Features

4009 IDNAC Repeaters provide enhanced power delivery to TrueAlert/TrueAlert ES addressable notification appliances controlled by IDNAC SLCs:

- Output voltage is maintained by efficient switching regulator at 29 VRMS during both AC and battery backup conditions allowing strobes to operate at lower current
- With lower current strobes and regulated output voltage, wiring distance can be extended 2 to 3 times that of conventional notification, appliance loading can be increased, or smaller wire gauge can be used, all resulting in installation savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions

4009 IDNAC Repeaters receives an IDNAC SLC input and provide a repeated 3 A SLC output to extend SLC distance and power:

- Appliance control remains with the host IDNAC control panel and Repeater operation is essentially transparent; Repeater status is communicated to the control panel for system diagnostics and also locally indicated
- Input SLC connection can be Class B or Class A
- Repeater output can be a Class A loop or a Class B output with internal connections for up to four (4) T-tapped output branches (Class A output requires 4009-9814 Class A Adapter)
- Operation requires one IDNAC SLC address; Repeaters can be connected as one in series, or up to five (5) in parallel
- AC power input is 120 VAC or 220-240 VAC, 50/60 Hz, auto-select
- An on-board battery charger is provided with low AC battery disconnect selectable per Repeater (required for ULC listed applications)
- Operation is compatible with TrueAlert ES and TrueAlert addressable notification appliances and accessories
- Available with platinum or red cabinet
- Listed to UL 864 and ULC S527

Multiple wiring options are available:

- Wiring options include Class B multiple branch (up to 4) output, Class A loop extension, and Class A riser to Class B branches or a Class A loop output
- When the Repeater is part of a Class A loop from the IDNAC SLC source panel, up to twice the distance for the loop is available; (Class A loop repeating requires 4009-9814 Class A Adapter)

Class A Adapter 4009-9814:

- Required when extending a Class A loop or to provide a Class A local loop SLC output
- Operation provides short circuit isolation between input and output terminals for improved IDNAC SLC survivability

Features (Continued)

Built-in battery Charger

- Power supply charges up to 12.7 Ah batteries for in cabinet mounting and up to 25 Ah batteries with model 4009-9801 external battery cabinet

Available auxiliary output:

- A 200 mA, 29 VDC constant auxiliary output is available; operation is maintained during battery backup

* This product has been approved by the California State Fire Marshal (CSFM) pursuant to Section 13144.1 of the California Health and Safety Code. See CSFM Listing 7398-0026;0375 for allowable values and/or conditions concerning material presented in this document. Additional listings may be applicable; contact your local Simplex product supplier for the latest status. Listings and approvals under Simplex Time Recorder Co. are the property of Tyco Fire Protection Products.
Introduction

Repeating IDNAC SLCs. 4100ES fire alarm control panels with an EPS or EPS+ (enhanced power supply) provide individual address and control of TrueAlert and TrueAlert ES addressable notification appliances using IDNAC SLCs. When an IDNAC SLC reaches the current limit or the distance limit of the source IDNAC SLC, use of 4009 IDNAC Repeaters extends the IDNAC SLC with an additional 3 A of SLC current.

With IDNAC SLCs, a constant 29 VRMS source voltage is maintained, even during battery standby, allowing strobes to operate at higher voltage with lower current and ensuring a consistent current draw and voltage drop margin under both primary power and secondary battery standby. Efficiencies include wiring distances up to 2 to 3 times farther than with conventional notification, or support for more appliances per IDNAC SLC, or use of smaller gauge wiring, or combinations of these benefits, all providing installation and maintenance savings with high assurance that appliances that operate during normal system testing will operate during worst case alarm conditions.

Description

Three wiring configurations are available to provide a variety of system solutions: Class B branch extension, Class A loop extension, and Class A riser to Class B branch extension or Class A loop output.

Description (Continued)

Class B branch input wiring allows T-tapped connections to up to five (5) parallel connected 4009 IDNAC Repeaters. Each Repeater has on-board output terminal connections for up to four (4) output branch circuits, and additional branch circuits can be externally T-tapped as required. (Refer to diagram on page 3 for additional details.)

Class A loop extensions use a single 4009 IDNAC Repeater to extend the current and distance of a single Class A loop allowing the loop distance to be doubled.

The Repeater communicates and repeats bi-directionally allowing Class A loop operation to be maintained in the event of an open circuit. This wiring connection requires use of the 4009-9814 Class A adapter. (Refer to diagram on page 4 for additional details.)

Class A Riser to Class B Branches or Class A Loops. For applications requiring a combination of wiring types, a Class A riser can drive up to five (5) 4009 IDNAC Repeaters with each Repeater capable of driving either single or multiple Class B branch output(s) or a Class A loop output. In this wiring application, the Repeater does not repeat in the Class A riser loop, it is connected as an appliance with Class A in/out wiring. To create a Class A loop output, the Repeater must be equipped with a 4009-9814 Class A Adapter. (Refer to diagram on page 5 for additional details.)

Product Selection

<table>
<thead>
<tr>
<th>Model</th>
<th>Cabinet Color</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4009-9601(BA)</td>
<td>Platinum</td>
<td>4009 IDNAC Repeater with cabinet; provides a single 3 A IDNAC SLC output, 200 mA auxiliary power output, and battery charger; 120/240 VAC, 50/60 Hz input, auto-select</td>
</tr>
<tr>
<td>4009-9602(BA)</td>
<td>Red</td>
<td></td>
</tr>
</tbody>
</table>

* Add suffix BA to select 4009 IDNAC Repeaters assembled in the USA.

Aftermarket Accessories (installed on-site, select per system requirements)

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4009-9814</td>
<td>Class A Adapter Module, mounts on repeater controller board; required for Class A output</td>
</tr>
</tbody>
</table>

2975-9813  Platinum semi-flush box trim 1 7/16” (37 mm) wide, four corners and trim pieces for top, bottom, and sides; (will need to be cut to fit 4009 IDNAC Repeater cabinet)

2975-9812  Red semi-flush box trim

External Accessories (select per system requirements)

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>4905-9929</td>
<td>Remote TrueAlert Communications Isolator</td>
<td>Refer to data sheet S4905-0001 for details</td>
</tr>
<tr>
<td>4009-9801</td>
<td>External Battery Cabinet for 25 Ah batteries</td>
<td>16 ½” W x 13 ½” H x 5 ½” D (413 mm x 343 mm x 146 mm); refer to data sheet S2081-0006 for details</td>
</tr>
</tbody>
</table>

Battery Selection (select battery size per system requirements; two batteries are required for 24 VDC operation)

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Model</th>
<th>Description</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>2081-9272</td>
<td>6.2 Ah Battery, 12 VDC</td>
<td>2081-9275</td>
<td>18 Ah Battery, 12 VDC</td>
<td>Requires 4009-9801 External Battery Cabinet</td>
</tr>
<tr>
<td>2081-9274</td>
<td>10 Ah Battery, 12 VDC</td>
<td>2081-9287</td>
<td>25 Ah Battery, 12 VDC</td>
<td></td>
</tr>
<tr>
<td>2081-9288</td>
<td>12.7 Ah Battery, 12 VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Wiring Notes:**

1. Up to five (5) 4009 IDNAC Repeaters can be wired in parallel as shown on this diagram.
2. IDNAC SLC communications can be repeated **only once** between the source and the addressable appliance.
3. The 4009 IDNAC Repeater extends distance and current of the input IDNAC SLC; it requires one address and consumes four (4) unit loads.

Each 4009 IDNAC Repeater has duplicate output terminals rated for two wires each, allowing up to four (4) Class B branch circuit T-taps to be made in the cabinet; additional T-taps may be made in external wiring junction cabinets or boxes.
Wiring Reference, Class A Loop Extension

Class A IDNAC SLC Loop with 4009 IDNAC Repeater Extending Loop Range and Power

4009 IDNAC Repeater Requires optional 4009-9814 Class A Adapter Module set for Loop mode

Class A loop secondary direction

4100ES with EPS Power Supply, requires optional 4100-6103 Dual Class A IDNAC Isolator (DCAI)

Class A loop primary direction

Notes:
1. Only one 4009 IDNAC Repeater can be wired in a Class A loop. (IDNAC SLC communications can be repeated only once between the source and the addressable appliance.)
2. The 4009 IDNAC Repeater extends distance and current of the Class A IDNAC SLC loop; it requires one address and consumes four (4) unit loads.
3. Under normal operating conditions (no open circuit wiring), appliances 1 through 4 are powered by the 4100ES EPS Power Supply and appliances 5 through 9 are powered from the 4009 IDNAC Repeater.
4. Under open circuit conditions, an open circuit in the panel side of the primary path will result in the 4100ES EPS Power Supply powering appliances 5 through 9 and the 4009 IDNAC Repeater will receive IDNAC SLC input from the return path and then power appliances 1 through 4, or as many as remain connected.
Wiring Reference, Class A Riser Input with Class A Loop and Class B Branch Outputs

4100ES with EPS Power Supply, requires optional 4100-8103 Dual Class A IDNAC Isolator (DCAI)

IDNAC SLC input

Class A Loop Extension

4009 IDNAC Repeaters

Requires optional 4009-9814 Class A Adapter Module set for Branch Mode to create a local Class A loop circuit output

IDNAC SLC shown as a Class A Riser with each IDNAC Repeater wired in/out (not T-tapped); only two (2) are shown, maximum is five (5)

Class B Branch Extension

IN

OUT

Wiring detail reference (repeaters are wired same as appliances)

4009 IDNAC Repeater Mounting and Module Placement Reference

Optional 4009-9814 Class A Adapter Module

Cabinet depth

Door, 5/8" (16 mm) thick

Exposed cabinet dimension for semi-flush mount

1" (25.4 mm), 1-3/8" (35 mm) with semi-flush trim

Optional 4009-9814 Class A Adapter Module

Battery location (dotted line) no conduit entry or wiring in this area, 12.7 Ah maximum

Shaded Area is Non-power limited

Door, 5/8" (16 mm) thick

Exposed cabinet dimension for semi-flush mount

1" (25.4 mm), 1-3/8" (35 mm) with semi-flush trim

Optional Semi-Flush Trim Kit

1-3/16" wide (30 mm), 3/8" (9.5 mm) thick

Wall surface reference for semi-flush mount

Knockouts for screw or nail mounting holes

Exposed cabinet dimension for semi-flush mount

1" (25.4 mm), 1-3/8" (35 mm) with semi-flush trim

Optional Semi-Flush Trim Kit

1-3/16" wide (30 mm), 3/8" (9.5 mm) thick

Wall surface reference for semi-flush mount

Knockouts for screw or nail mounting holes
## 4009 IDNAC Repeater Specifications

### Input Ratings

<table>
<thead>
<tr>
<th>AC Input Ratings</th>
<th>Voltage Range</th>
<th>120 VAC, 50/60 Hz, or 220/230/240 VAC, 50/60 Hz, +10%, -15%, auto-select</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 VAC Current</td>
<td>2.5 A</td>
<td></td>
</tr>
<tr>
<td>220/230/240 VAC Current</td>
<td>1.25 A</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>24 VDC Requirements for Battery Calculations</th>
<th>Panel</th>
<th>IDNAC Appliances</th>
<th>Auxiliary Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby Currents</td>
<td>70 mA</td>
<td>0.8 mA each</td>
<td>Output current (voltage is from battery)</td>
</tr>
<tr>
<td>Alarm Currents</td>
<td>96 mA</td>
<td>4.5 A maximum with 3 A IDNAC SLC load and 200 mA Auxiliary output load (actual alarm current depends on connected and activated appliances and devices)</td>
<td>1.37 x output current (voltage converter is on when in Alarm)</td>
</tr>
</tbody>
</table>

### Output Ratings

<table>
<thead>
<tr>
<th>IDNAC SLC Output</th>
<th>3 A maximum @ 29 VRMS for Special Application appliances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compatible Special Application Appliances</td>
<td>Simplex TrueAlert ES and TrueAlert addressable notification appliances; contact your Simplex product representative for compatible appliances</td>
</tr>
<tr>
<td>IDNAC SLC Ratings and Loading</td>
<td>Up to 62 total addressable appliances; one address is required for the Repeater</td>
</tr>
<tr>
<td>Up to 75 total unit loads (appliances are 1 unit load, Repeater and Isolators are 4 unit loads)</td>
<td>Up to 62 compatible strobes can be synchronized per IDNAC SLC</td>
</tr>
<tr>
<td>Auxiliary Output</td>
<td>200 mA maximum</td>
</tr>
<tr>
<td>Voltage</td>
<td>29 VDC nominal with AC present or when Repeater is on battery standby and in Alarm</td>
</tr>
<tr>
<td>24 VDC nominal when on battery standby and not in Alarm</td>
<td></td>
</tr>
</tbody>
</table>

### IDNAC SLC Wiring Specifications

- Recommended wire type: UTP, unshielded twisted pair
- Maximum wire length allowed with “T-Taps” for class B wiring: 10,000 ft (3048 m)
- Maximum wire length to any appliance: 4000 ft (1219 m)
- Maximum wiring resistance between appliances: 26 Ω
- Wiring Connections: Terminal blocks for 18 to 12 AWG

### Repeater Status Indicators

- Green AC Power LED: On with AC present, off during brownout or no AC condition
- Red Communications LED (COMM): Blinks when Repeater is communicating with the host control panel
- Yellow System Status LEDs: 4 LEDs provide up to 16 different trouble status indications; an on-board trouble scroll button allows review should multiple troubles occur

### 4009-9814 Class A Adapter Module Option

- (required for Class A loop extension or for Class A output)
- IDNAC SLC Output Voltage: 3 A maximum @ 29 VRMS for Special Application appliances
- Two connections, Port A and Port B, function varies by application (loop extension or local loop), Port A and Port B are isolated from each other
- Status LEDs: Two yellow trouble LED indicators, one per Port

### Environmental and Technical Publications Reference

- Operating Temperature: 32° to 120° F (0° to 49° C)
- Operating Humidity Range: Up to 93% RH at 90° F (32° C)
- Installation Instructions: 4009 IDNAC Repeater 579-1019
- Class A Adapter Module 579-1080