S Simplex

Cautions and Warnings

DO NOT INSTALL ANY SIMPLEX PRODUCT THAT APPEARS DAMAGED. Upon unpacking your Simplex product, inspect the contents of the carton for shipping damage. If damage is apparent, immediately file a claim with the carrier and notify Simplex.

ELECTRICAL HAZARD - Disconnect electrical power when making any internal adjustments or repairs. Servicing should be performed by qualified Simplex Representatives.

STATIC HAZARD - Static electricity can damage components. Therefore, handle as follows:
1. Ground yourself before opening or installing components.
2. Keep uninstalled component wrapped in anti-static material at all times (use the 553-484 Static Control Kit).

RADIO FREQUENCY ENERGY - This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

TrueAlert™ Non-Addressable A/V and Strobe Operation

The TrueAlert 4903 Audible/Visible (A/V) and 4904 Strobe (see Figure 1) are non-addressable wall-mounted Notification Appliances that provide an audible and/or visible (A/V) or a Visible Only (Strobe) warning indication of an alarm condition when activated from the control panel of a UL-listed, Simplex Fire Alarm System. **When the Notification Appliance emits sound and/or light, it indicates the possibility of an emergency situation that requires your immediate attention.**

The TrueAlert A/V and Strobe are Notification Appliances that operate on a reverse polarity Notification Appliance Circuit (NAC). When this NAC is in the reverse polarity, or supervision state, these appliances do not operate, and present a high impedance to the circuit. They operate their notification appliance actuators when the respective NAC changes polarity, entering the "alarm" state.

| 4-Wire A/V | 2-Wire Strobe |

Figure 1. True*Alert* Notification Appliances

4-Wire Switchable A/V

The 4-wire A/V utilizes two circuits that operate independently. The first circuit (NAC1) controls the A/V strobe circuit; A/V strobe operation is configured using a single position DIP switch. The DIP switch set to "ON" configures the A/V strobe circuit to *Free-Run* operation, the DIP switch set to "OFF" configures the A/V strobe circuit to synchronous operation. Synchronous operation requires a compatible Simplex sync module (not supplied), 4009 IDNet™ NAC Extender, or 4010 Fire Alarm Control Panel (FACP) with a compatible synchronous NAC circuit.

Note: The factory default setting for SW1 is "OFF" (synchronous operation).

The second circuit (NAC2) controls the A/V horn operation; the A/V horn follows the On/Off state of the second NAC.

2-Wire Free-Run Strobe

The 2-wire Strobe activates a high intensity pulsed light output at a free-run rate determined by circuitry within the unit. The "*Free-Run*" version of the Strobe appliance flashes at a minimum rate of 1 Hz; its flashing is asynchronous to any other signals.

There are 3 models of each version of the 4903 A/V and 4904 Strobe; each has a different light output rating, 15 candela, 75 candela, and 110 candela. TrueAlert A/V and Strobe units are available in red and white color versions. Table 1 through Table 3 describe A/V and Strobe features and current ratings.

TrueAlert Non-Addressable 2-Wire Free-Run Strobe and 4-Wire A/V Terminal Connections

Refer to Figure 2 for terminal connections for the Free-Run Strobe and 4-Wire A/V and mode switch location and settings for the 4-wire A/V.
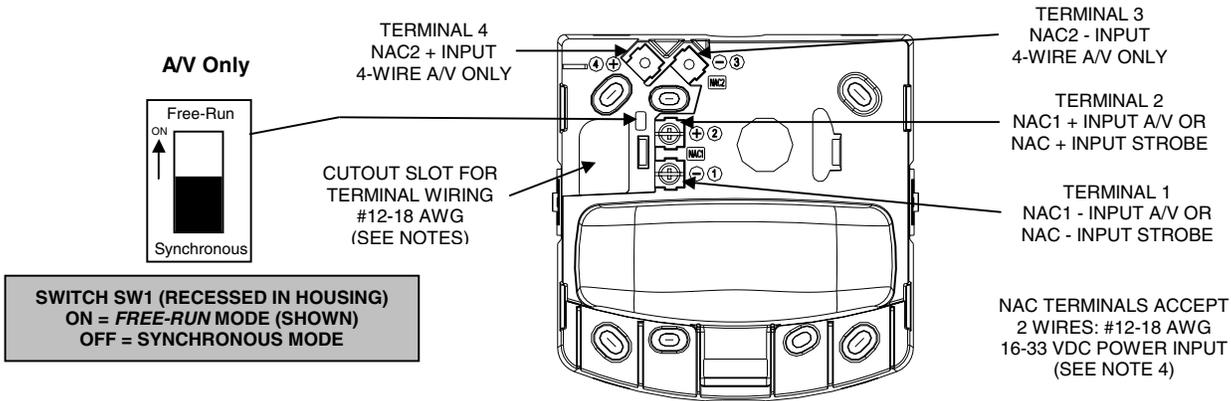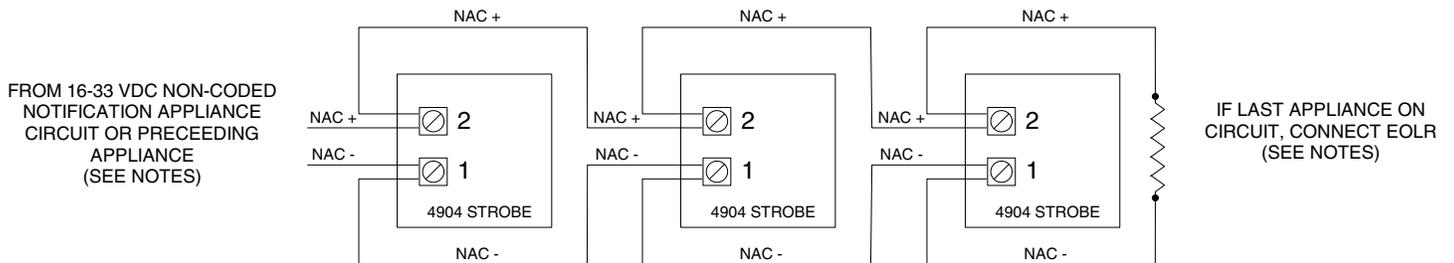

Figure 2. TrueAlert Free- Run Strobe and 4-Wire A/V Terminal Connections

TrueAlert Non-Addressable Free-Run Strobe Wiring

WARNING: **Make sure that all power is disconnected before starting the installation.**

CAUTION: **Connect wiring to terminals as shown. Do not loop wires under terminals. Break wire runs to provide supervision of connections. Do not bring conduit through the rear of the electrical box. Strip lead insulation to 3/8" maximum.**

1. At the enclosure box, run contractor wiring through the cutout slot and connect the wires to the NAC - and NAC + terminals at the front of the Strobe unit (see Figure 2). **Torque terminal block screws 12-15 in/lbs. to ensure proper continuity**. Refer to Figure 3 for Strobe terminal wiring connections.

2. When connecting more than one Strobe to a circuit, ensure that correct polarity is maintained on each unit.

3. When connecting the last Strobe on a circuit, connect an end-of-line resistor (EOLR) to the terminals.

Notes:
1. Notification Appliances are rated per individual nameplate label.
2. Maintain correct polarity on terminal connections. Do not loop wires under terminals.
3. Refer to the Field Wiring Diagrams supplied with the FACP for detailed NAC wiring information.
4. These appliances were only tested to the operating voltage limits of 16VDC and 33VDC. Do not operate these appliances outside these limits: doing so may cause appliance to fail to operate, and/or cause permanent damage to this equipment..

Figure 3. 4904 TrueAlert Free-Run Strobe Wiring

TrueAlert Non-Addressable 4-Wire A/V Wiring

WARNING: **Make sure that all power is disconnected before starting the installation.**

CAUTION: **Connect wiring to terminals as shown. Do not loop wires under terminals. Break wire runs to provide supervision of connections. Do not bring conduit through the rear of the electrical box. Strip lead insulation to 3/8" maximum.**

1. At the enclosure box, run contractor wiring through the cutout slot and connect the wires to the NAC1 (+,-) and NAC2 (+,-) terminals at the front of the A/V unit (see Figure 2). **Torque terminal block screws 12-15 in/lbs. to ensure proper continuity**. Refer to Figure 4 for A/V terminal wiring connections.

2. When connecting more than one A/V to a circuit, ensure that correct polarity is maintained on each unit.

3. When connecting the last A/V on a circuit, connect an end-of-line resistor (EOLR) to the terminals.
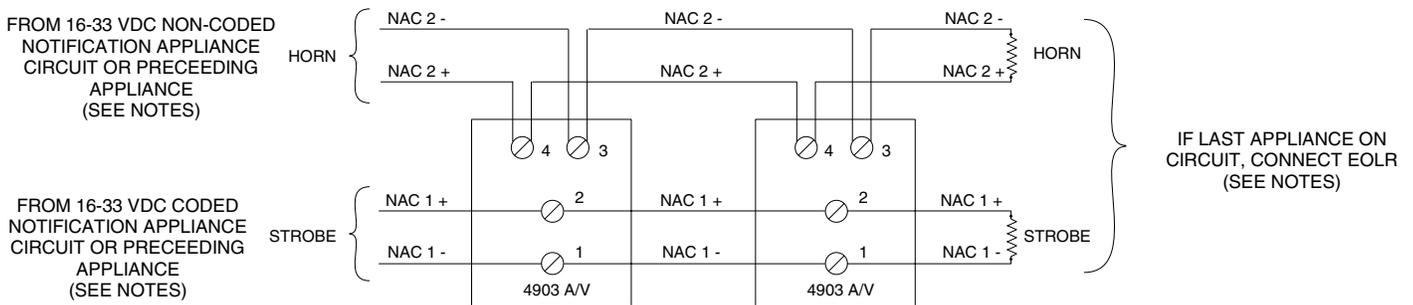
4903 A/V (4-Wire Terminal Connections)
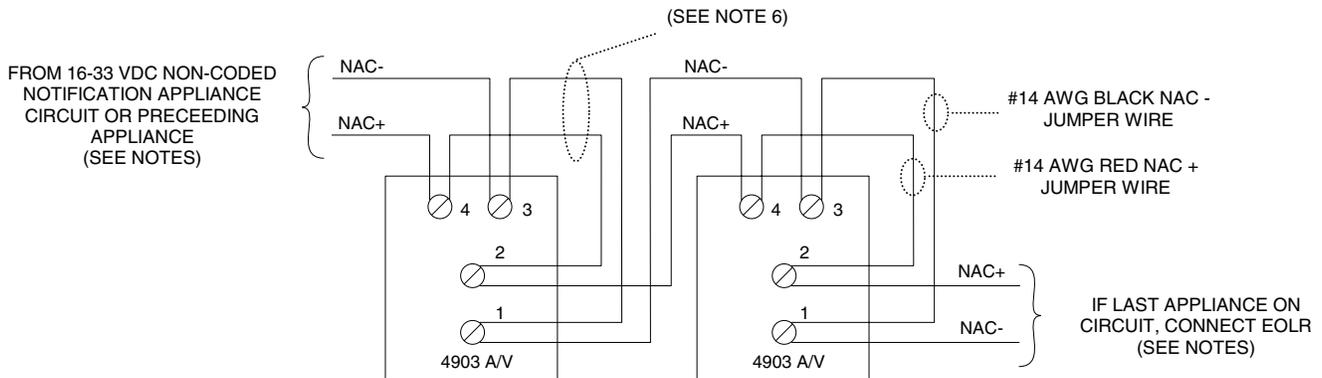
4903 A/V (2-Wire with Jumpers Terminal Connections)

Notes:

1. Notification Appliances are rated per individual nameplate label.
2. Maintain correct polarity on terminal connections. Do not loop wires under terminals.
3. All NAC wiring connections are supervised and power-limited.
4. Refer to the Field Wiring Diagrams supplied with the FACP for detailed NAC wiring information.
5. These appliances were only tested to the operating voltage limits of 16VDC and 33VDC. Do not operate these appliances outside these limits: doing so may cause appliance to fail to operate, and/or cause permanent damage to this equipment.. Terminals accommodate two (2) #12 - 18 AWG wires, mixing of wire gauges is not recommended.
6. Jumper wires (supplied) from horn to strobe terminals. Free-run operation is recommended for a 2-wire A/V with jumpers for terminal connections.
7. Maximum 35 strobe appliances per circuit when synchronous strobe operation is selected. Maximum 30 ohms wire resistance between strobe appliances. Refer to the Field Wiring Drawings of the driving Fire Alarm Control Panel for further instructions.

Figure 4. 4903 TrueAlert 4-Wire A/V Wiring

Mounting the TrueAlert Non-Addressable 4-Wire A/V and Free-Run Strobe

See Figure 5 for mounting the TrueAlert A/V and Strobe to the enclosure box. When surface mounting the A/V and Strobe, the 4905-9937 or 4905-9940 TrueAlert Surface Mount Skirt is recommended. Refer to the *4905 TrueAlert™ Skirt Installation Instructions (574-790)* for this mounting application.

Caution: Do not bring conduit through the rear of the electrical box.

1. Tighten mounting screws snugly (do not over tighten). **Torque mounting screws 5-7 in/lbs.**
2. For semi-flush mounting, install the box either flush with the wall or with a maximum 0.25-inch recess.
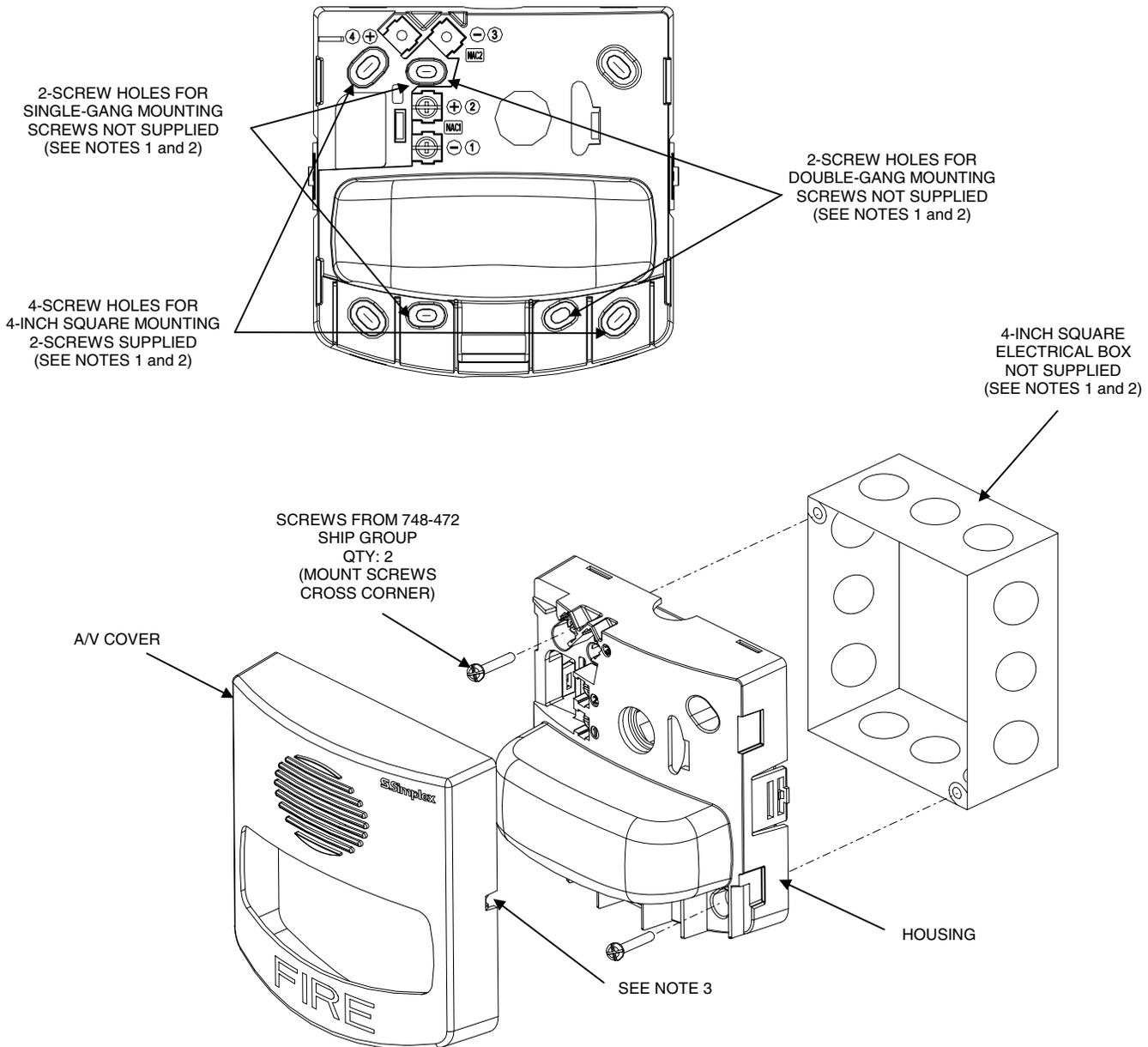
Notes:
1. The TrueAlert A/V and Strobe attach directly to standard single-gang, double-gang, or 4-inch square electrical box(s) (not supplied) mounted semi-flush or surface to the wall's surface.
2. There are two holes for single-gang and double-gang electrical box mounting; secure the housing to the single-gang or double-gang box using two mounting screws (#6/32 x 1 1/8-inch long, not supplied). The two mounting screws are placed cross corner (opposite top and bottom holes) for the 4-inch square installation.
3. To remove cover, press snap release in (one at a time) with a flat tip screwdriver while pulling up cover with other hand.

Figure 5. TrueAlert A/V and Strobe Mounting

4

4-Wire A/V Synchronous Operation

4903 A/V Synchronous operation requires a compatible Simplex 4010 Fire Alarm Control Panel (FACP), 4009 IDNet NAC Extender, 4905-9936 SmartSync Control Module (SCM), or 4905-9914 (Class A) and 4905-9922 (Class B) sync cubes. The 4010, 4009, SCM, and sync cubes are used for synchronizing the strobe portion of A/V unit, refer to the following installation instructions:

- *4010 Fire Alarm – Front Panel Installing, Operating, Programming Instructions (574-052)*
- *4010 Fire Alarm Panel Programmer – Installation/Programming Instructions (574-187)*
- *4009 IDNet™ NAC Extender Installation Instructions (574-181)*
- *4905-9938 SmartSync Control Module Installation Instructions (574-719)*
- *4905 Class A/Class B Strobe Sync Unit Installation Instructions (579-232)*

Table 1. Wall-Mounted TrueAlert A/V and Strobe Feature Chart

Description	Operation	Strobe Candela Rating (cd)	Product ID (PID) Model Numbers	Cover Color
4-WIRE A/V	Free-Run Horn, Strobe selectable as Free-Run or Synchronized	15	4903-9425	Red
		75	4903-9426	
		110	4903-9427	
		15	4903-9431	White
		75	4903-9432	
		110	4903-9433	
2-WIRE V/O	Free-Run Strobe	15	4904-9168	Red
		75	4904-9169	
		110	4904-9170	
		15	4904-9171	White
		75	4904-9172	
		110	4904-9173	

Table 2. TrueAlert 4-Wire A/V and 2-Wire Strobe Units – Strobe Current Rating Chart

CANDELA	INPUT (VDC)	IN-RUSH (mA)	PEAK (mA)	NOMINAL Avg. (mA)
15	16	104	102	77
	24			53
	33			44
75	16	292	272	202
	24			125
	33			93
110	16	424	340	261
	24			163
	33			118

Table 3. TrueAlert 4-Wire Switchable Free-Run/Synchronous A/V Units – Horn Current and Sound Pressure Level Measurements

VOLTAGE (VDC)	HORN MODE (SEE NOTE 1)	HORN CURRENT (MA)	SOUND PRESURE LEVEL MEASUREMENT (dBA)	
			ANECHOIC ROOM AVERAGE AT TEN FEET (SEE NOTE 2)	REVERBERANT ROOM AT TEN FEET PER UL464 (SEE NOTE 3)
16 (Minimum)	Steady	15	90	85
	Coded	10	86	82
24 (Nominal)	Steady	25	91	88
	Coded	15	86	84
33 (Maximum)	Steady	28	91	91
	Coded	20	87	87

Notes:
1. The coded category covers both Temporal and March Time cadences.
2. <u>Average</u> anechoic dBA measurements are measured on axis in a non-reflective test chamber using fast meter response.
3. <u>Reverberant</u> dBA measurements are a minimum UL rating based on sound power level measurements made in UL's reverberant test chamber.

Limitations, Safety, and Placement of Notification Appliances

Notification Appliances, and the Fire Alarm System itself, have certain limitations and requirements for safety, placement, installation, and test. Since you must know the limitations and adhere to the requirements, **keep** these instructions at a central location for future reference so that all people who use, maintain, and test the Fire Alarm System have access to this information.

Limitations

Notification Appliances do not sense any hazardous conditions such as smoke, fire, explosion, etc.; they are activated by a control panel as part of a system that does sense such conditions.

Notification Appliances do not provide their own power. They receive their power from the Fire Alarm System. If power is not supplied to the Notification Appliances (for whatever reason), the Notification Appliances will not provide an audible/visible warning. THEREFORE, BACK-UP POWER SUPPLIES, OR OTHER BACK-UP POWER SOURCES, ARE REQUIRED FOR THE FIRE ALARM SYSTEM.

Notification Appliances provide a specific rated output level of sound or light. The output level must meet the requirements of the intended protected area(s). Although the TrueAlert 4903 A/V and 4904 Strobe Notification Appliances meet the current UL standards for sound output and light intensity, the protected area(s) may have walls, doors, carpeting, furniture, insulation, or other obstacles that reduce or even block the sound and/or light. For all applications, the sound and light output must provide enough intensity to alert all occupants of the protected area(s) including those occupants that are sleeping or hearing impaired for whatever reason. If these occupants cannot hear and/or see the effect of the Notification Appliances within the protected area(s), you must increase the intensity of the sound/light output or add additional Notification Appliances so that the occupants can hear an/or see the effect of the Notification Appliances when activated. Refer to National Fire Protection Association (NFPA) National Fire Alarm Code 72, Chapter 4.

Notification Appliances are not a substitute for insurance coverage. All users should have adequate levels of life and property insurance.

Safety

Always install, maintain, and test Notification Appliances within their specifications. **Failure to follow all safety precautions and instructions may result in loss of life and property due to non-functioning Notification Appliances.**

Some Notification Appliances use high voltage. To avoid electrical hazards and avoid damage to appliances, make sure that the electrical power for the Notification Appliance Circuit is disconnected at the control panel before installing, repairing, or internally adjusting any Notification Appliances.

Even with electrical power removed, some Notification Appliances (such as visible strobes) store a high voltage charge. The high voltage can cause injury resulting in death from electrical shock. DO NOT TOUCH EXPOSED CIRCUITRY.

Placement

The placement of Notification Appliances must conform to:

* Latest NFPA standards and guidelines (Refer to National Fire Alarm Code 72, Chapter 4)
* Sound (Sound Pressure Level) and/or Light Intensity Analysis of Intended Protected Areas
* Local Authority Having Jurisdiction (AHJ) Requirements

Notification Appliances are not intended for installation within hazardous locations as defined by the National Electrical Code (NEC) or the NFPA. Contact Simplex for information on Explosion-Proof Notification Appliances designed for hazardous environments.