Fire diagrams

The Bagua , Pakua or Palgwae are eight symbols used in Taoist cosmology to represent the fundamental principles of reality, seen as a range of eight interrelated concepts. Each consists of three lines, each line either "broken" or "unbroken", respectively representing yin or yang , 0 or 1 forming binary numbers 0 to 7. Due to their tripartite structure, they are often referred to as Eight Trigrams in English. The trigrams are related to Taiji or Taegeuk philosophy, Taijiquan and the Wuxing , or "five elements". The trigrams have correspondences in astronomy , astrology , geography , geomancy , anatomy , the family, and elsewhere. The ancient Chinese classic, I Ching Pinyin : Yi Jing , consists of the 64 pairwise permutations of trigrams, referred to as " hexagrams ", along with commentary on each one. There are two possible sources of bagua. The first is from traditional Yin and Yang philosophy. This is explained by Fuxi in the following way:. The Taiji i. Eight 'eights' results in sixty-four hexagrams. Another possible source of bagua is the following, attributed to King Wen of Zhou Dynasty: "When the world began, there was heaven and earth. Heaven mated with the earth and gave birth to everything in the world. Heaven is Qian -gua, and the Earth is Kun -gua. The remaining six guas are their sons and daughters". The element of Wood corresponds with the trigrams of Wind Xun as a gentle but inexorable force that can erode and penetrate stone and Thunder Zhen. This is also known as the "binary sequence" or Shao Yong sequence. The hexagrams are in binary order when read up from the bottom around on the right, then up again on the left to the top. The Bagua is an essential tool in the majority of Feng Shui schools. The Bagua used in Feng shui can appear in two different versions: the Earlier Heaven Bagua , used for burial sites, and the Later Heaven Bagua , used for the residences. In the Chinese orthodoxy culture, five elements does not exist. In the ancient China, Chinese people created four elements theory as the earliest theory of Bagua. The trigram Qian Heaven is at the top, the trigram Kun Earth is at the bottom in the past, the South was located at the top in Chinese maps. The trigram Li Fire is located on the left and opposite to it is the trigram Kan Water. Zhen Thunder and Xun Wind form another pair, while being one opposite the other, the first on the bottom left next to Li while the second is next to Qian on the top right of the Bagua. Gen Mountain and Dui Lake form the last pair, one opposite the other, both in balance and harmony. The adjustment of the trigrams is symmetrical by forming exact contrary pairs. They symbolize the opposite forces of Yin and Yang and represent an ideal state, when everything is in balance. The sequence of the trigrams in Houtian Bagua, also known as the Bagua of King Wen or Later Heaven Bagua, describes the patterns of the environmental changes. Contrary to the Earlier Heaven Bagua, this one is a dynamic Bagua where energies and the aspects of each trigram flow towards the following. It is the sequence used by the Luo Pan compass which is used in Feng Shui to analyze the movement of the Qi that allegedly affects us. Feng shui was made very popular in the Occident thanks to the Bagua of the eight aspirations. Each trigram corresponds to an aspect of life which, in its turn, corresponds to one of the cardinal directions. Applying feng shui using the Bagua of the eight aspirations or Bagua map for short made it possible to simplify feng shui and to bring it within the reach of everyone. Western Bagua focuses more heavily on the power of intention than the traditional forms of feng shui. Masters of traditional feng shui disregard this approach, [9] for its simplicity, because it does not take into account the forms of the landscape or the temporal influence or the annual cycles. The Bagua of the eight aspirations is divided into two branches: the first, which uses the compass and cardinal directions, and the second, which uses the Bagua by using the main door. It is clear that, not taking into account the cardinal directions, the second is even more simplified. A bagua map is a tool used in Western forms of feng shui to map a room or location and see how the different sections correspond to different aspects in one's life. In this system, the map is intended to be used over the land, one's home, office or desk to find areas lacking good chi , and to show where there are negative or missing spaces that may need rectifying or enhancing in life or the environment. The bagua symbols are in the Miscellaneous Symbols block of Unicode:. In Peking Opera , a role that has Taoist technique or military strategy wears a costume decorated with Taiji and Bagua. Baguazhang and Taijiquan are two Chinese martial arts based on principles derived from bagua. From Wikipedia, the free encyclopedia. Eight trigrams used in Taoist cosmology. For other uses, see Bagua disambiguation. This article needs additional citations for verification. Please help improve this article by adding citations to reliable sources. Unsourced material may be challenged and removed. Alex Golstein. The I Ching or Book of Changes. Baynes , forward by C. Jung , preface to 3rd ed. Feng Shui London blog , Hidden categories: Articles containing Chinese-language text Webarchive template wayback links Articles with short description Short description matches Wikidata Articles needing additional references from April All articles needing additional references Articles containing Vietnamese-language text Articles containing Korean-language text Articles containing Japanese-language text Articles containing traditional Chinese-language text Wikipedia articles needing clarification from April All articles with

Wide variety of emergencies both man-made and natural, may require a workplace to be evacuated. These emergencies include - fires, explosions, floods, earthquakes, oxic material releases and workplace violence, etc. Fire and evacuation diagrams clearly display the workplaces that can be evacuated in the emergencies. Therefore, fire and evacuation diagram is of great importance for our daily life. Fire and evacuation diagram is actually a safe, compliant fire evacuation map. Fire and evacuation diagram helps move people from danger to safe areas during an emergency. Fire and evacuation diagrams are usually displayed on a bare wall in easy view of the surrounding area. Fire and evacuation diagram is of great importance to peoples' lives. Drawing a fire and evacuation plan has never been easier with the help of fire and emergency software. Additionally, our fire and evacuation diagram maker also offer a variety of printing choices like pdf, eps, ps, bmp, jpeg, word, etc. The picture above is a fire and evacuation diagram made via fire and evacuation diagram software. Keep it Simple. This is a case where less detail is better. The faster and easier that someone can look at your fire and evacuation diagram and find out what they need to know, the better. Calm thinking goes out the window during a crisis, and the goal here is to save lives, so only the important elements need to be displayed. Elements to Show. The basic layout of the property including walls and doors. Show the outside of the property as well because you need to indicate a marshal or congregation area for people to go to in the event of an emergency. The starting point, the compass, exit points, the marshal area, fire extinguishers, first aid kits and stations, other important elements should be on your fire and evacuation diagram. Display it in High Traffic Areas. For an evacuation map to be useful, it has to be visible. Display it on a bare wall in easy view of the surrounding area. If you have multiple maps, make a different map for each diplay location with a unique "you are here" element. If you have grasped the drawing techniques mentioned above, then it became quite easy for you to draw fire and evacuation diagrams on your own. Below is a school fire and evacuation diagram template. Fire and evacuation diagrams are a vital part of your overall emergency preparedness planning. Hope you can make fire and evacuation diagram on your own soon. EdrawMax is an advanced all-in-one diagramming tool for creating professional flowcharts, org charts, mind maps, network diagrams, UML diagrams, floor plans, electrical diagrams, science illustrations, and more. Just try it, you will love it! Fire and Evacuation Diagram. Fire and evacuation diagram is not just a good idea and it is required by law to meet most local fire codes. Get Started! You Will Love This Easy-To-Use Diagram Software EdrawMax is an advanced all-in-one diagramming tool for creating professional flowcharts, org charts, mind maps, network diagrams, UML diagrams, floor plans, electrical diagrams, science illustrations, and more. A disorganized evacuation can result in confusion, property damage and even casualty. A clear evacuation plan can give directions to people and make it in order. Therefore, it is necessary to develop effective emergency evacuation plan. You can use a powerful tool to acquire professional results effortlessly - Edraw. It embeds the drag and drop interface which is similar with MS Word. It also offers a wealth of predefined shapes and templates for quick use. See its amazing features below. Edraw has included all shapes necessary to draw Fire Evacuation Diagrams, such as the public signs and emergency phone. They are all vector format and editable both size and color can be changed. Users can save a lot of time without the requirement of drawing. The glued text boxes over the shapes help users to add labels conveniently. Take a look at the fire evacuation diagram produced by Edraw. Starting from an example to make your own fire evacuation diagram is the fastest way. You can also customize the example by replacing shapes or applying another theme. You can achieve a brand new diagram with only a few clicks. If you have found the right tool, you can yield twice the effect with half the effort. Only several steps are needed to generate a professional fire evacuation diagram in Edraw. Even novice users can handle it easily. Why are you still waiting? Try Edraw right now. Open the template on File menu in the Floor Plans category. Drag and drop necessary shapes and lay out them properly. Connect them through the connection points. Add suitable labels in the text boxes. Learn how to make a fire and emergency plan in detail. Printable Emergency Plan Software for Linux. Office Layout. Floor Plan Symbols. Fire Evacuation Diagram Templates. EdrawMax is an advanced all-in-one diagramming tool for creating professional flowcharts, org charts, mind maps, network diagrams, UML diagrams, floor plans, electrical diagrams, science illustrations, and more. Just try it, you will love it! Perfect fire evacuation diagrams drawing software with rich examples and templates. Edraw is ideal for graphics designers and developers who need to

draw fire evacuation diagrams. Free Download Buy Now. Get Started! You Will Love This Easy-To-Use Diagram Software EdrawMax is an advanced all-in-one diagramming tool for creating professional flowcharts, org charts, mind maps, network diagrams, UML diagrams, floor plans, electrical diagrams, science illustrations, and more. This page requires that javascript be enabled for some elements to function correctly. Learn about elements of a good emergency evacuation floor plan by moving over the items listed below. A floor plan shows the possible evacuation routes in the building. It is color coded and uses arrows to indicate the designated exit. A room containing hazardous materials is indicated in the lower right hand corner of the building by the flame symbol. The assembly area is indicated outside the primary exit at the top of the building. An evacuation floor plan with three exits, has the primary exit designated in the upper left by red arrows, with two main flows coming toward it indicated by bent arrows, the red rooms, and red elevator. Persons in the upper left half of the building are directed toward this exit. The secondary exit is located centrally on the adjacent outer wall on the right side of the building. Persons in the top hallway and second hallway are directed with tan arrows from the tan colored rooms toward this exit. A male and female figure representing restrooms are indicated in the first tan colored rooms in the upper hallway. The individuals should exit along the hallway toward the secondary exit at the right side of the building. Both the primary and secondary exits are marked with handicapped signs. There is a third exit in the last hallway, centrally located in the outer wall opposite the outer wall with the primary exit and adjacent to the outer wall with the secondary exit. Persons in the third hallway are directed by blue arrows from the blue colored rooms and blue elevator to exit out this doorway. This exit is not designated for handicapped persons as stairs are indicated. The outer wall on the left side of the building has a hallway along the outer wall. Four sets of six colored rooms are along the internal corridors and there are three large rooms centrally located with internal hallways connecting the top and bottom of the building. The Primary Exit is marked with an arrow from the text below the map, as is the Secondary Exit. An X inscribed in a circle marks the position of the employee, indicated in the legend, in text "You are here". On the floor plan, the employee is located in the upper left hand corner in the internal set of six red colored rooms, in the central room in the second hallway. The employee may exit the red colored room, either to the left or right indicated by red arrows , and then proceed toward the outer wall and the upper left primary exit. Learn about elements of a good emergency evacuation floor plan by moving your mouse over the items listed below. Your evacuation floor plan should designate at least one primary exit and one secondary exit. These exits must be remote from each other and so arranged as to minimize any possibility that both may be blocked by any one fire or other emergency condition. Even if there is a door in a restroom that employees could exit out of, no emergency exits are designated through restrooms for evacuation of a building. Windows are never designated as exits. Consequently, the floor plan does not indicate the restroom as an exit. Emergency exit routes lead away from this room containing potentially hazardous materials so that no employee will be forced to pass the area during an emergency. This short passageway between the two buildings may not provide enough open space for safe evacuation during an emergency. Accordingly, no emergency exit leads to this narrow space. Signs reading "Exit" with an arrow indicating the directions, must be placed in every location where the direction of travel to reach the nearest exit is not immediately apparent. An assembly location should be designated outside the building for employees to gather during an emergency. The location of this assembly area should be clearly illustrated if shown on the map. The floor plan of a multiple-story building should show the locations of stairways and elevators and must indicate that the stairs, not the elevators, are the appropriate means of exit in case of emergency. The Department of Labor does not endorse, takes no responsibility for, and exercises no control over the linked organization or its views, or contents, nor does it vouch for the accuracy or accessibility of the information contained on the destination server. The Department of Labor also cannot authorize the use of copyrighted materials contained in linked Web sites. Users must request such authorization from the sponsor of the linked Web site. Thank you for visiting our site. Please click the button below to continue. Evacuation Plans and Procedures eTool. Site Map Credits. Additional Assistance. Office of Special Counsel. SmartDraw includes fire scene templates and thousands of safety and emergency symbols for every kind of graphic. Create incident reports and fire access plans simply by selecting the appropriate template and then customizing your layout with symbols or your own digital photos. Take SmartDraw with you, too. SmartDraw works wherever you are. DSmartDraw is the easiest and most powerful tool for creating a professional-looking fire scene diagram. Create fire scene incident reports and plans. Start Now. Documenting a fire scene shouldn't require complicated software. Hundreds of professionally designed, interactive templates make you instantly productive. More than 20, graphics are included, giving you everything you need to create charts and diagrams of all

kinds, like pre-incident floor plans. Free and unlimited live support from our in-house technical support team. Create Clear, Compelling Graphics in Minutes. Floor Plans: Fire Dept. Try SmartDraw Free DSmartDraw is the easiest and most powerful tool for creating a professional-looking fire scene diagram. By continuing to use the website, you consent to the use of cookies. Read More. Follow Us. A fire safety plan helps you identify routes through a building or home in the event of a fire or other emergency. It outlines how people should escape a burning house or building or evacuate when a fire threatens the structure. You should also include items you'd want to take in the event of an evacuation and a meeting point or communication plan in the event you're separated. Creating a fire safety plan should be part of any fire pre-planning you do. Everyone in your office or family should be familiar with the plan and be prepared to follow the plan either if a smoke alarm goes off or you're requested to evacuate by authorities or emergency personnel. An emergency evacuation plan shows you the safe routes you can take to exit a building during an emergency like a fire. You should practice your safety plan at least twice a year to make sure everyone knows the routes. Create an emergency fire exit, fire pre-plan, or evacuation plan in just minutes using built-in templates and drag-and-drop symbols. It's easy with SmartDraw's fire escape plan maker. You don't need drawing skills or experience—SmartDraw automates much of the drawing for you. You can also share files with non SmartDraw users by simply emailing them a link. SmartDraw works wherever you are. All you need is an internet connection. SmartDraw provides a number of diagrams and other helpful forms, graphics and information to help you plan for an emergency, including:. Discover why SmartDraw is the best fire escape plan maker with fire escape plan templates. Home fire escape plans, fire exit location maps, and emergency evacuation maps Start Now. What is a Fire Safety Plan? What is an emergency evacuation plan? How often should you practice a fire escape plan? SmartDraw includes all of the templates and examples you need. Simply select a template, add the dimensions of your office or facility layout, and then customize it to show escape routes and exits in case of fire or other emergency. Extensive Design Symbol Library You'll get thousands of ready-made symbols for direction arrows, exit locations, fire extinguishers, alarms, hazardous materials, fire escapes, "you are here" markers, first aid kit locations, and more. Professional-Looking Results SmartDraw gives you a professional finish, no matter your skill level. There's no need to waste time with a lesser quality product when you can make diagrams and drawings with SmartDraw that make you look like a pro. Every single time. Free Telephone or Email Support Have a question? Call or email us. SmartDraw experts are ready to help, at absolutely no cost to you. Effortless Collaboration. Smart Integration. Start Now. By continuing to use the website, you consent to the use of cookies. Read More. Follow Us. Share sensitive information only on official, secure websites. This bulletin provides information for codes officials on how to create a simple building evacuation diagram. In addition to exit signs that guide people to safety, some buildings — like hotels, hospitals, nursing homes, schools, offices and high-rise buildings — are required to post an evacuation diagram. These diagrams are critical to the safe evacuation of people during an emergency. However, there is no fire or building code standard for building evacuation diagrams: what they must contain, where they are located, what language s they must use, or any other item that may go on a diagram. Training Fire service training and professional development. Prevention Fire prevention and public education. Operations Fire department operations, management and safety. Grants Fire service grants and funding. Current events and issues Find a fire department Find a firefighter fatality Search for hotels and motels. Search Search. Search for NFA courses. Find a firefighter fatality. Search for publications. Find a fire department. Search for hotels. Coffee break Bulletin. General guidelines for building evacuation diagrams Keep it simple. Show the basic layout of the building by floor level , including walls and doors. Make the sign large enough so that it is clearly seen. Color-code items on the sign to make them easier to understand. Post signs at or near means of egress, entrances to stairs, in elevator lobbies, and in any area where there are a lot of people. Identify any outdoor gathering areas. Other diagram items to consider Mark accessible exits, first-aid kits, automated external defibrillators AEDs , eyewash stations, Material Safety Data Sheet locations, the telephone switchboard, or any other item that is significant to the building. Include Braille code for any wording. Use other languages that are appropriate for your community. If changes to the floor plan are made, review the building evacuation diagram, make the necessary changes and post revised evacuation diagrams where appropriate. Action steps for better building evacuation diagrams Create or review policies that address and standardize building evacuation diagrams. Gather examples of best practices for diagrams that you can share with building managers. Review building evacuation diagrams when you conduct codes inspections. Effective communication can ignite wildfire safety engagement. Situational awareness basics — look and listen Part 2: mental environment. Situational awareness basics — look and listen Part 1:

physical environment. Fire-adapted communities. Virtual reality training may save firefighter lives. How to create a Community Wildfire Protection Plan. Recognizing backdraft conditions can save your life. Recognizing flashover conditions can save your life. The hidden dangers in firefighting foam. Feedback: why it is critical to your growth as a leader. Plan a better fire attack by understanding standpipe systems. Prepare for winter weather fire protection challenges. Is your smoke alarm installation program a liability concern? Inspecting fire-resistive steel construction for damage. Required storage distances for LPG cylinder stands. Know the threats before you attack an electric vehicle fire. Educating the public about safe handling of fireworks. Planning for a fire protection system shut down. Six tips for becoming a great mentor. Temporary standpipe systems. Fire prevention at buildings under renovation or construction. Improving on-scene performance. After a disaster: recovery assistance for fire departments. Improving responder performance using job aids. Evaluating your need for new technology. Student privacy rights: what training managers need to know. Online learning opportunities for fire and building code officials. Residential fire sprinklers save lives and money. How to contact a nationally recognized testing laboratory. Building construction special inspections: When are they required? How to make sure your fire safety messages are accurate. NFA course brings community risk reduction to your fire station. Reaching target populations with fire and life safety messages. The importance of pilot testing your community risk reduction program. Want to increase your cultural competence in risk reduction? How to improve your cross-cultural communication for risk reduction. Hydraulic system nameplates. Developing integrated plans. The consequences of leadership and decision-making. Striking while the iron is hot. Eyes wide open! Leadership and situational awareness. Quality management in Emergency Medical Services â€" Implementing change. Quality management in Emergency Medical Services â€" Problem statement. Quality management in Emergency Medical Services. Communitywide versus service area risk assessment. Selecting a public policy planning group. The public policy development cycle. How to create a simple building evacuation diagram. Wood burning stoves work by creating a controlled environment in which wood can be burnt more efficiently to produce heat. This guide shows how wood burning stoves work. To see how multi fuel stoves work, which can burn types of fuel other than wood, click here. Open fireplaces are therefore very inefficient at providing heat to a room, and we find that we always have to sit near our open fireplace just to feel the heat. Wood burning stoves help to solve this problem of inefficient heating by allowing you to control both the amount of wood and the supply of air to the fire. Wood burning stoves help to provide more heat to your room by burning the wood more efficiently. A wood stove helps to provide the most amount of heat possible from burning wood through two key ways:. In a wood burning stove, a fire is built and lit inside the firebox. The inside of the firebox is lined with fireproof material on the base, sides and back. The door is located on the front of the stove, and has a glass panel built in to allow you to view the fire. A seal around the door means that when the door is closed, all of the air being supplied to the fire is through the air vents. Depending on the model of stove and its design, wood burning stoves typically have one or two air vents. Wood burns best with a source of air from above, and so the diagram below shows how the fire in a wood burning stove is typically supplied with air. Along with how much wood is put on the fire, the main way to control how hot and fast a fire burns inside a wood stove is by using the air vents. Opening the vent s increases the flow of air to the fire , causing the fire to burn through the wood more quickly because it has a greater supply of oxygen. More heat is produced as a result. Closing down the air vent s reduces the oxygen supply to the fire, causing it to burn through the wood more slowly , which in turn produces less heat. Completely closing the vents prevents any air from getting to the fire and causing it to eventually go out. As wood burning stoves are designed to be more efficient than open fireplaces, the air supply to the fire needs to be controlled so that the fire is burning through the wood at a steady pace. A fire that is smoldering due to lack of air, or rapidly burning through the wood due to a large air supply, is very inefficient. As well as helping to burn wood in a more efficient manner, a wood burning stove also typically burns waste gases from the fire to produce even more heat through a process known as secondary burn or secondary combustion. Higher temperatures and pressures are required to burn off waste gases from a fire, and so a wood burning stove achieves this by providing an enclosed environment whereby the air can only enter the stove through the air vents and leave the stove via the flue. Wood burning stoves are designed to stop waste gases from leaving the firebox too quickly, so that more time is allowed for secondary combustion to occur. A baffle plate located at the top of the firebox helps to stop the air, and forces it through a small gap at the top of the stove before leaving your home. Wood burning stoves also provide a fresh supply of air to above the fire so that secondary combustion can occur. While primary air is typically supplied to the fire to burn the wood, either secondary air or tertiary air is supplied to above the fire to be used in

secondary burn. Our wood stove has a set of tertiary air vents located at the back of the stove that provides a fresh supply of oxygen for secondary burn. The diagram below shows how air is supplied to the fire to aid in secondary combustion of waste gases on our particular model of wood burning stove. Combined with burning the wood more slowly and efficiently, secondary burn helps wood burning stoves to produce the most amount of heat possible from each piece of wood burnt. Each model of wood stove is designed differently and so how well a stove converts wood into heat will be slightly different. Our wood burning stove has an efficiency rating of The body of a wood burning stove provides the means of transferring the heat produced from the fire to your room. Our wood stove is made from steel, and helps conduct the heat generated by the fire and radiates it out into the room. As wood burning stoves help to contain a fire within a metal and glass body, the glass on the door of the stove can blacken over time through use. Byproducts such as creosote created from burning wood can line the inside of the glass and leave stains. This can build up over time and prevent you from fully enjoying the view of a fire. A constant flow of air is supplied down the inside of the glass to help prevent deposits from settling on the glass. Our wood burning stove has air wash built in, and secondary air from the vent located underneath the stoves provides the air needed for the air wash. With the main vent on our wood stove open, the air wash system helps to keep the glass clear throughout each fire. Great Article â€" like the simplicity and clarity in your explaining of how it works. Had a basic idea of the system but with this article and your diagrams I now have a far better understanding of the process. This is a very clear article and my stove is almost the same as the example being explained. Very helpful. Jim Brennan. Save my name, email, and website in this browser for the next time I comment. A wood burning stove works by: Allowing a fire to burn wood inside an enclosed compartment surrounded by fireproof materials. The size of the firebox dictates how much wood can be added to the fire and influences how much heat can be generated. The airflow to the fire can be controlled using the air vents on the stove to be able to burn the wood more slowly and efficiently. Waste gases produced by the fire are held inside the stove for longer and at higher temperature to produce more heat through secondary combustion. Heat is radiated out into the room thanks to metal bodies on the stove. Where the fire is built inside a wood burning stove. The door to our wood burning stove is largely a glass panel. The main air vent located under our wood stove. The handle to control the airflow into the stove. How airflow in our wood burning stove stove works. The top of the firebox inside our wood stove showing the baffle. Waste smoke and gases leave via the flue at the top of the wood stove. Tertiary air vents inside our wood stove to aid in secondary combustion of waste gases. How tertiary air enters our wood stove above the fire to aid in secondary burn. The main body of our wood burning stove that radiates heat into the room. Without air wash the glass door can blacken over time. How secondary air is supplied to the glass to help keep it clean in our wood stove. Air wash allows us enjoy the view of the fire by helping to keep the glass clean. Hi Nigel, thank you for your comment, much appreciated. Glad I could help. A fire alarm system is a mechanism of different interconnected devises and components used to alert us in case of emergency especially fire to protect the staff and general public by taking appropriate actions. Fire alarm system is the combination of different components such as smoke detector, heat detector, carbon monoxide detector, multi sensor detector, call points, sounders, bells, relay module, repeater, annunciator, fire control panel and other related and optional security devices designed for fire alarm control system. Like a CPU central processing unit in a computer system, the fire alarm control panel is the brain of fire alarm system which sends a status indication and notification to the connected detectors and sounders in case of manual or automatic operation. Fire alarm systems are wired in industrial factories, offices, public buildings and nowadays even in homes. Different types of fire alarm system such as conventional, addressable, intelligent and smart wireless designs are used for the same purpose i. A smart fire control system is also connected to the fire brigade and related emergency personnel through remote control via control panel. The following tutorial will explain the different fire alarm system and their wiring diagrams and connection. There are multiple detectors used in a fire alarm system including the basic call point manual break glass unit and smart multi sensors detector. The fire detection devices can be categorized as follow. Smoke detectors can be categorized as follow based on design and working principles. Ionization Smoke detectors work based on lowering the current flow through the inside chamber due to ionization which leads to initiate the alarm. There are two chambers in a typical ionization smoke detector. The first chamber is used to compensate the changes in ambient temperature, pressure or humidity while, there are alpha particles radioactive material in second chamber which is used to ionize the passing air in the chamber where current flows between two electrodes. In case of fire when smoke enters the chamber, the current flow between two electrodes reduced due to ionize air. The drop in the current flow is used to trigger the sounder

and alarm circuit. When smoke enters the chamber, it distorts the chamber environment which leads to scatter the light and fall on the surface of photocell. This effect is used to imitate and trigger the alarm system. Light obscuring smoke detectors work based on measuring the amount of light falling on the surface of a photocell. Inside the light obscuring smoke detector chamber, the light source and photocell are positioned at fixed distance. When the smoke interferes the light beam from the light source to the photocell, it measures the amount of light it receives from the light source. This variation in the output receiving by photocell is used to trigger the alarm circuit. Hear detectors work based on the rate of change in temperature or a specific value of a fixed temperature rate. In case of heat rise to the pre-set value, the eutectic alloy inside the heat detector which is heat sensitive to the specific temperature turns from a solid to the liquid. The process is same like the working of a fuse where fuse element melts when needed. The same process will trigger the alarm circuit in case fire. Carbon monoxide detector is also known as CO detector. It is an electronic device which contains on different types of sensors used to measure and sense the amount of carbon monoxide gas in the air. When the level of carbon monoxide it is a poisonous gas produced by combustion crosses the specified limit, it indicates and triggers the fire alarm system. The electrochemical cell inside the carbon monoxide detector only sense and measure the amount of CO gas and not other combustion gases like smoke etc. Keep in mind that the carbon monoxide detectors designed for fire alarm system are more sensitive with quick response as compared to the CO detectors used in homes for CO protection in case of incomplete combustion process in appliances such as boilers etc. The multi sensor detector also known as multi-criteria alarm is a sensitive device which combines the input signal from both heat and optical sensors and used for wide range of fires with lower rate of unwanted false alarms. It can be used to detect optical, heat, CO and fires as it has the ability to detects multiple signals and send the identification value to the control panel for further appropriate action. Hence, an intelligent multi-sensors alarm can be used for accurate and verified correct operation. A fire alarm manual call point also known as break glass point is a device which is used to trigger the alarm circuit by breaking the glass and pressing a frangible element in case of emergency or fire. Call points are installed at 1. The maximum length between two call points is 30 meters and installed on the entry floor landing of stair cases, exit routes and at all exits to the open air. Following are the different types of fire alarm systems with wiring and connection diagrams. Lets discus each one in details as follow:. This is the basic fire alarm system used in household wiring. A smoke or heat detector can be installed to the existing or new home wiring. The detectors can be directly connected to the DB distribution board or an existing wiring like outlet. After installation, put the battery and switch on the main breaker to check if it works properly. In a conventional fire alarm system, all devices such as detectors, sounders and call points are connected to the control panel through separate wire or cable instead of shared one. In other words, the first end of the wire is connected to the detectors and second one to the control panel. In a typical conventional fire alarm system, detectors, sounder and call points are installed and divided into different zones i. Zone 1 for basement, Zone 2 for ground floor, Zone 3 for first floor etc. This way, it is easy to identify the exact affecting area to the control room, building management and fire brigade. In other words, the more numbers of zones, the more accurate locating the trigger and fire location. In an addressable fire alarm system, all the devices such as detectors, call points and alarm bells are connected in a loop system to the fire addressable control panel and each device has an address to tell about their location. This way, it is very easy to find the exact location of the device which has been triggered in the connected circuitry. The basic idea behind the loop system is that in case of short circuit fault, only a small portion of the system affected while the rest will work properly with the help of isolation module connected in the loop. In a single loop, up to 99 devices may be connected and can be extended up to 3. The main purpose of addressable fire system is same as conventional fire system expect the wiring connection and DIP Dual In-Line Package switches for an address or a set of address showing the exact location of triggered component on main addressable fire control panel screen. Addressable is most accurate but costly as compared to conventional system while both are not smart as compared to intelligent fire system which show the exact reason behind the triggered device if it is a fault, pre-alarm or fire and extinguish them quickly. In an intelligent fire alarm system, each device has the ability to analyze the environment around it and communicate the central control panel to take further action s in case of fault, fire or the device needs cleaning or scheduled maintenance of the detectors. As compared to the traditional fire alarm systems, they only provide single signal of info i. This misleading information can affect different phenomena such as reporting, omission etc. Similarly to the addressable fire control system, the devices are connected in loops in intelligent system which is available in two, four and eight loops system. A single loop can be extended up to 3. This way, a large area can be

controlled and monitored from single control panel. The main purpose of intelligent fire alarm system is to prevent the occurrence false alarms which need extra complexity due to high accurate sensors with incorporate computers system and algorithms. This way, it is more complex and expensive as compared to the traditional conventional and addressable fire detection systems. Click image to enlarge. In a wireless fire alarm system, all the detectors and related devices are interconnected remotely through radio communication to the fire control panel. In the wir

2007 vw jetta 25 fuse box diagram
2004 pontiac montana wiring diagram
autoscaut24 es

eless fire alarm system, a radio signal is transmitted from the detector such as heat detector or call point to the central fire alarm system to activate the alarm circuit. As wireless fire detection system is less costly due to labor costs and cable wiring with quick installation without shutting down the building areas for hours, but the hardware are very expensive even more in case of batteries replacement and maintenance. Related Posts:. Your email address will not be published. Table of Contents. Electrical Technology 2 8 minutes read. Show More. Related Articles. Electric Bill Calculator with Examples. Leave a Reply Cancel reply Your email address will not be published. Check Also. Electrical Wiring Installation. Close Search for. Adblock Detected Our website is made possible by displaying online advertisements to our visitors. Please consider supporting us by disabling your ad blocker. We depends on ad revenue to keep creating quality content for you to learn and enjoy for free.