

Design & Installation Instructions

Model S270 Intrinsically Safe Smoke Detector

This information in this document applies to Smoke detectors marked type SLR-E-IS and IS isolator type MTL5061



LOCATION OF DETECTORS

The location and spacing of smoke detectors should be based on good engineering judgement, supplemented by the guidelines provided by the authority having jurisdiction. For most installations, compliance with the applicable sections of NFPA Standard 72, "National Fire Alarm Code, Smoke-Sensing Fire Detectors" is required. The following information is provided as a guideline, and is believed by SST to be in compliance with 72. However, in case of any conflict, installation should always comply with the requirements of the authority having jurisdiction.

Per the NFPA installation requirements, open area smoke detectors are intended for mounting on a ceiling not less than 6 inches from a wall, or on a wall not less than 4 inches nor more than 6 inches from the ceiling. Where high ceilings (16 feet or greater) are found, smoke travel to the devices may be delayed by air stratification. In this situation, smoke detectors may need to be installed on sidewalls, or suspended below ceiling level. Sloped ceilings also require special considerations. Refer to NFPA 72 for recommended installation details.

CAUTION: Detectors are suitable for indoor use only. Detectors should not be installed in the following environmental conditions:

- Excessive ambient temperature
- Where excessive condensation or moisture is present.
- Where corrosive gas or any other harmful agent is present.
- Where flammable dust or steam is present.
- Where obstructions are present which could impede the flow of air to the detector.

A dust cover is included with these detectors to prevent contamination during installation and prior to commissioning. The dust cover must be removed for the detectors to operate.

SPACING BETWEEN DETECTORS

The detectors are intended for installation on 30 foot centers maximum, based on smooth ceilings up to 15 feet high with minimum air circulation, for a coverage area of 900 square feet. Where special conditions exist (ceiling obstructions, high air exchange rates, etc.), reduced square footage spacing must be used to achieve adequate protection.

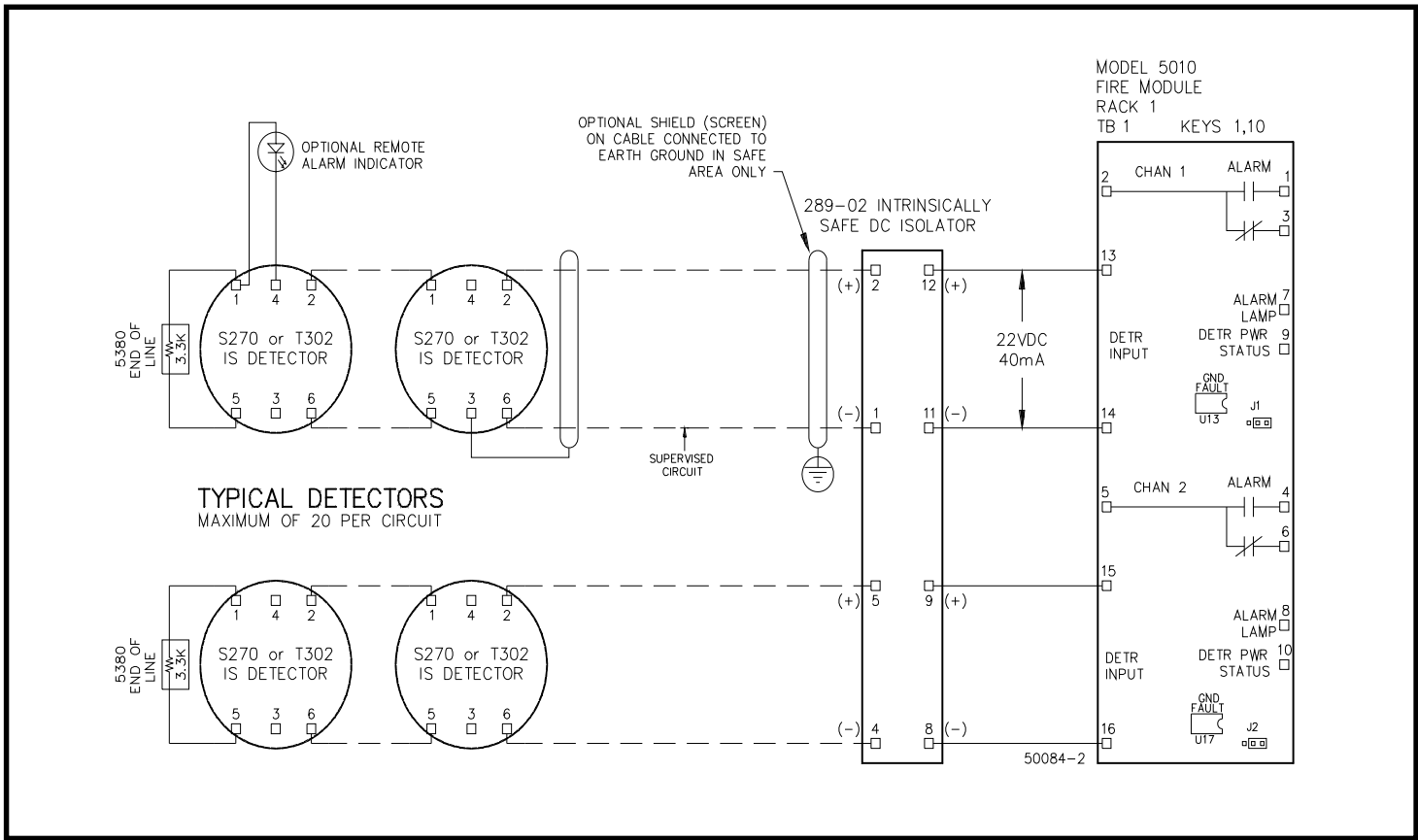
INSTALLING THE DETECTOR BASES

The Detector Bases mount directly on a standard electrical junction boxes (3, 3 1/2, or 4 inch round, square or octagonal). Refer to the typical wiring diagram included here, which shows the proper 2-wire smoke detector wiring method. Make connections to the screw terminals on the base per the wiring diagram.

To install the detector, push the detector head into the base and rotate until the detector key tabs drop into place. Rotate clockwise about 1/2" travel to engage electrical connections. The head will automatically lock into place.

WIRING THE ISOLATOR AND BASES

Please refer to the wiring diagram on the following page.



WIRING NOTES:

- The electrical circuit in the hazardous area must be capable of withstanding an AC test voltage of 500 volts to earth or frame of the equipment, for a period of one minute without breakdown.
- The Intrinsically Safe DC Isolator must be an SST part number 289-01 or equivalent BASEFA certified galvanic isolator.
- Each circuit may contain up to 20 Model S270 Smoke Detectors, or up to 20 Model T302 Heat Detectors, or a combination of each type to a maximum of 20 units. In addition, each circuit may contain up to 20 devices having voltage-free dry contacts (such as manual call points or flame detectors) and having appropriate certification for use in the intended hazardous environment.
- When an optional Alarm Indicator is used, the terminal 4 on multiple bases may be interconnected and a single Remote Indicator connected to any one such base. The interconnecting cable between any terminals 4 and the wiring to any Remote Indicator is to be considered as part of the interconnecting cable described at (5) below.
- Interconnecting cables must meet the following maximum parameters:

Hazard Group	Capacitance ÷ F	Inductance mH	L to R ratio ÷ H/ohm
IIC	0.07	0.6	2 36
IIB	0.56	1.86	146
IIA	1.82	4.96	286

- To comply with applicable installation codes, the wires used to connect the intrinsically safe circuits to the detector bases must be either color coded with light blue insulation or labeled "Intrinsic Safety Wiring" at least every 25 feet (7.62 m).

MAINTENANCE & TESTING

These detectors must be subject to periodic maintenance during regular service visits. This period should be outlined in the appropriate standards or recommendations for your locale. If there are no such standards existing, the manufacturer recommends that the minimum period of maintenance should be 1 year and that the following should be taken into account:

- A regular operation test should be performed using suitable test equipment (certain types of test equipment should not be used in flammable/combustible atmospheres).
- A magnetic test facility is incorporated into the detector which can be operated using a suitable magnet, SST part number 290-01.
- The detector may also be tested using a source of test smoke available from local sources.
- A visual check for staining and mechanical damage should be made.