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## Duct smoke detector installation manual

System sensor duct smoke detector installation manual. Duct smoke detector installation instructions.

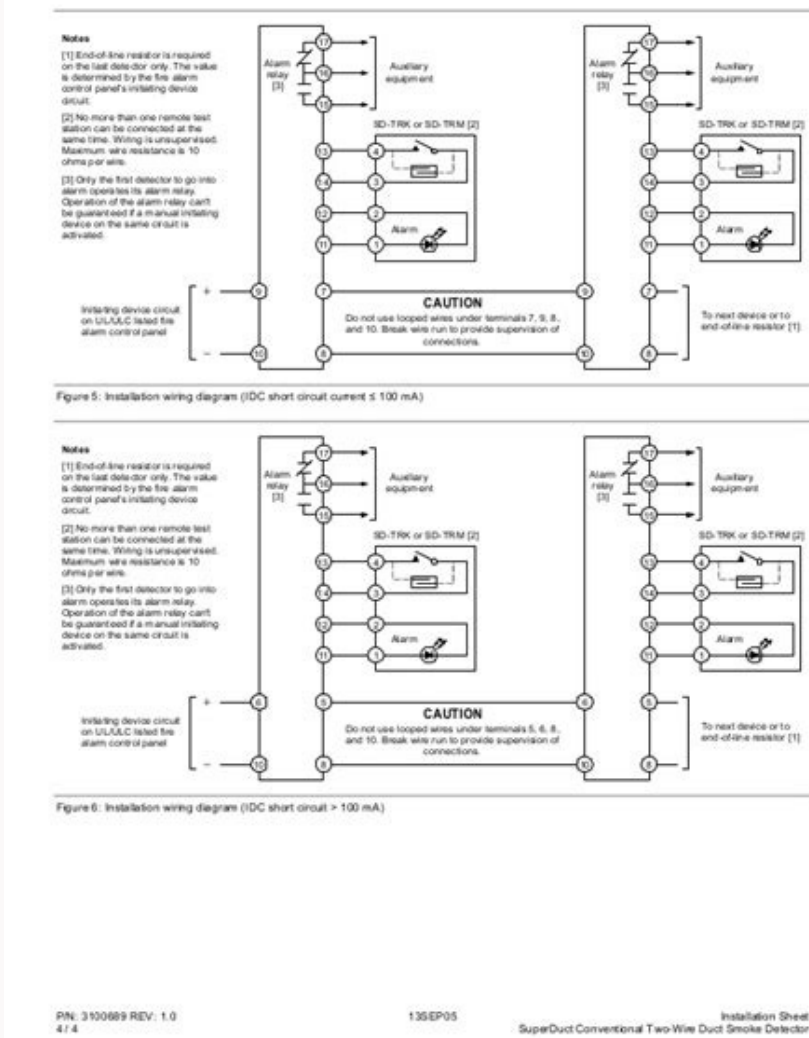


Duct type smoke detector installation. Duct smoke detector installation.



Notifier duct smoke detector installation manual. Duct smoke detector installation detail.

The fire alarm control panel must receive its power from a dedicated branch circuit. The circuit cannot be used for lights, receptacles, or any type of appliances. The circuit must be mechanically protected: meaning it has to be provided with an automatic “disconnecting means” (commonly called a “circuit breaker”). What are SLC circuits used for? Signaling Line Circuit (SLC) The Signaling Line Circuit or SLC in a fire alarm system is a power and computer style data bus.



It is used to provide power to the computers inside each module and detector (each device), carry information from the panel to the devices, and carry information from each device to the panel. What type of circuit is a fire alarm circuit? Simple Fire Alarm Circuits at Low Cost. Fire Alarm Circuit is a simple circuit that detects the fire and activates the Siren Sound or Buzzer. Fire Alarm Circuits are very important devices to detect fire in the right time and prevent any damage to people or property. What devices are on an SLC circuit? Initiating Devices and SLC Loops Initiating devices consist of pull stations, call points, automatic heat, smoke flame detectors and other devices that initiate a communication back to the FACP. SLC - Signal line circuits are initiating devices in an addressable fire alarm system. Do all smoke alarms need to be on the same circuit? Residential smoke alarms should be wired on a dedicated circuit. It's a good idea to have at least one light or receptacle on the same circuit, to alert the homeowners in case the circuit breaker ever trips. Interconnected alarms are usually wired in a daisy chain, using 14-3 or 12-3 cable. Do all smoke detectors have to be on the same circuit? A smoke detector does not need to be on a dedicated circuit in most instances, but builders should consult local building codes to check any applicable regulations. A maximum of 18 compatible units may be interconnected (Maximum of 12 Smoke Alarms). The same fuse or circuit breaker must power all interconnected units. What is the SLC loop in fire alarm? An SLC, or Signaling Line Circuit, carries signals back and forth between the fire alarm control panel and each of the input and output devices attached to the circuit. The SLC also provides power to the input and output modules. What is the difference between Class A and Class B wiring?



In fire alarm systems, the real difference between Class B and Class A is that if the pathway is interrupted, Class B only sends a “Failure Signal” to the panel, and Class A provides an extra path to get around the interruption. Are fire alarms on their own circuit? A smoke detector does not need to be on a dedicated circuit in most instances, but builders should consult local building codes to check any applicable regulations. How is a signaling line circuit used in a fire alarm? The Signaling Line Circuit is used by the main computer (Fire Alarm Control Panel or FACP) to communicate with all the sub-computers (Detectors and Modules). What is SLC in a fire alarm system? SLC Interface - A system component that connects a signaling line circuit to any combination of initiating devices, initiating device circuits, notification appliances, notification appliance circuits, system control outputs and other signaling line circuits. How does a Class A fire alarm circuit work?



If the designer has chosen to use a Class A circuit, the conductors must leave and return to the fire-alarm system control unit with no “T-taps” allowed. Class B circuits must extend from the fire-alarm system control unit to the last device or appliance on the circuit, and then terminate in an end-of-line device. What are the initiating devices in a fire alarm? Initiating devices consist of Pull Stations, Call points, automatic heat, smoke flame detectors and other devices that initiate a communication back to the FACP. SLC - Signal Line Circuits are initiating devices in an Addressable Fire Alarm system. Notification Appliance NAC Devices Consolidated Fire protection is a national company that performs the inspection, testing and maintenance for all fire protection needs and performs installations of Fire Alarm and Sprinkler Systems. Best Practice for the Installation, Testing, Maintenance and Service / Repair of Duct Smoke Detectors. Challenge: The installation of Duct Detectors can be a main cause of nuisance alarms and supervisory alerts. Duct Smoke Detectors are subject to the movement of air, dust and dirt within Heating Ventilation, Air Conditioning Systems (HVAC). Duct Smoke Detectors that are factory installed in most Roof Top Units (RTU), the Duct Detector usually receives its power by the RTU, by using this method of power for the detector; the Fire Alarm Control Panel cannot reset the Duct Detector. Duct Smoke Detectors can also be powered by 120 Voltage (VAC), the primary power for the Duct Detector is provided by an electrical circuit; by using this method of power for the detector, the Fire Alarm Control Panel cannot reset the Duct Detector. Duct Smoke Detectors installed on the ducting of the ventilation system are being installed at an elevated height or above a hard lid or T-Bar ceiling; this installation practice creates issues with servicing and testing the device. Due to the various ways of providing power to the detector, resetting the device after activation can be difficult for the end user and the building representative. Inaccessible Duct Detectors is the most common issue that service and repair technicians have when performing testing or service of the device. NFPA 72 has requirements for remote LED and test station locations when the device is located above ceilings or the detector LED cannot be seen from the floor. NFPA 72 mentions the definition of accessible, as applied to the equipment. The Duct Smoke Detector is to be accessible to meet the definition, but is not always the case. Why are Duct Smoke Detectors required : NFPA 90A is specific to Air Conditioning and Heating Systems installation. The purpose of the NFPA 90A is to prevent the spread of smoke and fire through ductwork and ventilation systems for air conditioning and heating systems with high capacities. The primary uses of the Duct Smoke Detector is to sample the air being moved through the ductwork for smoke and to stop the fan unit from running so smoke is not moved through the ducting. In some applications, Duct Smoke Detectors can be used for the control of ventilation dampers. Where are Duct Smoke Detectors required to be installed: The International Mechanical Code requires a duct smoke detector in the return for units over 2,000 cfm and requires a detector in the supply duct for systems over 15,000 cfm. There are other Codes and Standards that require the installation of Duct Detectors to be installed in the supply ducting of HVAC units that are over 2,000 CFM and in the return ducting or shaft if over 15,000 CFM. When installing Duct Detectors it is advised to reach out to the local Authority Having Jurisdiction (AHJ) to obtain their requirement. In air supply systems with a capacity greater than 2,000 CFM the Duct Detector shall be installed downstream of the air filters and upstream of any branch ducts. In multi-story buildings, it states each story with a commonly shared return and having a capacity greater than 15,000 CFM's. The smoke detection device should be installed before the connection to the common return and before any connection to any recirculation or fresh air inlet in the return air systems. The Code includes plenums where the plenum is used as the common return. Duct Smoke Detection - NFPA 90A Code Requirements - There are exceptions to the two basic requirements: Ventilation fan systems used to remove air from the inside of the building to the outside of the building. These fans are excluded from the above requirements and Return air smoke detectors are not required when there is a protection of the space served by a system of area smoke detectors.