List five things that can be done within control circuits to prevent the occurrence of faults?

- Inspect ywiring regularly for damage.
- Have a dedicated circuit for energy-intensive appliances such as air conditioners.
- Don't overload a circuit with too many connections or by piggybacking powerboards onto powerboards.
- Regularly inspect switchboard for faults.
- Protective relays and relaying systems detect abnormal conditions like faults in electrical circuits and automatically operate the switchgear to isolate faulty equipment from the system as quick as possible. This limits the damage at the fault location and prevents the effects of the fault spreading into the system.

6. What type of fault is most likely if a circuit breaker, protecting a control circuit, repeatedly trips when reset?

Ground Fault SurgesWhen this happens, an excess flow of electricity will generally occur, which in turn causes the circuit breaker to trip. These kinds of electrical issues are not only inconvenient and dangerous, but they are also annoying. If your breaker trips often, it puts your home at risk of an electrical fire

7. Can the condition that is open or closed, of a set of relay contacts, be checked in circuit using an ohmmeter without firstly disconnecting at least one connection to the contacts? If not, why not?

No , the electricity will be present from other related parts

8. If on opening the panel of a control circuit a distinct smell of burnt varnish is detected, what is a possible circuit problem or fault?

Over heating , burn out and short circuit has occurred .

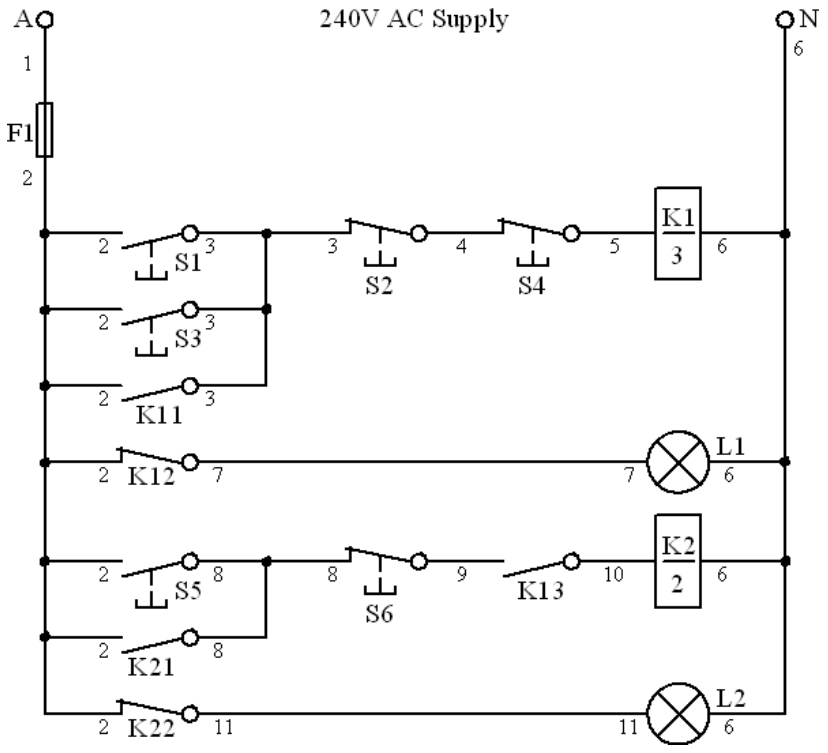

A
240V AC Supply
N
1
6
F1
2
2
S1
3
3
S2
4
S4
5
K1
3
6
2
S3
3
2
K11
3
2
K12
7
7
L1
6
2
S5
8
8
S6
9
K13
10
K2
2
6
2
K21
8
2
K22
11
11
L2
6

Figure 1

9. Determine the probable faults in the circuit of figure 1, if the following symptoms existed -

a) Relay K1 will not operate when S1 is pressed. The voltage across the coil of the relay, with S1 pressed, is 240V.

Open circuit of K1

b) Relay K1 will not operate when S1 is pressed. A voltmeter connected between wires 2 and 3 measures 240V when S1 is pressed.

S1 is open it can not be closed .

c) Relay K1 will not latch after S1 is pressed.

Latch mechanism is mal function

d) Lamp L1 does not light when power is applied to the circuit. The voltage measured between wires 2 and 6 is 240V and between wires 2 and 7 is 240V.

K 1-2 contactor is jammed and not closed

e) Relay K2 will not operate. With relay K1 energised and S5 pressed, a voltmeter connected between wires 8 and 9 measures 240V.

S 6 was jammed, opened

f) Relay K2 will not operate. A voltmeter connected between the coil neutral and the supply neutral shows a reading similar to the supply voltage when S5 is pressed.

Relay K2 was open

g) The fuse blows at the instant that S1 is pressed.

Short circuit of K1

h) The circuit does not operate at all. A voltmeter connected between wires 1 and 6 shows supply voltage, when connected between wires 2 and 6 the voltmeter shows zero voltage.

Fuse has already blown out

i) Lamp L2 does not light. A voltmeter connected across the shows supply voltage.

Lamp L2 burnt out

j) Relay K2 will not de-energise when S6 is pressed.

S6 was jammed

TIME DELAY RELAYS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. What are the names given to the two general classifications of time delay relay?

Types of Time Delay Relays. ON-delay timers and OFF-delay timers are two common types of time delay relays and solid state timers.

2. What is the difference between the operation of the contacts on a control relay and a time delay relay?

Timing relays are similar to other relays in that they too use a coil to control the operation of contacts. The primary difference between a control relay and a timing relay is that the contacts of the timing relay delay changing their position when the coil is energized or de-energized.1 Dec 20

3. Describe the meaning of the terms -
   a) on delay

An on-delay time relay is a timing device that keeps contacts open or closed until the preset time has elapsed. After that, the contacts will close or open, thereby energizing or de-energizing the output. The time period for delay starts when an input voltage is applied to the device

   b) off delay, as applied to time delay relays

An **off delay** timer is an electrical device uses a delay function to control when a device or system is turned off.

4. Draw the Australian Standard drawing symbols for-

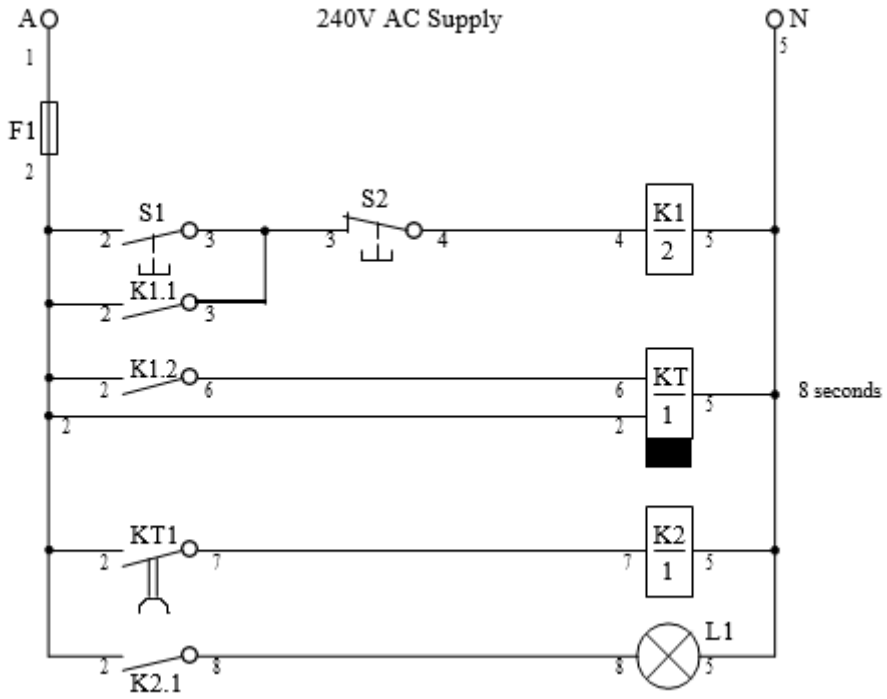
the coil of an on delay timing relay		the coil of an off delay timing relay	
a normally-open contact which is time delayed to close	 Power on delay closed of normally open contact	a normally-closed contact which is time delayed to open	 Power off delay opened of normally open contact
a normally-open contact which is time delayed to re-open	 Power on delay opened of normally closed contact	a normally-closed contact which is time delayed to re-close.	 Power off delay closed of normally closed contact

5. List six factors that must be considered when selecting a time delay relay for a particular application.

- Timer relays are very versatile in that they provide the basic switching or controlling function as mentioned above. Timer relays also provide timing functions in the circuit.
- They are small in size and offer unequalled performance in their role.
- Timer relay contacts are generally rated for 5 to 10amp resistive loads, and can often be supplied with solid state output contacts for lower level switching applications.
- Timing functions for timer relays include but are not limited to: on-delay, off-delay, and interval/one-shot modes.
- Due to their inherent compact size, timer relays can be implemented into a very broad range of applications without using up large amounts of often scarce panel space.
- Ease of use is another benefit of timer relays, as most models are designed to plug into a socket or other standard connection system, thus allowing for prewiring of the connections and insertion of the timer relay when ready.
- Timing values may be set by an analog dial and knob, digitally with a keypad, with dipswitches, jumpers, thumbwheels, or other simple means.
- Timer relays with fixed timing values are common, for use in applications where timing set points are not expected or intended to be adjustable.

6. An on-delay timer has a set of normally open contacts which are time delayed to close. The timer is set for a time delay of 15 seconds. State whether the contacts would be open or closed for each of the following conditions -
   a) prior to power being applied to the coil of the timer Open
   b) 5 seconds after power is applied to the timer coil _ Open
   c) 20 seconds after power is applied to the coil of the timer Close
   d) power has been removed from the coil of the timer, after the timer had timed out. Open

7. An off-delay timer has a set of normally open contacts which are time delayed to re-open. The timer is set for a time delay of 10 seconds. State whether the contacts would be open or closed for each of the following conditions –
   a) prior to power being applied to the coil of the timer Close
   b) 5 seconds after power is applied to the timer coil _ Close
   c) 20 seconds after power is applied to the coil of the timer Open
   d) 5 seconds after power has been removed from the coil of the timer Close
   e) 15 seconds after power has been removed from the coil of the timer. Open



8. Describe the operation of the circuit shown in figure 1. In doing so describe the condition of the four power consuming devices for each of the following conditions –

a) power applied, but prior to S1 being pressed

K1 No energize, KT energize K2 not energized/L1 off

b) immediately after S1 has been pressed

K1 Energize, KT Energize, KT1 not yet closed , K2 not energize
L1 still off

c) immediately after S2 has been pressed

K1 Deenergize , KT energize, K2 not energize, L1 off

d) 10 seconds after S2 has been pressed.

K1 Deenergize , KT energize, K2 not energize, L1 off

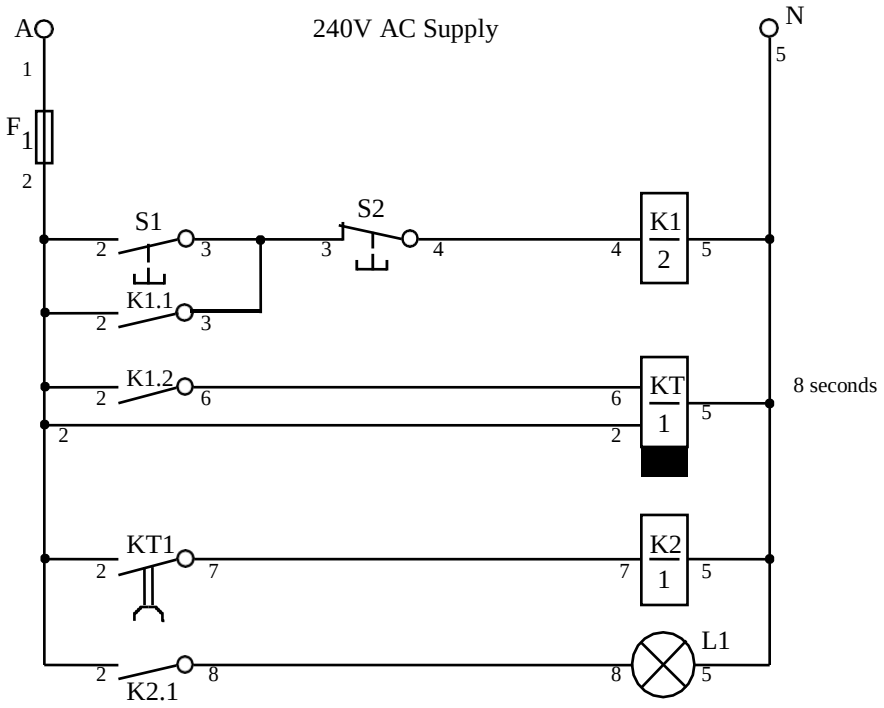

A
240V AC Supply
N
1
5
F1
2
S1
S2
2
3
3
4
4
K1
2
5
K1.1
2
3
K1.2
2
6
6
KT
1
5
8 seconds
2
2
KT1
2
7
7
K2
1
5
L1
2
8
8
5
K2.1

Figure 1

9. Develop and draw the circuit diagram for a circuit that operates in accordance with the following -

   - relay R1 is energised and de-energised by pushbuttons S1 and S2 respectively
   - energising relay R1 allows it to latch and causes -
     - pilot light L1 to turn on, relay R2 to energise and latch, and the on-delay timer T1 to energise
   - after a delay of 10 seconds, the timer contacts cause relay R1 to de-energise, which in turn will turn off L1 and energise relay R3
   - energising relay R3 causes pilot light L2 to turn on
   - operation of pushbutton S2 will de-energise all relays and all lights.

CIRCUITS USING CONTACTORS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. List the 4 major parts of a contactor.

- Coil. A coil is an electromagnet that generates a magnetic field when energized. ...
- Contact. The contacts are the switching elements of the contactor.
- Shell. ...
- Auxiliary contacts.

2. Explain the difference between a relay and a contactor?

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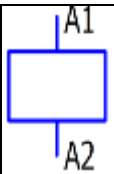
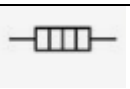
Search Results

Featured snippet from the web

The main difference between a contactor and a relay is their load capacity. Contactors are designed to handle high currents, typically above 15 amps, while relays are more suitable for low to medium current loads, usually below 15 amps.

3. Draw the Australian Standard symbols for the following parts –

Contactor coil		Power contacts Normally Open	
Auxiliary contacts Normally Open		Auxiliary contacts Normally Closed	

TOL Heaters		TOL N/C Auxiliary contact	

4. List five factors that must be considered when selecting a contactor for a particular application.

- The definition of the actual application requirements. ...
- The inductance in the circuit. ...
- Bidirectional applications. ...
- Consideration of the short circuit. ...
- Mechanical and electrical service life.

5. List three typical applications for contactors.

Contactors are used to control electric motors, lighting, heating, capacitor banks, thermal evaporators, and other electrical loads.

6. What is the difference between a two pole, a three pole and a four pole contactor?

A three-pole breaker is generally used on a 3-phase system and switches all three “hot legs” of the system and provides for short circuit and overload protection of those legs. A four-pole breaker has one additional pole that switches the neutral leg of the system but generally contains no protection for that leg and simply isolates it. A four-pole is often used where more than one source, such as a back-up generator, is available to provide power to a system.

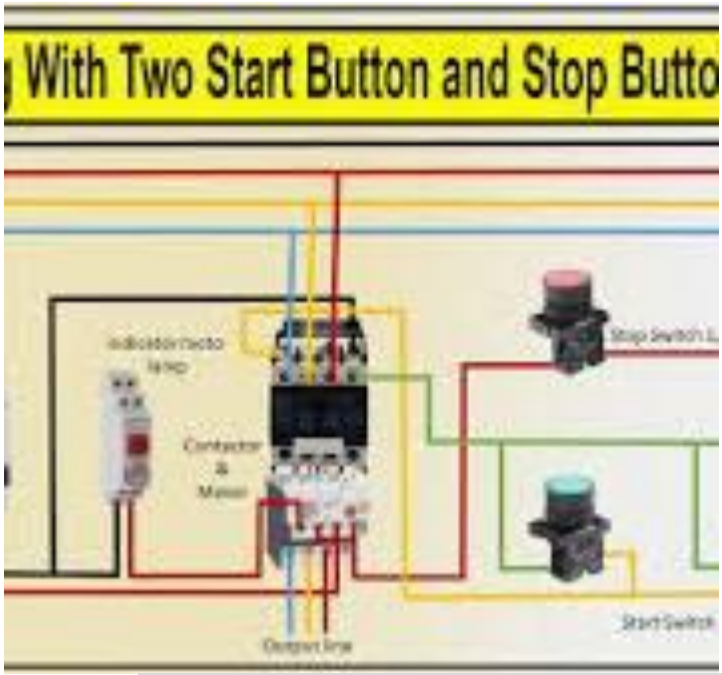
7. List four factors that must be considered when selecting a thermal overload for a particular application.

• Application requirements • Cost per feature of a given technology • Willingness and ability of all parts of the user’s organization to embrace and implement the new technology

capacity

8. Draw the circuit diagram for a circuit that operates as follows -

   - a start-stop station is to control two, single phase, 240V heating elements - element A and element B
   - each element is to be switched individually by a its own contactor
   - if the total current taken by the elements becomes excessive a thermal overload will operate and disconnect only element A.



9. Draw the circuit diagram, including both power and control circuits, for a circuit that operates in accordance with the following -

    - a single phase 240V motor is to be controlled by a contactor K2 and protected by a thermal overload and a 10A circuit breaker
    - the control circuit is protected by a 2A circuit breaker
    - a start-stop station is used to switch a control relay K1
    - energising K1 causes a time delay relay KT to energise
    - after a time delay of 15 seconds the contactor K2 energises
    - if the thermal overload trips the entire control circuit is to be de-energised
    - a pilot light L1 is to be included to indicate when the motor is running.

JOGGING CIRCUITS

Please note the following requirements in relation to tutorial work –

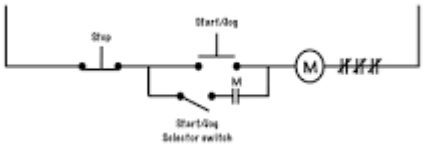
- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. Explain the meaning of the term jogging as applied to an electric motor.

Jogging is running at a gentle pace; its definition, as compared with running, is not standard. In general, jogging speed is between 4 and 6 miles per hour (6.4 and 9.7 km/h). Running is sometimes defined as requiring a moment of no contact to the ground, whereas jogging often sustains the contact.

2. In what type of application would you expect to find a jog circuit and explain why it would be used in that situation?

A jog circuit is a circuit that allows an operator to either start the motor or " jog " the motor and are commonly used for motors controlling conveyor belts to allow for precise positioning of materials.



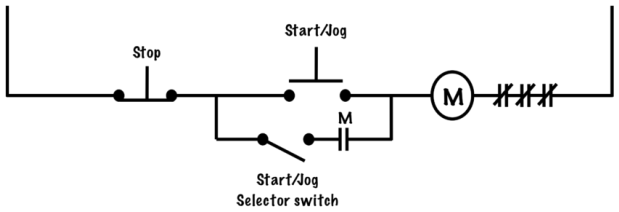
3. List three different methods of achieving jog control of an electric motor.

_____

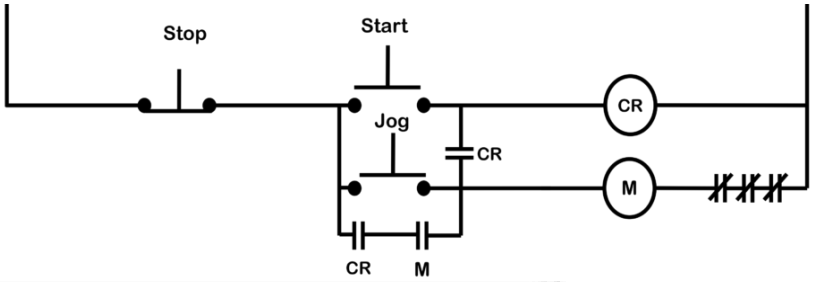
_____

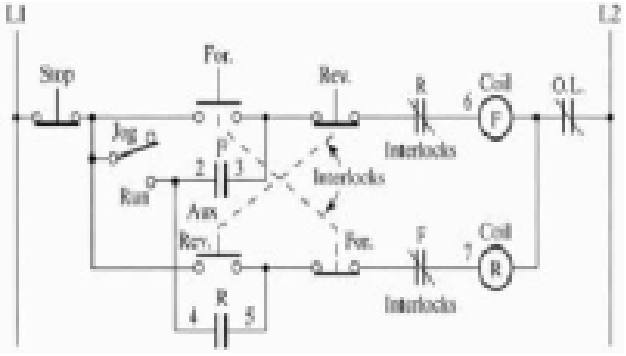
_____

og Circuit with Selector Switch



Jog Circuit with Control Relay





Forward reverse jog

4. What does a double pole jog button consist of and how must its contacts be arranged?

_____

The double pole rocker switch is a panel-mounted device consisting of a button **which, once pressed,**

_____

remains fixed in position until further ...

5. Which type of motor is more likely to be jog controlled, single phase or three phase?

_____

Three phase

6. List six factors that must be considered when selecting a pushbutton for a particular application.

_____

_____

_____

_____

_____

_____

1. he first is a **specific type of button assembly** that you actually push on a panel.
2. The second is the **general group of components, or mechanical man/machine interface products**, which includes: *Indicating Lights*, *Selector Switches*, *Potentiometers* — and pushbuttons — by which people interact with machines.

7. Draw the circuit diagram, both power and control circuits, for a 3-phase direct on line (DOL) motor starter that has the following -

    - A local start-stop control
    - thermal overload protection
    - a remote start-stop station.

8. Draw the circuit diagram, both power and control circuits, for a 3 phase direct on line (DOL) motor starter that has the following -

    - start-stop control via pushbuttons
    - thermal overload protection
    - jog control via a double pole jog pushbutton.

9. Draw the circuit diagram, including both power and control circuits, for a circuit that operates in accordance with the following -

   - two 3-phase induction motors are to be individually protected using circuit breakers and thermal overloads
   - when power is applied to the circuit, and before any pushbuttons are pressed, both motors are stopped
   - motor 1 may be started and stopped by using pushbuttons S1 and S2 respectively
   - motor 2 may be started and stopped by using pushbuttons S3 and S4 respectively
   - motor 2 may also be jogged by pushbutton S5. Jog control is provided by a control relay
   - motor 2 cannot run or jog unless motor 1 is running
   - the available supply is 3-phase plus neutral
   - the control circuit is to be supplied with 240V.

CONVERTING WIRING DIAGRAMS
TO CIRCUIT DIAGRAMS

Please note the following requirements in relation to tutorial work –

- All diagrams are to be drawn using appropriate drawing instruments. **Drawings are not to be freehand**.
- All circuit diagrams are to be drawn on **5mm graph paper**.

1. What are the functions of a wiring diagram?

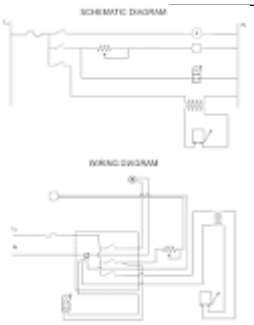
They display how the wires are connected and located in the actual device. They include information on wire colors, sizes, splices, and insulating materials, as well as the physical connectors between all the components.

2. List the differences between a wiring diagram and a circuit diagram.

A schematic shows the plan and function for an electrical circuit, but is not concerned with the physical layout of the wires. Wiring diagrams show how the wires are connected and where they should located in the actual device, as well as the physical connections between all the components.

3. Why is it necessary to be able to convert a wiring diagram to a circuit diagram?

Why is it necessary to convert a circuit diagram to a wiring diagram?



A schematic shows the plan and function for an electrical circuit, but is not concerned with the physical layout of the wires. Wiring diagrams show how the wires are connected and where they should located in the actual device, as well as the physical connections between all the components.

4. The conversion of a wiring diagram to a circuit diagram is usually carried out in two steps. What are the two steps?

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5. Convert the wiring diagram of figure 1 to a circuit diagram.

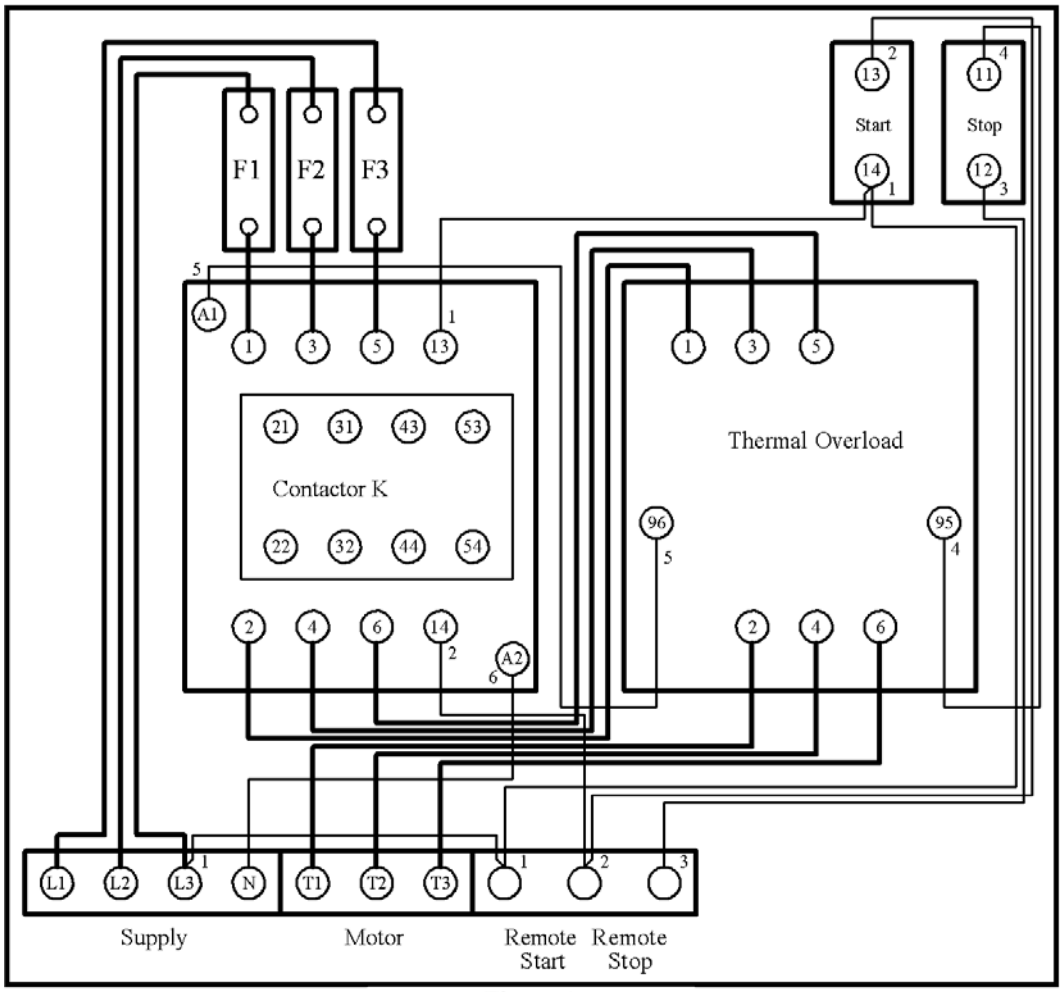


Figure 1

6. Convert the wiring diagram of figure 2 to a circuit diagram.

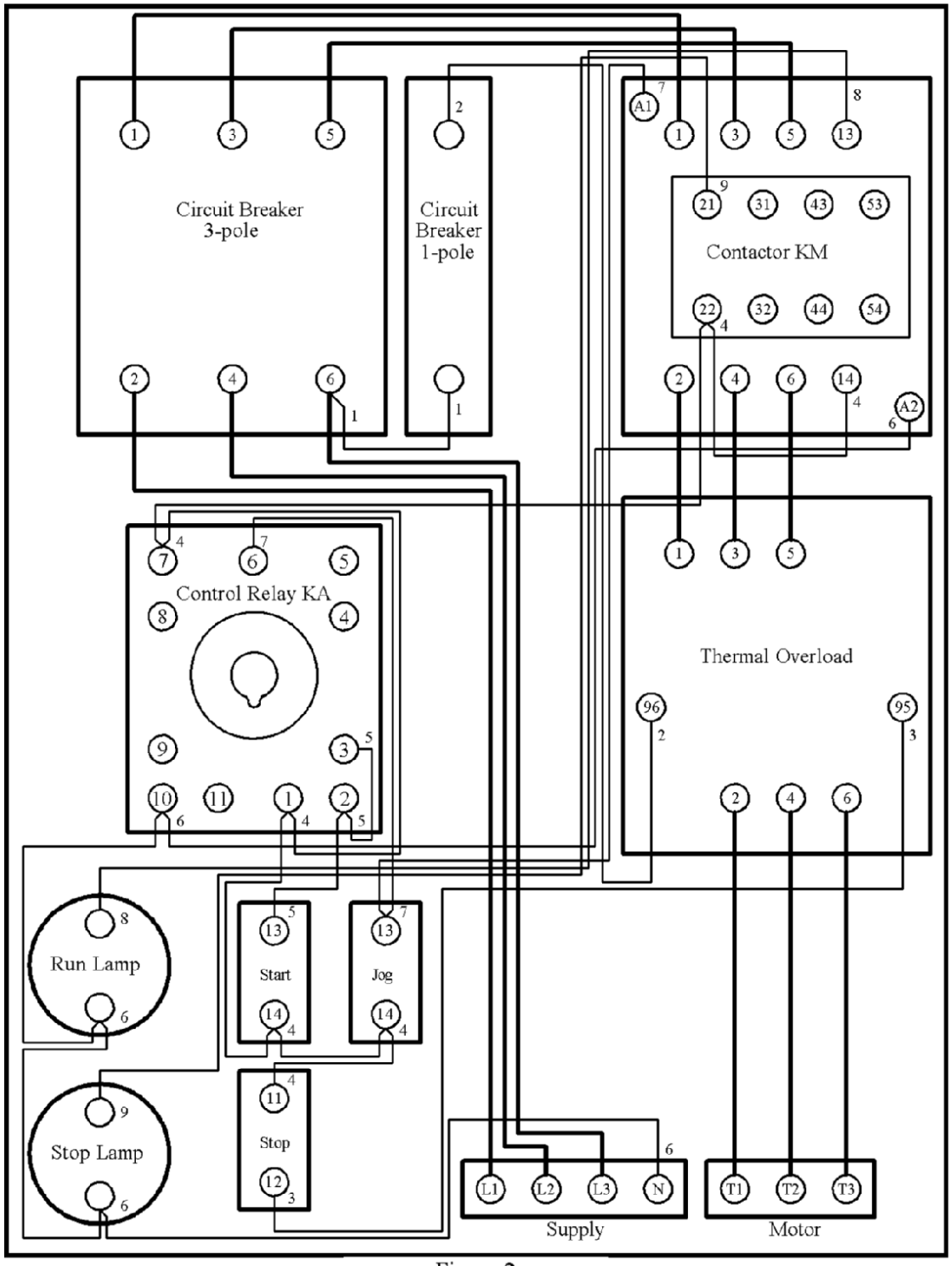


Figure 2

CONTROL DEVICES

SECTION A

1. Name the six parts of a limit switch.

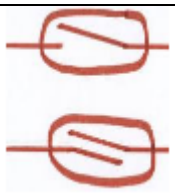
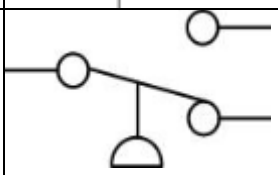
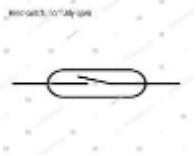
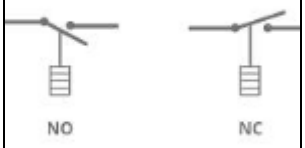
Limit switches consist of an actuator with operating head, the switch body mechanism, and a series of electrical terminals that are used to connect the switch to the electrical circuit that it is controlling.19 Dec 20

A Limit Switch is a detection switch which consists of a basic switch in a metal or resin case. The strong outer case protects the inside of the switch from external forces, moisture, oil, dust and dirt so that it can be used in locations that demand mechanical strength and environmental resistance.

2. Why would a control circuit include limit switches?

A limit switch can be used for controlling machinery as part of a control system, as a safety interlock, or as a counter enumerating objects passing a point. Limit switches are used in a variety of applications and environments because of their ruggedness, ease of installation, and reliability of operation.

3. Sketch the circuit symbol for the following.

Normally open limit switch		Normally open photoelectric cell	
Normally closed mechanical reed switch		Normally open pressure switch	
Normally open electronic reed switch		Normally closed temperature switch	

4. What is the major difference between a proximity detector (switch) and a limit switch?

Proximity Sensors detect an object without touching it, and they therefore do not cause abrasion or damage to the object. Devices such as limit switches detect an object by contacting it, but Proximity Sensors are able to detect the presence of the object electrically, without having to touch it.

5. What are the two classifications of proximity switches?

Inductive proximity switches sense the presence of metallic objects through the use of a high-frequency magnetic field. Capacitive proximity switches sense the presence of non-metallic objects through the use of a high-frequency electric field.

6. What are three classifications of photo-electric detectors?

There are three major types of photoelectric sensors: thru-beam, retroreflective, and diffused. Each sensor has its own strengths and can be used in a variety of ways.

7. What is meant by the “trip setting” and the “differential setting” for temperaturesensors?

The trip-current setting Ir or Irth (both designations are in common use) is the current above which the circuit-breaker will trip. It also represents the maximum current that the circuit-breaker can carry without tripping.

What does differential setting mean?

This term is used to describe the difference in temperature between the setting on the thermostat which triggers the unit to turn on, and the temperature the thermostat is set at.9

Notes

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