

Types Of Electrical Switches

Associated circuit protection, control, and distribution devices within a building's wiring system are subject to voltage, current, and functional specifications. Wiring safety codes (including wiring colours) vary by locality, country, or region. The International Electrotechnical Commission (IEC) is attempting to harmonise wiring standards among member countries, but significant variations in design and installation requirements still exist. 03467c6821 An Automatic Transfer Switch (ATS) is often installed where a backup generator is located, so that the generator may provide temporary electrical power if the utility source fails. 03467c6821 == Wiring methods == 03467c6821

Transfer switch Some transfer switches are manual, in that an operator effects the A transfer switch is an electrical switch that switches a load between two sources. Some transfer switches are manual, in that an operator effects the transfer by throwing a switch, while others are automatic and trigger when they sense one of the sources has lost or gained power. A transfer switch is an electrical switch that switches a load between two sources 03467c6821

US patent 4012608, filed in 1975 by Joseph Lockard, is a DIP switch with sliding levers, the modern DIP switch. 03467c6821 Switches are made in many different configurations; they may have multiple sets of contacts controlled by the same knob or actuator, and the contacts may operate simultaneously, sequentially, or alternately. A switch may be operated manually, for example, a light switch or a keyboard button, or may function as a sensing element to sense the position of a machine part, liquid level, pressure, or temperature, such as a thermostat. Many specialized forms exist, such as the toggle switch, rotary switch, mercury switch, push-button switch, reversing switch, relay, and circuit breaker. A common use is control of lighting, where multiple switches may be wired into one circuit to allow convenient control... 03467c6821 A resistive network is a network containing only resistors and ideal current and voltage sources. Analysis of resistive networks is less complicated than analysis of networks containing capacitors and inductors. If the sources are constant (DC) sources, the result is a DC network. The effective resistance and current distribution properties of arbitrary resistor networks can be modeled in terms of their graph measures and geometrical properties. 03467c6821 DIP switches are an alternative to jumper blocks. Their main advantages are that they are quicker to change and there are no parts to lose. 03467c6821 Contacts can be produced from a wide variety of materials. Typical materials include: 03467c6821 == History == 03467c6821 Wiring is subject to safety standards for design and installation. Allowable wire and cable types and sizes are specified according to the circuit operating voltage and electric current capability, with further restrictions on the environmental conditions, such as ambient

temperature range, moisture levels, and exposure to sunlight and chemicals. 03467c6821 == History, culture, examples, and style == 03467c6821

Switch another. The most common type of switch is an electromechanical device consisting of one or more sets of movable electrical contacts connected to external In electrical engineering, a switch is an electrical component that can disconnect or connect the conducting path in an electrical circuit, interrupting the electric current or diverting it from one conductor to another. The most common type of switch is an electromechanical device consisting of one or more sets of movable electrical contacts connected to external circuits. When a pair of contacts is touching, current can pass between them, while the contacts are separated no current can flow 03467c6821

== Classification == 03467c6821

Mercury switch Electrically driven attitude indicators typically use mercury switches to keep the gyro A mercury switch is an electrical switch that opens and closes a circuit when a small amount of the liquid metal mercury connects metal electrodes to close the circuit. concerns. Tilt switches sound an alarm if a worker falls over. There are several different basic designs (tilt, displacement, radial, etc.) but they all share the common design strength of non-eroding switch contacts 03467c6821

Electrical wiring Electrical wiring is an electrical installation of cabling and associated devices such as switches, distribution boards, receptacles, outlets, and light Electrical wiring is an electrical installation of cabling and associated devices such as switches, distribution boards, receptacles, outlets, and light fittings in a structure 03467c6821

A pressure switch for sensing fluid pressure contains a capsule, bellows, Bourdon tube, diaphragm or piston element that deforms or displaces proportionally to the applied pressure. The resulting motion is applied, either directly or through amplifying levers, to a set of switch contacts. Since pressure may be changing slowly and contacts should operate quickly, some kind of over-center mechanism such as a miniature snap-action switch is used to ensure quick operation of the contacts. One sensitive type of pressure switch uses mercury switches mounted on a Bourdon... 03467c6821 Another type of pressure switch detects mechanical force; for example, a pressure-sensitive mat is used to automatically open doors on commercial buildings. Such sensors are also used in security alarm applications such as pressure sensitive floors. 03467c6821 US patent 3621157, filed in 1970 by Pierre Schwab, is the earliest known DIP switch patent, which discloses a rotary style DIP switch. 03467c6821 From around 1905 to 1910 various mercury switches were invented, but the "mercury in glass envelope" switch got its start with patent 1598874 (filed on January 19, 1922 by Louis Phelan), which evolved into a more modern mercury... 03467c6821 Vandal-resistant switches are usually protected by the use of robust

materials, such as thick... 03467c6821

DIP switch This type of switch is designed to be used on a printed circuit board along with other electronic components and is commonly used to customize the behavior of an electronic device for specific situations. The values of all switches in the package can also be interpreted as one number. For example, seven switches A DIP switch is a manual electric switch that is packaged with others in a group in a standard dual in-line package (DIP). The term may refer to each individual switch, or to the unit as a whole. switch to select a one-bit binary value 03467c6821

Light switch Light switches are also found in flashlights, vehicles, and other devices. Manually operated on/off switches may be substituted by dimmer switches that allow controlling the brightness of lamps as well as turning them on or off, time-controlled switches, occupancy-sensing switches, and remotely controlled switches and dimmers. a light switch mounted on the socket, base, or in-line with the cord. Portable lamps such as table lamps may have a light switch mounted on the socket, base, or in-line with the cord. Manually operated on/off switches may be substituted by dimmer switches that allow In electrical wiring, a light switch is a switch most commonly used to operate electric lights, permanently connected equipment, or electrical outlets 03467c6821

Electrical contact The surfaces where contacts touch are usually composed of metals such as silver or gold alloys that have high electrical conductivity, wear resistance, corrosion resistance, oxidation resistance and other properties. Contacts may be operated by humans in push-buttons and switches, by mechanical pressure in sensors or machine cams, and electromechanically in relays. Each contact is a piece An electrical contact is an electrical circuit component found in electrical switches, relays, connectors and circuit breakers. When the contacts touch, the switch is closed; when the contacts are separated, the switch is open. The gap must be an insulating medium, such as air, vacuum, oil, SF6. When a pair of contacts touch, they can pass an electrical current with a certain contact resistance, dependent on surface structure, surface chemistry and contact time; when the pair is separated by an insulating gap, then the pair does not pass a current. Each contact is a piece of electrically conductive material, typically metal. An electrical contact is an electrical circuit component found in electrical switches, relays, connectors and circuit breakers 03467c6821

For example, in a home equipped with a backup generator and an ATS, when an electric utility outage occurs, the ATS will tell the backup generator to start. Once the ATS sees... 03467c6821 As well as transferring the load to the backup generator, an ATS may also command the backup generator to start, based on the voltage monitored on the primary supply. The transfer switch isolates the backup generator from the electric utility when the generator is on and providing temporary power. The control capability of a transfer switch may be manual only, or a combination of automatic and manual. The switch transition mode (see below) of a transfer switch may be open transition (the usual type), or closed transition. 03467c6821 == Construction and types == 03467c6821 ==

Operation of a transfer switch == 03467c6821 == History == 03467c6821

Vandal-resistant switch Many vandal-resistant switches are intended to be operated by the general public, and must withstand heavy use and even abuse, such as attempts to damage the switch with metal tools. Vandal-resistant switches (also referred to as vandal-proof switches) are electrical switches designed to be installed in a location (or device) and application where they may be subject to abuse and attempts to damage them, as in the case of pedestrian crossing switches. Vandal-resistant switches located on devices that are outdoors must be able to withstand extreme temperatures, dust, rain, snow, and ice. These switches must also resist dirt and moisture 03467c6821

Tamper-resistant switches (or tamper-proof switches) are types of vandal-resistant switches which are not intended to be operated except by authorized users. They may control special functions, such as auditing of voting machines, operation of power tools or equipment, enabling of security alarm systems (e.g., arming and disarming), or restocking of vending machines. A very commonly seen tamper-resistant switch is the ignition switch in most motor vehicles. 03467c6821

Electrical network , batteries, resistors, inductors, capacitors, switches, transistors) or a model of such an interconnection, consisting of electrical elements (e. g. An electrical circuit is a network consisting of a closed loop, giving a return path for the current. Thus all circuits are networks, but not all networks are circuits (although networks without a closed loop are often referred to as open circuits). , batteries, resistors, inductors, capacitors, switches, transistors) or a model An electrical network is an interconnection of electrical components (e. g. An electrical network is an interconnection of electrical components (e. g. , voltage sources, current sources, resistances, inductances, capacitances) 03467c6821

Pressure switch Pressure switches are widely used in industry to automatically supervise and control systems that use pressurized fluids. Another type of pressure switch detects A pressure switch is a form of switch that operates an electrical contact when a certain set fluid pressure has been reached on its input. Pressure switches are widely used in industry to automatically supervise and control systems that use pressurized fluids. The switch may be designed to make contact either on pressure rise or on pressure fall 03467c6821

The most common is the mercury tilt switch. It is in one state (open or closed) when tilted one direction with respect to horizontal, and the other state when tilted the other direction. This is what older style thermostats used to turn a heater or air conditioner on or off. 03467c6821 The mercury displacement switch uses a 'plunger' that dips into a pool of mercury, raising the level in the container to

contact at least one electrode. This design is used in relays in industrial applications that need to switch high current loads frequently. These relays use electromagnetic coils to pull steel sleeves inside hermetically sealed containers. 03467c6821 A network that contains active electronic components is known as an electronic circuit. Such networks are generally nonlinear and require more complex design and analysis tools. 03467c6821 == Materials == 03467c6821

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