

Application Note 22

Installing SST Smoke Detectors on a 4-wire circuit

Product(s): SST Model S250 Ionization Smoke Detector
SST Model S260 Photoelectric Smoke Detector

Release: All releases

<u>Subject of Note:</u>	<u>Type of Note:</u>	<u>Targeted at:</u>
<input type="checkbox"/> Operating Instructions	<input checked="" type="checkbox"/> Supplement	<input type="checkbox"/> Operators
<input checked="" type="checkbox"/> Installation	<input type="checkbox"/> Correction	<input type="checkbox"/> Service Personnel
<input type="checkbox"/> Module Setup		<input type="checkbox"/> Your files
<input type="checkbox"/> Calibration		<input checked="" type="checkbox"/> Field Installation Personnel
<input checked="" type="checkbox"/> Wiring		<input checked="" type="checkbox"/> Designers
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Description: This note documents correct installation of Safety Systems Technology Smoke Detectors when installed on a four wire circuit.

Problem

When Safety Systems Technology Smoke Detectors are installed on the standard 2 wire circuit, the number of detectors on a single detection loop is limited to one detector if using the mounting base with alarm controlled relay (part no. 280-03), or to 55 detectors if using the 280-01 or 280-02 mounting bases. Because the two wires are being used to supply the operating voltage to the detector electronics, as well as to transmit the alarm condition to the control panel, a larger detector load on the two wires can prevent alarms from being transmitted.

Solution

Install the S250 or S260 Smoke Detectors using the four wire detector base, Safety Systems Technology part number 280-04. The four wire circuit consists of two sets of wires, one set to supply 24 volts DC operating voltage to the sensor, and an additional two wires to transmit the alarm back to the control system. With this setup, auxiliary relay contacts are available for each detector, and any number of detectors may be installed on the loop. The drawing below shows the proper connections when used with the Safety Systems Technology NOVA-5000 Detection and Control System. If using these detectors with control systems manufactured by others, the resistance values for the end-of-line and in-line resistor (if used) will be different.

