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### CREDITS
This manual was designed and written by the EST Technical Services - Documentation Department, Sarasota.

### DOCUMENT HISTORY

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<td>SAN-MICII Microphone</td>
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<td>SDR-32 Remote Annunciator Display Module</td>
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<td>SIGA-APS(-220) Auxiliary Power Supply</td>
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<td>SWU-8/(3) Remote Annunciator Lamp and Switch Module</td>
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Introduction

About this manual
This manual contains copies of the EST2 installation sheets. The sheets are arranged in alphabetical order by title. The part number listed in Content is the installation sheet part number.

The EST2 library
A library of related documents supports the EST2 product line. Here is a complete list of the EST2 library:

- *EST2 Installation and Service Manual* (P/N 270186)
- *EST2 Network Site Manual* (P/N 270895)
- *EST2 Network Supplement Manual* (P/N 270894)
- *EST2 System Operations Manual* (P/N 270188)
- *EST2 System Programming Manual* (P/N 270187)
- *EST2 Installation Sheets* (P/N 3100056)
- *2-SDU Help* (P/N 180902)

Our technical writers constantly update the information in this manual. Your comments during our training classes, technical support phone calls, and field trips improve this document.

Related documents
The *Signature Series Intelligent Smoke and Heat Detectors Applications Bulletin* (P/N 270145) provides instructions and illustrations for various arrays of smoke and heat detectors.

The *Signature Series Component Installation Manual* (P/N 270497) supports the installation of the Signature Series detectors and modules.

The *Serial Number Log Book* (P/N 270267) provides a convenient means for recording the serial number of each Signature device installed in the fire alarm system.

The *SAN Annunciator Installation Guide* (P/N 250084) supports the SAN annunciators mentioned in this manual.

The *EST Speaker Application Guide* (P/N 85000-0033) provides information about the placement and layout of speakers for fire alarm signaling and emergency voice communications.

The *EST Strobe Applications Guide* (P/N 85000-0049) provides information for the placement and layout of strobes for fire alarm signaling.

The *Microline 182 Turbo Printer Handbook*, by Okidata provides all the necessary information for the maintenance and configuration of the PT1-S Form Printer. The Okidata handbook comes with the Form Printer.
Contents
2-3ANN/D
The 2-3ANN/D is a set consisting of an outer door and an inner door. The outer door and the inner door mount on the remote annunciator wallbox. The outer door has a Lexan™ viewing window. The inner door provides mounting space for a liquid crystal display and three LED/switch modules.

2-6ANN/D
The 2-6ANN/D is a set consisting of an outer door and an inner door. The outer door and the inner door mount on the remote annunciator wallbox. The outer door has a Lexan™ viewing window. The inner door provides mounting space for a liquid crystal display and six LED/switch modules.

INSTALLATION

A Install the outer door.

1 Align the outer door mounting holes with the four wallbox mounting studs.

2 Mount the outer door with the washers and nuts provided.

See Detail A.

Detail A

Wallbox mounting stud
Outer door mounting hole
Washer
Nut

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
**B** Install the inner door.

On the semi-flush mount wallbox
1. Align the inner door mounting holes with the three inner door mounting studs on the wallbox.
2. Secure the inner door to the wallbox with the washers and nuts provided.

On the surface mount wallbox
1. Align the inner door mounting holes with the three inner door mounting holes in the wallbox.
2. Secure the inner door to the wallbox with the screws provided.

---

**C** Connect the ground strap.

1. Secure the ground strap to the outer door ground lug with the nut and washer provided.
2. Run a wire connected to earth ground through a knockout in the wallbox.
3. Secure the ground strap and the earth ground wire to the wallbox with the nut and washer provided.
PRODUCT DESCRIPTION

The Audio Control Module is a dual channel electronics package, which interfaces with the paging microphone operator interface (2-MIC) and the firefighter telephone (2-TEL). Two integral tone generators provide alert and evacuation signaling. Two auxiliary pre-amp level (1 V) inputs handle pre-recorded messages or other external sources. Each of the two audio output channels has a Class B or Class A, pre-amp level (1 V) output, to feed the audio amplifiers.

The Audio Control Module mounts on the rear of the enclosure and provides terminals for the external audio inputs, two audio risers, and RS-485 data.

SPECIFICATIONS

Power requirements
- Power: 24 Vdc
- Standby with 2-MIC: 75 mA
- Standby with 2-TEL: 75 mA
- Active with 2-MIC: 110 mA
- Active with 2-TEL: 120 mA

Frequency response: 400 Hz to 4 kHz

Output
- Level: 1.0 Vrms
- Distortion: < 3%
- Wiring configuration: 2 channels, Class B (Style Y) or Class A (Style Z)
- Maximum load: 15 SIGA-AAxx amplifiers
- Maximum resistance: 100 Ω
- Maximum capacitance: 0.2 μF
- Maximum wire size: 14 AWG (1.5 mm²)

Auxiliary inputs
- Configuration: 2 electrically isolated channels (selected via programming)
- Input impedance: 10 KΩ
- Input level: 0.5 to 1.75 Vrms

Supervision
- Audio output (dc): 47KΩ EOL
- Audio output (ac): Audio pulse
- Internal: 1 kHz ac audio pulse
- Communication: Internally through RS-485 data
- Maximum wire size: 14 AWG (1.5 mm²)

Internal Generator tones
- Slow whoop
- Fast whoop
- 1 kHz steady
- 1 kHz march time
- 1 kHz Morse U
- Hi-Lo
- Chime
- Horn
- Low tone
- Hi-Lo horn
- Fast Hi-Lo horn
- Temporal (3-3-3)
- 4-4 code
- 1 kHz @ 20 bpm
- 1 kHz @ 120 bpm

Environmental conditions
- Temperature: 32 to 120 °F (0-49 °C)
- Humidity: 0 to 93%, non-condensing

INSTALLATION

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

PRODUCT DIAGRAM

Jumper Settings

Leave JP1 installed in the absence of a 2-TEL Firefighter Telephone. The removal of JP1 enables supervision for the 2-TEL option board.

Note: See the installation sheets of the following wallboxes for other locations to mount the Audio Amplifier:
- WB3(R)
- WB7(R)
- RACCR

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CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
### DIP SWITCH SETTINGS

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<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Tones selected by S1 and S3 are available at TB1 and TB3 upon activation of the Audio Control Module.</td>
</tr>
<tr>
<td>1</td>
<td>Boston code sequence (Evac channel only).</td>
</tr>
<tr>
<td>2</td>
<td>The signals connected to the auxiliary input terminals (TB4) are available at the output terminals (TB1 and TB3) upon activation of the Audio Control Module.</td>
</tr>
<tr>
<td>3</td>
<td>Silence for five minutes on fire.</td>
</tr>
<tr>
<td>4</td>
<td>The pre-announce tone disables the microphone and sounds the horn tone for five seconds upon the activation of the push-to-talk (PTT) switch.</td>
</tr>
<tr>
<td>5</td>
<td>Supervisory tone on TB3 and TB4 when the Audio Control Module is inactive.</td>
</tr>
<tr>
<td>6</td>
<td>Disables the generation of trouble conditions for applications without a microphone.</td>
</tr>
</tbody>
</table>

**Zone 23** Generated upon the activation of the Audio Control Module and the Evac circuit (Ch 1, TB2) whenever an operator pushes the Phone to Evac or Page to Evac switch at the 2-MIC.

**Zone 24** Generated upon the activation of the Audio Control Module and the Alert circuit (Ch 2, TB3) whenever an operator pushes the Phone to Alert or Page to Alert switch at the 2-MIC.

---

### Channel 1: Evac signals

#### Function

<table>
<thead>
<tr>
<th>Function</th>
<th>S1-1</th>
<th>S1-2</th>
<th>S1-3</th>
<th>S1-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow whoop</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>Fast Whoop</td>
<td>ON</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>1 kHz steady</td>
<td>off</td>
<td>ON</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>1 kHz Morse U</td>
<td>off</td>
<td>off</td>
<td>ON</td>
<td>off</td>
</tr>
<tr>
<td>Hi-Lo</td>
<td>off</td>
<td>off</td>
<td>ON</td>
<td>off</td>
</tr>
<tr>
<td>Chime</td>
<td>ON</td>
<td>ON</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>Horn</td>
<td>ON</td>
<td>ON</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>Low tone</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>ON</td>
</tr>
<tr>
<td>Hi-Lo Horn</td>
<td>off</td>
<td>ON</td>
<td>on</td>
<td>off</td>
</tr>
<tr>
<td>Temporal</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>1 kHz @ 20 bpm</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>1 kHz @ 120 bpm</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
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</table>

#### Channel 1: Evac operating modes

<table>
<thead>
<tr>
<th>Function</th>
<th>S2-1</th>
<th>S2-2</th>
<th>S2-3</th>
<th>S2-4</th>
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<tbody>
<tr>
<td>Zone 23 and 24 enable</td>
<td>ON</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Mode 0</td>
<td>X</td>
<td>X</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Mode 1</td>
<td>X</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>Mode 2</td>
<td>X</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Mode 3</td>
<td>X</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>Mode 4</td>
<td>X</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
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</table>

An X indicates that the switch does not apply to the mode.

---

### Channel 2: Alert signals

#### Function

<table>
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<th>Function</th>
<th>S3-1</th>
<th>S3-2</th>
<th>S3-3</th>
<th>S3-4</th>
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</thead>
<tbody>
<tr>
<td>Slow whoop</td>
<td>off</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>Fast Whoop</td>
<td>ON</td>
<td>off</td>
<td>off</td>
<td>off</td>
</tr>
<tr>
<td>1 kHz steady</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>1 kHz Morse U</td>
<td>off</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Hi-Lo</td>
<td>off</td>
<td>off</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>Chime</td>
<td>ON</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Horn</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Low tone</td>
<td>off</td>
<td>off</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>Hi-Lo Horn</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Temporal</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>1 kHz @ 20 bpm</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>1 kHz @ 120 bpm</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
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</table>

#### Channel 2: Alert operating modes

<table>
<thead>
<tr>
<th>Function</th>
<th>S4-1</th>
<th>S4-2</th>
<th>S4-3</th>
<th>S4-4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mode 0</td>
<td>X</td>
<td>X</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Mode 2</td>
<td>X</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Mode 3</td>
<td>X</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Mode 4</td>
<td>X</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

**Channel 1 and 2 modes**

| Mode 5 | X | X | X | X |
| Mode 6 (Ch 2 only) | X | OFF | ON | OFF |

---

### Wiring

- Ribbon cable to Main Controller Module or Expander Loop Module
- Data in: TB1
- Data out: TB2

#### Notes

1. All wiring is supervised and power-limited.
2. Shields shall be continuous and isolated from ground, except at the originating panel.
PRODUCT DESCRIPTION

The Remote Alphanumeric Display Annunciators are modules that consist of indicators and controls for monitoring the system away from the control panel. The -C models include switches that provide limited operator functions over the system. Custom messages and front panel switch functions are uniquely programmable.

Note: See the related documentation listed in the title block for mounting instructions.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Power</td>
<td>Nominal 24 Vdc @ 80mA</td>
</tr>
<tr>
<td>Host quantity and addressing</td>
<td>Up to 4 network addresses per annunciator</td>
</tr>
<tr>
<td>Printer port format</td>
<td>RS-232</td>
</tr>
<tr>
<td>Printer baud rate</td>
<td>2400, 4800, 9600</td>
</tr>
<tr>
<td>Annunciators per circuit</td>
<td>31</td>
</tr>
<tr>
<td>Message capacity</td>
<td>88 messages per panel address</td>
</tr>
<tr>
<td>Maximum wire length</td>
<td>352 maximum per annunciator</td>
</tr>
<tr>
<td></td>
<td>50 ft (15 m)</td>
</tr>
</tbody>
</table>

PRODUCT DIAGRAM

The Remote Alphanumeric Display Annunciators are modules that consist of indicators and controls for monitoring the system away from the control panel. The -C models include switches that provide limited operator functions over the system. Custom messages and front panel switch functions are uniquely programmable.

Note: See the related documentation listed in the title block for mounting instructions.

DIP SWITCH SETTINGS

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1-1</td>
<td>Auto acknowledge option</td>
<td>On</td>
</tr>
<tr>
<td>S1-2</td>
<td>Stealth buzzer option</td>
<td>On</td>
</tr>
<tr>
<td>S1-3</td>
<td>Not used</td>
<td>Off</td>
</tr>
<tr>
<td>S1-4</td>
<td>Not used</td>
<td>Off</td>
</tr>
</tbody>
</table>

JUMPER SETTINGS

JP1 and JP2 are RS-485 terminating jumpers and should be installed only at the last annunciator connection.

<table>
<thead>
<tr>
<th>Function</th>
<th>JP1</th>
<th>JP2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class A</td>
<td>Channel 0</td>
<td>Channel 1</td>
</tr>
<tr>
<td>Class B</td>
<td>Channel 0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

LEDs

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1 - DS4</td>
<td>See the System Operations Manual.</td>
</tr>
<tr>
<td>DS5</td>
<td>Data transmitting on Channel 0</td>
</tr>
<tr>
<td>DS6</td>
<td>Data transmitting on Channel 1</td>
</tr>
</tbody>
</table>

Circuit board assemblies

Notes

1. Remove the LED/Switch assembly to access to JP1 and JP2.
2. These control switches are included on -C models only.
3. The circuit board mounts behind the faceplate of the module.
4. The 2-CMDN(-C) also includes a backbox assembly.
5. See the related documentation listed in the title block for operator instructions on S2 – S8.

Note: The remote alphanumeric display annunciators will only work with the EST2 fire alarm system.
**Note**

1. 24 Vdc supply must have dedicated riser from auxiliary 24 Vdc source. Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring or use FPL, FPLP, FPLR, or equivalent in accordance with the National Electric Code.

2. Provide physical separation between two wire bundles to ensure network survivability.

3. See the TB1 connection table below.

4. Supervised and power-limited

---

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

---

**Caution!**

Observe static-sensitive material handling practices.

---

### TB1 connection table

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Function</th>
<th>Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1-1</td>
<td>+24 Vdc</td>
<td>+24 Vdc power supply</td>
</tr>
<tr>
<td>TB1-2</td>
<td>24 Vdc common</td>
<td>24 Vdc common</td>
</tr>
<tr>
<td>TB1-3</td>
<td>Earth ground</td>
<td>Local earth ground</td>
</tr>
<tr>
<td>TB1-4</td>
<td>RS-232 RX in</td>
<td>RS-232: To TX out on printer to Data TX on PC serial port (downloading)</td>
</tr>
<tr>
<td>TB1-5</td>
<td>RS-232 TX out</td>
<td>RS-232: To RX in on printer to Data RX on PC serial port (downloading)</td>
</tr>
<tr>
<td>TB1-6</td>
<td>RS-232 common</td>
<td>RS-232 Common on printer to common on PC serial port (downloading)</td>
</tr>
<tr>
<td>TB1-7</td>
<td>RS-485 Ch 0 (+)</td>
<td>To/from TB1-7 of additional 2-CMDN(-C)s/2-SMDN(-C)s</td>
</tr>
<tr>
<td>TB1-8</td>
<td>RS-485 Ch 0 (-)</td>
<td>To/from TB1-8 of additional 2-CMDN(-C)s/2-SMDN(-C)s</td>
</tr>
<tr>
<td>TB1-9</td>
<td>RS-485 Ch 1 (+)</td>
<td>To/from TB1-9 of additional 2-CMDN(-C)s/2-SMDN(-C)s</td>
</tr>
<tr>
<td>TB1-10</td>
<td>RS-485 Ch 1 (-)</td>
<td>To/from TB1-10 of additional 2-CMDN(-C)s/2-SMDN(-C)s</td>
</tr>
</tbody>
</table>
PRODUCT DESCRIPTION

The Central Processor Unit (CPU) consists of the microprocessor and the circuits, which act as the primary interface between the network and the remote annunciators. Two RS-485 communication ports provide network and annunciator loop connections. An RS-232 port provides a connection for the printer or the download cable to the fire alarm control panel. Relay contacts provide supervision for alarms, supervisory conditions, and trouble conditions.

The CPU functions as a node on a Class A (Style 6) or Class B (Style 4) network. It also functions as a controller by sending and receiving tokens (in peer-to-peer fashion) to other network controllers.

The CPU receives its power from a listed Primary or Auxiliary Power Supply. The CPU also provides its own protection from transient spikes, which may arise from any source, including the power supply.

SPECIFICATIONS

**Input power**
- 18 to 26.4 Vdc, 92 mA - Standby
- 110 mA - Active

**RS-485 NET**
- Maximum device capacity: 10 nodes
- Maximum line impedance: 0.44 µF/100Ω
- Maximum wire size: 14 AWG (1.5 mm²)

**RS-485 ANN**
- Maximum device capacity: 30 addresses
- Maximum line impedance: 0.44 µF/100Ω
- Maximum wire size: 14 AWG (1.5 mm²)

**RS-232**
- Non-isolated, 50 ft. (15.2 m) max.
- Must be located in the same room.

**Relay contacts**
- Alarm and Trouble Form C, rated at 24 Vdc nominal @ 1 A
- Supervisory Form A, rated at 24 Vdc nominal @ 1 A

**Temperature range**
- 32 to 100 °F (0 to 38 °C)

**Humidity range**
- 0 to 93% RH

LEDs

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1</td>
<td>Internal communications</td>
<td>Green</td>
</tr>
<tr>
<td>DS2</td>
<td>CH2 TXD</td>
<td>Green</td>
</tr>
<tr>
<td>DS3</td>
<td>CH1 TXD</td>
<td>Green</td>
</tr>
</tbody>
</table>

JACKS

<table>
<thead>
<tr>
<th>Jack</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>J1</td>
<td>24 Vdc in (not used)</td>
</tr>
<tr>
<td>J2</td>
<td>Data cable to the 2-LCD (front panel display module)</td>
</tr>
<tr>
<td>J3</td>
<td>24 Vdc out (not used)</td>
</tr>
<tr>
<td>J4</td>
<td>RJ-45 (download)</td>
</tr>
<tr>
<td>J5</td>
<td>Not used</td>
</tr>
<tr>
<td>J6</td>
<td>Not used</td>
</tr>
<tr>
<td>J7</td>
<td>2-ISO</td>
</tr>
<tr>
<td>J8</td>
<td>2-ISO</td>
</tr>
</tbody>
</table>

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

Wire Stripping Guide

Strip 1/4” from the ends of ALL wires that connect to the terminal blocks of the module.

**CAUTION:**
Exposing more than 1/4” of wire may cause a ground fault.
Exposing less than 1/4” of wire may result in a faulty connection.

PRODUCT DIAGRAM

INSTALLATION SHEET:

2-CPU
Central Processor Unit

INSTALLATION SHEET P/N: 387469 FILE NAME: 387469.CDR
REVISION LEVEL: 2.0 APPROVED BY: B. Wanek
DATE: 22AUG00 CREATED BY: B. Graham

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
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OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
**MOUNTING INSTRUCTIONS**

*Mount the 2-CPU in a 6ANN/B(-S) or 10ANN/B(-S) wallbox. See the 6ANN/B(-S)/10ANN/B(-S) installation sheet for details about the placement of power-limited wiring.

1. Screw the standoffs onto the designated backbox studs [1].
2. Align the CPU mounting holes with the standoffs in the designated footprint [2].
3. Secure the CPU to the standoffs with the screws and washers provided.
4. Make the appropriate connections to TB2 through TB5. (See Internal wiring and Network wiring, on the following pages, for more detail.)
5. Attach the ribbon cable from the CPU (J2) to the front panel display module (J1).

---

**INTERNAL WIRING**

**Download Wiring**

*Note:* Disconnect the printer while downloading data.

```
[Diagram showing download wiring connections]
```

---

```
[Diagram showing internal wiring connections]
```

---

```
[Diagram showing RS-232 connections]
```
**Printer Wiring**

- **To RS-485 port of Network Node**
- **To RS-485 port of Remote Annunciator**

**RS-485 Port Wiring**

Caution: Any wiring that exits one building and enters another requires a Ditek surge protector module. See the Network Supplement Manual.

**RS-232 Port Wiring with IOP3A Isolator Module**

- **Form Printer**
- **IBM Compatible Computer**
- **To Peripheral Device**

**Detail A**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24 VDC</td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>OUT</td>
</tr>
<tr>
<td>4</td>
<td>SUPV</td>
</tr>
<tr>
<td>5</td>
<td>COM</td>
</tr>
<tr>
<td>6</td>
<td>IN</td>
</tr>
<tr>
<td>7</td>
<td>RXD</td>
</tr>
<tr>
<td>8</td>
<td>TXD</td>
</tr>
</tbody>
</table>

**Detail B**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUPV</td>
</tr>
<tr>
<td>2</td>
<td>COM</td>
</tr>
<tr>
<td>3</td>
<td>TXD</td>
</tr>
<tr>
<td>4</td>
<td>RXD</td>
</tr>
</tbody>
</table>

**Form Printer**

- DB25 Male (Front View)
- DB9 Female (Front View)
INTERNAL WIRING

RPM wiring

**Notes**

- Power-limited if the source is power-limited. If the source is non-power-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.

- UL/ULC Listed 3.9 kΩ EOL resistor (P/N 260001) required. Circuit not used.

**RPM Jumper Settings**

<table>
<thead>
<tr>
<th>Circuits*</th>
<th>JP1</th>
<th>Alarm</th>
<th>Supervisory</th>
<th>Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate Circuits*</td>
<td>In</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-7,8: Reverse Polarity</td>
<td>TB1-5,6: Reverse Polarity</td>
</tr>
<tr>
<td>Single Circuit*</td>
<td>Out</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-3,4: 0.0 Vdc**</td>
<td>TB1-3,4: 0.0 Vdc**</td>
</tr>
</tbody>
</table>

*Alarm, Supervisory, and Trouble
**Alarm overrides supervisory and trouble.

![Diagram of RPM wiring]

NETWORK WIRING

**Notes**

- Power may be daisy-chained to the next device.
- Cabinets and components do not appear in proportion to their actual dimensions.
- The RS-485 signal may be multi-dropped to the next controller on the network.
- This RS-485 line is multi-dropped from a previous controller on the network.
- The network can support up to ten controllers (i.e., ≤ five Network Main Controller Modules and ≤ five 2-CPU-CCs).
- RS-232 signal to peripheral devices: printers and download cables.
- Power-limited if the source is power-limited. If the source is non-power-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.

![Diagram of network wiring]
PRODUCT INFORMATION

The 2-DFK(R) is a trim kit that prepares double-wide wall boxes for semi-flush mounting. The trim kit is available in two colors: grey or red(R).

INSTALLATION

1 Install the trim kit with the nuts provided.

2 Prepare the nail knockouts.

INSTALLATION SHEET:

DIMENSIONS

Note: The trim kit is 3/4 inch wide (1.9 cm).

INSTALLATION SHEET P/N: 387569 FILE NAME: 387569.CDR
REVISION LEVEL: 1.0 APPROVED BY: B. Shivers
DATE: 11/19/98 CREATED BY: B. Graham
PRODUCT DESCRIPTION

The 2-DLM Data Line Monitor is designed to create a Class A (Style 6) RS-485 line when used with Network Main Controller Modules and 2-CPU(s). The 2-DLM also creates a Class A (Style 6) Annunciator RS-485 when used with a Network Main Controller Module or 2-CPU and local annunciation devices. The purpose of the 2-DLM is to detect and repair opens on the RS-485 lines.

The 2-DLM consists of a microprocessor and the necessary support circuitry to communicate with the two ends of the RS-485 lines over two separate channels. If communication stops on either of the two channels, indicating a line break, the 2-DLM will connect the channels and repair the broken communication lines.

The 2-DLM receives 24 Vdc from a 2-PPS/XX(-220) or a SIGA-APS. In addition, the 2-DLM is transient protected on all terminal connections. The 2-DLM side mounts to a WB series cabinet or back mounts to a network annunciator cabinet.

SPECIFICATIONS

- **Input Power**: 18 - 26.4Vdc, 18mA
- **Network Data Lines (Both)**:
  - Class (Style): Class A (Style 6)
  - Maximum Line Impedance: 0.44 μF/100 Ω
  - Maximum Wire Size: 14 AWG (1.5 mm²)
- **Temperature Range**: 32 to 100 °F (0 to 38 °C)
- **Humidity Range**: 0 to 93% RH

Dip Switch Functions

<table>
<thead>
<tr>
<th>Switch</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW1-1</td>
<td>On for operating on the annunciator loops</td>
</tr>
<tr>
<td>SW1-2</td>
<td>Future Use</td>
</tr>
<tr>
<td>SW1-3</td>
<td>On for testing the 2-DLM</td>
</tr>
<tr>
<td>SW1-4</td>
<td>Future Use</td>
</tr>
</tbody>
</table>

INSTALLATION: REMOTE ANNUNCIATOR CABINET

Caution!

Observe static-sensitive material handling practices.

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Remote annunciator wallbox installation

To back mount the Data Line Monitor in a remote annunciator wallbox:

1. Screw standoffs onto the appropriate backbox studs.
2. Align the 2-DLM mounting holes with the appropriate studs and standoffs in the backbox.
3. Mount the 2-DLM with the 6/32 x 3/8 pan head screws and #6 interlocking washers provided.
4. Make the appropriate connections to TB1 through TB4. (See the following pages for more detail.)

Standard wallbox installation

To side mount the Data Line Monitor in a standard wallbox:

1. Align the 2-DLM mounting holes with the appropriate standoffs on either side of the backbox.
2. Snap the 2-DLM onto the standoffs.
3. Make the appropriate connections to TB1 through TB4. (See the following pages for more detail.)
FIELD WIRING

2-DLM back mounted in a network annunciator cabinet

2-DLM side mounted in a WB series cabinet

Caution! Any wiring that exits one building and enters another requires a Ditek surge protector module. See the appropriate panel installation manual for wiring.

Notes

- Power may be daisy-chained to the next device.
- The network annunciator cabinet draws power from a listed primary or auxiliary power supply.
- RS-485 signal may be multi-dropped to the next device.
- The network can support up to ten controllers (i.e., ≤ five Network Main Controller Modules and ≤ five 2-CPU).
- Cabinets and components do not appear in proportion to their actual dimensions.
- To SAN annunciators, 2-LSRAs, and 2-SMDNs.
- The wiring and functions of the 2-DLM for the RS-485 ANN lines are identical to the RS-485 NET lines. Make sure SW1-1 is on.
- Class A (Style 6)
- All wiring is supervised and power-limited.

Wire Stripping Guide

Strip 1/4" from the ends of ALL wires that connect to the terminal blocks of the module.

CAUTION:
Exposing more than 1/4" of wire may cause a ground fault.
Exposing less than 1/4" of wire may result in a faulty connection.
Description
The 2-ISO Isolator Module is an option card that mounts directly to either a Main Controller Module or a 2-CPU. Its purpose is to provide electrical isolation between RS-485 devices and the control panel's primary power supply. The 2-ISO also isolates the primary power supply from other system power supplies and electrical interference events.

Specifications
- Voltage: 5 Vdc, nominal
- Current: 25mA
- Maximum line parameters: 0.44μF/100 Ω
- Isolation: 500 Vac

Mounting Instructions
Snapping support posts to the 2-ISO
1. Support Posts (P/N 362351)
2. Shorting Plugs
3. Main Controller Module J8 J7
4. Main Controller Module J8 J7

Mounting the 2-ISO on a Main Controller Module
2. Main Controller Module J8 J7
3. Component side toward Main Controller Module
4. Main Controller Module J8 J7

Mounting the 2-ISO on a 2-CPU
2. 2-CPU J8 J7
3. Component side toward 2-CPU
4. 2-CPU J8 J7

Warning!
- Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.
- Observe static-sensitive material handling practices.

*Note: The control module, in these mounting instructions is either a Main Controller Module or a 2-CPU. Step 1 applies to both modules. Steps 2 through 4 will differ slightly for the Main Controller Module and the 2-CPU.
DESCRIPTION

The Liquid Crystal Display Module (LCD) is the primary operator interface with the system. The liquid crystal display features a back-lit screen, with 4-lines (20 alphanumeric characters each). LEDs provide status information. Front panel switches and a numeric keypad provide access to system operation and maintenance functions.

INSTALLATION

1 Mount the LCD
   a. Push a grommet through the mounting holes of the LCD and the inner door.
   b. Insert a plunger into the grommet.
   c. Repeat steps 1 and 2 until you have installed all six sets of grommets and plungers.

   Note: Do not try to insert the plunger and grommet into the mounting holes at the same time. Insert the grommet first and then the plunger to avoid damaging them.

2 Connect the ribbon cables
   a. Connect the ribbon cable from J1 on the LCD to J2 on the Main Controller Module.
   b. Connect the ribbon cable from J3 of the LCD to J1 on the first LED/switch module (address 0).

   Note: See the LED/Switch module installation sheet for ribbon cable connections between modules and dip switch settings.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Input Power</th>
<th>24 Vdc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td></td>
</tr>
<tr>
<td>Standby current</td>
<td>20 mA</td>
</tr>
<tr>
<td>Alarm current</td>
<td>130 mA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Display</th>
<th>4 line, 20 character, back-lit, alphanumeric, super-twist, liquid crystal</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Environmental Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
</tr>
<tr>
<td>Humidity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEDs</td>
</tr>
<tr>
<td>AC Power, Alarm, Supervisory, Trouble, Monitor, Disable, Ground Fault, CPU Fail, Test, Reset, Trouble Silence, Alarm Silence, Drill, and User Option</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Controls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numeric keypad</td>
</tr>
<tr>
<td>0 - 9, Enter, and Delete</td>
</tr>
<tr>
<td>Message review switches</td>
</tr>
<tr>
<td>Alarm, Supervisory, Trouble, and Monitor</td>
</tr>
<tr>
<td>Function switches</td>
</tr>
<tr>
<td>Status, Program, Enable, Disable, Activate, Restore, Reports, and Test</td>
</tr>
<tr>
<td>User option switch</td>
</tr>
<tr>
<td>The programmer determines the function of this switch.</td>
</tr>
</tbody>
</table>

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

PRODUCT DIAGRAM

INSTALLATION SHEET:

<table>
<thead>
<tr>
<th>INSTALLATION SHEET P/N: 270212</th>
<th>FILE NAME: 270212.CDR</th>
</tr>
</thead>
<tbody>
<tr>
<td>REVISION LEVEL: 4.0</td>
<td>APPROVED BY: J. Massing</td>
</tr>
<tr>
<td>DATE: 29MAR00</td>
<td>CREATED BY: B. Graham</td>
</tr>
</tbody>
</table>

Related documentation: Installation and Service Manual
**PRODUCT DESCRIPTION**

The Expander Loop Module (LCX) provides the standalone system an additional multiplexed Signature Data Circuit (SDC) and two Notification Appliance Circuits (NACs). The SDC and the NACs can operate on Class A or Class B wiring. The SDC can support 96 Signature Series detectors and 94 Signature Series modules. The NACs have separate input terminals, which are rated at 24 Vdc @ 3.5 A or 100 W @ 25 Vrms or 70 Vrms audio. The NAC terminals may share power or receive it from a listed fire alarm power supply.

**SPECIFICATIONS**

**Input Power**
- 24 Vdc @ 20 mA, standby: 130 mA active

**NACs**
- Quantity/Style: Two Class A (Style Z) or Class B (Style Y)
- Voltage: 24 Vdc, Nominal
- NAC Current Rating: 3.5 A or 100 W @ 25/70 Vrms per circuit
- Line Resistance: 50 Ω max.
- EOL Resistor: 15 kΩ, ½ W
- Maximum Wire Size: 12 AWG (2.5 mm²)

**SDC**
- Class (Style): Class A (Style 7) or Class B (Style 4)
- Detector Capacity: 96 Signature Series detectors
- Module Capacity: 94 Signature Series modules
- Line Resistance: 65 Ω max., full load (50 mA)
- Line Capacitance: 0.33 fF, max.
- Maximum Wire Size: 14 AWG (1.5 mm²)

**Environmental Conditions**
- Temperature Range: 32 to 120 °F (0 to 49 °C)
- Humidity: 0-93%, Non-condensing

---

**INSTALLATION**

1. Mount the Expander Loop Module with the screws and washers provided.

2. Connect the ribbon cables to the Expander Loop Module.

---

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

---

**WIRE ROUTING**

The routing of power-limited and nonpower-limited wiring differs with each cabinet. For more information on the routing of power-limited and nonpower-limited wiring, see the cabinet’s installation sheet.

---

**PRODUCT DIAGRAM**

---

**INSTALLATION SHEET:**

2-LCX

Expander Loop Module

**INSTALLATION SHEET P/N:** 270213

**FILE NAME:** 270213.CDR

**REVISION LEVEL:** 3.0

**APPROVED BY:** J. Massing

**DATE:** 31MAR00

**CREATED BY:** B. Graham

Related documentation: Installation and Service Manual

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OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
**FIELD WIRING**

**Notification Appliance Circuits (NACs) / Signature Data Circuit SDC Wiring**

### Notes

- Supervised.
- Power-limited when connected to a power-limited source. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring or use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.
- 15 kΩ resistor Required for Class B (Style Y) wiring only.
- Supervised and power-limited.
- No T-taps when wired as a Class A (Style 7) circuit.
- For maximum wire resistance, see the Installation and Service Manual.
- Contacts shown with system power applied.

### Legend

- **M** Signature Series module/pull station
- **S** Signature Series smoke detector
- **F** Notification appliance

### Diagram

- **NAC 1** Source: listed fire alarm power supply or amplifier
- **NAC 2** Source: listed fire alarm power supply or amplifier
- **NAC 1 Source:** UL/ULC Listed 15 kΩ EOL
- **NAC 2 Source:** UL/ULC Listed 15 kΩ EOL
- **Expander Loop Module**
- **Class A (Style 7)** configuration only
- **Class A (Style Z)** configuration only

---

**270213.CDR REV 3.0 Page 2 of 2**
**PRODUCT INFORMATION**

The 2-LFK(R) is a trim kit that prepares the WB3 series wall box for semi-flush mounting. The trim kit is available in two colors: grey or red(R).

**INSTALLATION**

1. Install the trim kit with the nuts provided.

2. Prepare the nail knockouts.

3. Secure the wallbox to the frame.

**DIMENSIONS**

- **Top view:**
  - Trim kit

- **Side view:**
  - Trim kit

- **Front view:**
  - 29.9 in (75.94 cm)

- **Bottom view:**
  - 16 in (40.6 cm)

**Note:** The trim kit is 3/4 inch wide (1.9 cm).
PRODUCT DESCRIPTION

The 2-LSRA(-C) features a 4-line, 20-character back-lit alphanumeric liquid crystal display for use with the fire alarm panel. An optional RS-232 printer/download port is available for a local printer connection, depending on annunciator configuration. The printer provides a hard copy of the information on the annunciator display. The annunciators require 24 Vdc for operation.

All annunciator front panels include Normal, Alarm, Supervisory, and Trouble LEDs. The 2-LSRA is a reduced complement annunciator, which provides only the Next/Acknowledge and Back switches. The 2-LSRA-C is a full complement annunciator, which provides password protected Reset, Alarm Silence, Trouble Silence, Drill/All Call, Next/Acknowledge, and Back switches. The password protect Enable/Disable switch is located on the rear of the unit.

INSTALLATION INSTRUCTIONS

1. Secure the mounting ring (P/N P-039964-1243) to the electrical box, as shown in panel A.
2. Install the LSRA-232 Printer/Programming Port in the annunciator.
3. Set the DIP switches according to Table 1.
4. Connect the RS-485 wires to the appropriate 2-LSRA(-C) terminals.
5. Download annunciator data from the Systems Definition Utility. See the SDU online help and the LSRA-232/2-LSRA-PROG installation sheet for downloading instructions.
6. Slide the top of the annunciator onto the top flange of the mounting ring.
7. Push the bottom of the annunciator over the stud-nut, as shown in panel B.
8. Secure the bottom of the annunciator to the adapter ring using the screw provided, as shown in panel C.
9. Cover the screw hold with the label provided.

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>18.4 - 26.4 Vdc @ 80 mA</td>
</tr>
<tr>
<td>RS-485 communications</td>
<td>Class B (Style 4) or Class A (Style 7)</td>
</tr>
<tr>
<td>Baud rate</td>
<td>9600</td>
</tr>
<tr>
<td>Quantity/addressing</td>
<td>Up to 4 network addresses per annunciator (30 addresses max.)</td>
</tr>
<tr>
<td>Maximum wire length RS-232</td>
<td>50 ft (15 m)</td>
</tr>
<tr>
<td>Maximum wire length RS-485</td>
<td>7,700 ft (2,348 m), 18 AWG</td>
</tr>
<tr>
<td>(0.75 sq mm) Twisted Pair</td>
<td></td>
</tr>
<tr>
<td>Maximum wire size One AWG</td>
<td>One 14 AWG (1.5 sq mm)</td>
</tr>
<tr>
<td>or two 18 AWG (or 0.75 sq mm)</td>
<td></td>
</tr>
<tr>
<td>Optional printer port format</td>
<td>RS-232</td>
</tr>
<tr>
<td>Message capacity</td>
<td>88 messages per panel address</td>
</tr>
<tr>
<td></td>
<td>352 max. per annunciator</td>
</tr>
<tr>
<td>Mounting</td>
<td>North American 2-gang or 4-inch square electrical box</td>
</tr>
<tr>
<td>Dimensions (HWD)</td>
<td>U.S. 5-5/8 in x 8-3/8 in x 1-5/16 in</td>
</tr>
<tr>
<td></td>
<td>Metric 14.29 cm x 21.27 cm x 3.33 cm</td>
</tr>
<tr>
<td>LSRA-RK Remote Key Switch</td>
<td>1-5 Vdc @ 1.06 mA</td>
</tr>
<tr>
<td>Operating temperature range</td>
<td>power-limited, non-supervised</td>
</tr>
<tr>
<td>Operating humidity range</td>
<td>32 - 120 °F (0-49 °C)</td>
</tr>
<tr>
<td></td>
<td>0-93% RH, non-condensing</td>
</tr>
</tbody>
</table>

PRODUCT DIAGRAM

2-LSRA

Life Safety Remote Annunciator

2-LSRA-C

Life Safety Remote Annunciator

INSTALLATION SHEET:

EDWARDS SYSTEMS TECHNOLOGY, INC.

INSTALLATION SHEET P/N: 387414 FILE NAME: 387414.CDR
REVISION LEVEL: 2.0 APPROVED BY: K. Johnson
DATE: 11MAY00 CREATED BY: B. Graham
Related documentation: Installation and Service Manual; System Operations Manual; SDU online help; LSRA-232/LSRA-PROG installation sheet

EDWARDS SYSTEMS TECHNOLOGY, INC.

SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
### INSTALLATION

**Mounting slot**

**Removable access door**

**Remove for LSRA-232**

**Configuration dip switch**

**Connection Terminals**

- **Rx LED**
- **Tx LED**

**Life Safety Remote Annunciator (rear view)**

---

**Table 1: DIP switch settings**

<table>
<thead>
<tr>
<th>Description</th>
<th>Switch positions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annunciator programming mode</td>
<td>S1-1 ON* S1-2 ON* S1-3 OFF S1-4 OFF</td>
</tr>
<tr>
<td>Password programming mode</td>
<td>S1-1 OFF S1-2 OFF S1-3 ON* S1-4 OFF</td>
</tr>
<tr>
<td>Buzzer enabled and auto acknowledge disabled</td>
<td>S1-1 OFF S1-2 OFF S1-3 ON* S1-4 OFF</td>
</tr>
<tr>
<td>Buzzer disabled and auto acknowledge disabled</td>
<td>S1-1 OFF S1-2 ON S1-3 OFF S1-4 OFF</td>
</tr>
<tr>
<td>Buzzer enabled and auto acknowledge enabled</td>
<td>S1-1 ON S1-2 OFF S1-3 OFF S1-4 OFF</td>
</tr>
<tr>
<td>Buzzer disabled and auto acknowledge enabled</td>
<td>S1-1 ON S1-2 ON S1-3 OFF S1-4 OFF</td>
</tr>
</tbody>
</table>

* = Toggle ON and OFF

---

### Setting annunciator passwords

The steps below apply only to the 2-LSRA-C.

1. Remove the access door on rear of annunciator.
2. Set DIP switch S1-3 to the ON position.
3. At the control keys, enter a five (5) digit password.
4. Enter the same five digit password again.
5. Return DIP switch S1-3 to the OFF position.
6. Install the access door on the rear of the annunciator.
7. If the keyswitch is not used, connect a jumper wire from TB1-1 to TB1-2.

**Caution:** Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module. Exposing more than 1/4 inch of wire may cause a ground fault. Exposing less than 1/4 inch of wire may result in a faulty connection.

**Wire Stripping Guide**

1/4 inch (6.4 mm)

---

**Note:** See Preventing unauthorized use of LSRA control switches in the SDU online help for more instructions about LSRA passwords. More details about the 2-LSRA(-C) may be found with the keyword LSRA in the online search utility.
Wiring the 2-LSRA(-C) to a Main Controller Module

Wiring required for Class A circuits only

Provide physical separation between two wire bundles to ensure network survivability

Notes

- All wiring supervised and power-limited.
- Power-limited when connected to a power-limited source. Remove power-limited mark if nonpower-limited.
- 100Ω EOL resistor (P/N EOL-100) required on last device
- To balance of RS-485 components
- All wiring 18 AWG, twisted-pair.
- Route power-limited wiring separate and away from nonpower-limited wiring.
Wiring the 2-LSRA(-C) to a Network Main Controller Module

Notes

- All wiring supervised and power-limited.
- Power-limited when connected to a power-limited source. Remove power-limited mark if nonpower-limited.
- 100Ω EOL resistor (P/N EOL-100) required on last device
- All wiring 18 AWG, twisted-pair.
- Route power-limited wiring separate and away from nonpower-limited wiring.
PRODUCT DESCRIPTION

The Main Controller Module (MCM) is the foundation of the system and contains the principal microprocessor and controls for the fire alarm system.

The MCM has two dual purpose RS-485 ports. The RS-485 port provides Class A (Style 6) or Class B (Style 4) communications for the system. Each RS-485 terminal also provides communications for 2-LSRAs, 2-SMDNs, and SAN Annunciators.

The MCM also has an RS-232 port to provide communications for printers. A modular jack provides a means for downloading programmed data from an IBM compatible computer to the MCM. All external connections are transient-protected.

The MCM provides one multiplexed Signature Data Circuit (SDC) and two Notification Appliance Circuits (NACs). The SDC and the NACs can both operate on Class A or Class B wiring. The SDC can support 96 Signature Series detectors and 94 Signature Series modules. The NACs have separate input terminals, which are rated at 24 Vdc @ 3.5 A or 100 W @ 25 Vrms or 70 Vrms audio. The NAC terminals may share power or receive it from an external source.

During alarm, supervisory, and trouble conditions the MCM relay contacts close to report the off-normal conditions. There are two Form C relays and a Form A relay. The Form C relays handle alarm and trouble conditions and operate on 24 Vdc, nominal @ 1 A. The Form A relay handles supervisory conditions and operates on 24 Vdc, nominal @ 1 A.

SPECIFICATIONS

| Input Power | 24 Vdc @ 150 mA, standby; 275 mA active |
| RS-485 Terminals | | |
| Max. Line Capacity | 30 addresses* |
| Max. line parameters | 0.44 μF/100Ω |
| Max. Wire Size | 14 AWG (1.5 mm²) |
| *Note: SAN annunciators, 2-LSRAs, 2-SMDNs, or 2-AACs. |
| RS-232 Terminal | Non-isolated, 50 ft. (15.2 m) max. |
| | Must be located in the same room. |

NACs

| Quantity/Style | Two Class A (Style Z) or Class B (Style Y) |
| Voltage | 24 Vdc, Nominal |
| Available NAC Current | 3.5 A for all NACs |
| NAC Current Rating | 3.5 A or 100 W @ 25/70 Vrms per circuit |
| EOL Resistor | 15 kΩ, ½ W |
| Maximum Wire Size | 12 AWG (2.5 mm²) |

SDC

| Class (Style) | Class A (Style 6) or Class B (Style 4) |
| Detector Capacity | 96 Signature Series detectors |
| Module Capacity | 94 Signature Series modules |
| Line Resistance | 65 Ω max. full load |
| Line Capacitance | 0.33 μF max. |
| Maximum Wire Size | 14 AWG (1.5 mm²) |

Relay Contacts

| Alarm and Trouble | Form C, rated at 24 Vdc nominal @ 1 A |
| Supervisory | Form A, rated at 24 Vdc nominal @ 1 A |

Environmental Conditions

| Temperature Range | 32 to 120 °F (0 to 49 °C) |
| Humidity | 0 to 93%, Non-condensing |

PRODUCT DIAGRAM

Warning!

Observe static-sensitive material handling practices.

Caution!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Wire Stripping Guide

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

1/4 inch (6.4 mm)

Caution:

Exposing more than 1/4 inch of wire may cause a ground fault.

Exposing less than 1/4 inch of wire may result in a faulty connection.

INSTALLATION SHEET:

2-MCM Main Controller Module

INSTALLATION SHEET P/N: 270210 FILE NAME: 270210.CDR

REVISION LEVEL: 3.0 APPROVED BY: B. Wanek

DATE: 24APR00 CREATED BY: B. Graham

Related documentation: Installation and Service Manual

EDWARDS SYSTEMS TECHNOLOGY, INC. SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
**INSTALLATION**

1. Mount the Main Controller Module with the screws and washers provided.

2. Connect the ribbon cables to the Main Controller Module.

---

**INTERNAL WIRING**

**Download Wiring**

- **Note:** Disconnect the printer while downloading.

**Printer Wiring**

**RS-485 Port Wiring**

**Caution:** Any wiring that exits one building and enters another requires a Ditek surge protector module. See the Installation and Service Manual.
RPM Wiring

Notes

1. Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.

2. UL/ULC Listed 3.9 kΩ EOL resistor (P/N 260001) required. Circuit not used.

RPM Jumper Settings

<table>
<thead>
<tr>
<th>Circuits*</th>
<th>JP1</th>
<th>Alarm</th>
<th>Supervisory</th>
<th>Trouble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate</td>
<td>In</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-7,8: Reverse Polarity</td>
<td>TB1-5,6: Reverse Polarity</td>
</tr>
<tr>
<td>Single Circuit*</td>
<td>Out</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-3,4: 0.0 Vdc**</td>
<td>TB1-3,4: 0.0 Vdc**</td>
</tr>
</tbody>
</table>

*Alarm, Supervisory, and Trouble
** Alarm overrides supervisory and trouble.

MTM Wiring

Detail A

1. TB1
2. 24V: Morse U: K2 and K3 jumpered to COM
3. K2: March Time: K3 jumpered to COM
4. K3: Temporal: No jumpers
5. NC: Contact Ratings: 24Vdc @ 4A (0.35 pf) pilot duty
Supervised
Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.
15 kΩ EOL required for Class B (Style Y) wiring only.
Supervised and power-limited
No T-taps when wired as a Class A (Style 6) circuit.
6 For maximum wire resistance, see the Installation and Service Manual.
7 Contacts shown with system power applied.

Legend
- Signature Series module/pull station
- Signature Series smoke detector
- Notification appliance

Notes
- Supervised
- Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.
- 15 kΩ EOL required for Class B (Style Y) wiring only.
- Supervised and power-limited
- No T-taps when wired as a Class A (Style 6) circuit.
- For maximum wire resistance, see the Installation and Service Manual.
- Contacts shown with system power applied.
The Network Main Controller Module (MCMN) is the foundation of the network and contains the principal microprocessor and controls for the fire alarm system.

The MCMN has a dual-purpose RS-485 port. The network terminals (NET) provide Class A (Style 6) or Class B (Style 4) communications for the network. The annunciator terminals (ANN) provide communications with 2-LSRAs, 2-SMDNs, and SAN Annunciators.

The MCMN also has an RS-232 port to provide communications for printers. An RJ-11 jack provides a means for downloading programmed data from an IBM compatible computer to the MCMN. All external connections are transient-protected.

The MCMN provides one multiplexed Signature Data Circuit (SDC) and two Notification Appliance Circuits (NACs). The SDC and the NACs can both operate on Class A or Class B wiring. The SDC can support 96 Signature Series detectors and 94 Signature Series modules. The NACs have separate input terminals, which are rated at 24 Vdc @ 3.5 A or 100 W @ 25 Vrms or 70 Vrms audio. The NAC terminals may share power or receive it from an external source.

During alarm, supervisory, and trouble conditions the MCMN relay contacts close to report the off-normal conditions. There are two Form C relays and a Form A relay. The Form C relays handle alarm and trouble conditions and operate on 24 Vdc, nominal @ 1 A. The Form A relay handles supervisory conditions and operates on 24 Vdc, nominal @ 1 A.

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Caution: Exposing more than 1/4 inch of wire may cause a ground fault. Exposing less than 1/4 inch of wire may result in a faulty connection.
1. Mount the Network Main Controller Module with the screws and washers provided.

2. Connect the ribbon cables to the Network Main Controller Module.

Note: If you install a DL2, mount it before you mount the Network Main Controller Module. See the DL2 installation sheet.

Download Wiring

Note: Disconnect the printer while downloading.

Pin Function
RXD
TXD
COM
To Pin
7
32
13
25
DB25 Female (Front View)

IBM Compatible Computer

RS-485 Port Wiring

Caution: Any wiring that exits one building and enters another requires a Ditek surge protector module. See the Network Supplement Manual.

Printer Wiring

Pin Function
RXD
TXD
COM
Non-supervised and power-limited
RS-232

Form printer

IBM Compatible Computer

Supervised and power-limited

See the Network Supplement Manual for detailed RS-485 wiring information.
### RPM Wiring

**Notes**

- Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.
- UL/ULC Listed 3.9 kΩ EOL resistor (P/N 260001) required. Circuit not used.

**RPM Jumper Settings**

<table>
<thead>
<tr>
<th>Circuits*</th>
<th>JP1</th>
<th>Alarm</th>
<th>Supervisory</th>
<th>Trouble</th>
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<tr>
<td>Separate Circuits*</td>
<td>In</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-7,8: Reverse Polarity</td>
<td>TB1-5,6: Reverse Polarity</td>
</tr>
<tr>
<td>Single Circuit*</td>
<td>Out</td>
<td>TB1-3,4: Reverse Polarity</td>
<td>TB1-3,4: 0.0 Vdc**</td>
<td>TB1-3,4: 0.0 Vdc**</td>
</tr>
</tbody>
</table>

*Alarm, Supervisory, and Trouble
** Alarm overrides supervisory and trouble.

### MTM Wiring

**Detail A**

- **TB1**: Morse U: K2 and K3 jumpered to COM
- **24V**: March Time: K3 jumpered to COM
- **K2**: Temporal: No jumpers
- **K3**: Contact Ratings: 24Vdc @ 4A (0.35 pf) pilot duty

---

**387472.CDR REV 2.0 Page 3 of 4**
### Notes

- Supervised
- Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch (6.4 mm) from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.
- 15 kΩ EOL required for Class B (Style Y) wiring only.
- Supervised and power-limited
- No T-taps when wired as a Class A (Style 7) circuit.
- For maximum wire resistance, see the Installation and Service Manual.
- Contacts shown with system power applied.

### Legend

- Signature Series module/pull station
- Signature Series smoke detector
- Notification appliance

---

**Network Main Controller Module**

- **NAC 1 Source:** listed fire alarm power supply or amplifier
- **NAC 2 Source:** listed fire alarm power supply or amplifier

**Class A (Style Z) configuration only**

- UL/ULC Listed 15 kΩ EOL

**Class A (Style 7) configuration only**

- UL/ULC Listed 15 kΩ EOL

---

**Network Main Controller Module**

- **NAC 1:**
  - NAC1/B
  - NAC1/A
  - SOURCE
  - TB1

- **NAC 2:**
  - NAC2/B
  - NAC2/A
  - SOURCE
  - TB2

- **Network Main Controller Module**
  - **TB6**
    - SIGA/B
    - SIGA/A

---

**Supervised and power-limited**

For maximum wire resistance, see the Installation and Service Manual.
**PRODUCT DESCRIPTION**

The 2-MIC is a microphone module that issues pages over the emergency communication system. The microphone module consists of a dynamic push-to-talk (PTT) microphone and the following page controls:

- Phone to Evac
- Phone to Alert
- Page to Evac
- Page to Alert
- Evac
- Alert

**SPECIFICATIONS**

Environmental conditions
- Temperature: 32-120 °F (0-49 °C)
- Humidity: 0-93%, Non-condensing

Note: See the 2-AAC installation sheet for standby and alarm currents.

**INSTALLATION**

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

**PRODUCT DIAGRAM**

**INSTALLATION SHEET:**

2-MIC Microphone Module

INSTALLATION SHEET P/N: 387562  FILE NAME: 387562.CDR
REVISION LEVEL: 1.0  APPROVED BY: J. Massing
DATE: 30MAR00  CREATED BY: B. Graham

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
Note
See the 2-AAC installation sheet for more information about the audio controller module.
**PRODUCT DESCRIPTION**

The 2-PPS(-220) Primary Power Supply is a switch-mode power source, which energizes system modules, monitors the AC line, and performs ground fault testing. In the event of a brownout or AC power failure, the primary power supply provides battery charging and automatic transfer to backup power. The power supply is designed to prevent total battery discharge, and automatically disables the battery charger during an alarm. MOVs and a common mode choke protect the AC input voltage from transient spikes. The output also provides power for Notification Appliance Circuits (NACs) and four-wire smoke detectors.

**SPECIFICATIONS**

- **Input voltage**
  - 2-PPS: 120 Vac @ 300 W maximum, 50/60 Hz
  - 2-PPS-220: 220 Vac @ 300 W maximum, 50/60 Hz

- **Output voltage**
  - 24 Vdc, nominal @ 5.0 A

- **Battery charging**
  - 24 Ah, maximum

- **Smoke detector power**
  - 24 Vdc @ 500 mA maximum, reset programmable

- **Device capacitance**
  - 1000 µF, maximum

- **NAC power**
  - Voltage: 24 Vdc, Nominal
  - Available NAC Current: 3.5 A total for all NACs
  - Device capacitance: 5000 µF, maximum

- **Maximum wire size**
  - 12 AWG (2.5 mm²)

- **Environmental Conditions**
  - Temperature range: 32 to 120 °F (0 to 49 °C)
  - Humidity: 0 to 93%, Non-condensing

**INSTALLATION**

1. Mount the Primary Power Supply with the screws and washers provided.

![Diagram](PrimaryPowerSupply.png)

- 6/32 x 3/8 pan head screws
- #6 interlocking washers

2. Connect the ribbon cables to the Primary Power Supply.

![Diagram](RibbonCable.png)

**PRODUCT DIAGRAM**

**WIRE ROUTING**

The routing of power-limited and nonpower-limited wiring differs with each cabinet. For more information on the routing of power-limited and nonpower-limited wiring, see the cabinet’s installation sheet.

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
3. Set the Smoke/Aux power select jumper.

**Settings**

In: Maintain continuous smoke/aux. power.
Out: Interrupt smoke/aux. power upon reset.

Wire Stripping Guide

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

**Caution:**

Exposing more than 1/4 inch of wire may cause a ground fault.
Exposing less than 1/4 inch of wire may result in a faulty connection.

To dedicated 220 Vac, 7.5 Amp, 50/60 Hz supervised branch circuit

To dedicated 120 Vac, 15 Amp, 50/60 Hz supervised branch circuit

Route the battery wiring harness (P/N 250181) through the plastic channel under the Main Controller Module and the Expander Loop Module to the battery terminals.

Notes

- Power-limited
- Nonpower-limited
- Supervised
- Nonsupervised
**PRODUCT DESCRIPTION**

The 2-PPS/6A(-220) Primary Power Supply is a switch-mode power source, which energizes system modules, monitors the AC line, and performs ground fault testing. In the event of a brownout or AC power failure, the primary power supply provides battery charging and automatic transfer to backup power. The power supply is designed to prevent total battery discharge, and automatically disables the battery charger during an alarm. MOVs and a common mode choke protect the AC input voltage from transient spikes. The output also provides power for Notification Appliance Circuits (NACs).

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>2-PPS/6A</th>
<th>2-PPS/6A-220</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input voltage</td>
<td>120 Vac @ 300 W maximum, 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 Vac @ 300 W maximum, 50/60 Hz</td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td>24 Vdc, nominal @ 6.4 A total</td>
<td></td>
</tr>
<tr>
<td>Battery charging</td>
<td>24 Ah, maximum</td>
<td></td>
</tr>
<tr>
<td>Device capacitance</td>
<td>1000 μF, maximum</td>
<td></td>
</tr>
<tr>
<td>NAC1 output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>24 Vdc, Nominal</td>
<td></td>
</tr>
<tr>
<td>Available current</td>
<td>3.2 A maximum</td>
<td></td>
</tr>
<tr>
<td>Device capacitance</td>
<td>5000 μF, maximum</td>
<td></td>
</tr>
<tr>
<td>NAC2 output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage</td>
<td>24 Vdc, Nominal</td>
<td></td>
</tr>
<tr>
<td>Available current</td>
<td>3.2 A maximum</td>
<td></td>
</tr>
<tr>
<td>Device capacitance</td>
<td>5000 μF, maximum</td>
<td></td>
</tr>
<tr>
<td>Maximum wire size</td>
<td>12 AWG (2.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Environmental Conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>32 to 120 °F (0 to 49 °C)</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 93%, Non-condensing</td>
<td></td>
</tr>
</tbody>
</table>

**WARNING**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**CAUTION**

Observe static-sensitive material handling practices.

**WIRE ROUTING**

The routing of power-limited and nonpower-limited wiring differs with each cabinet. For more information on the routing of power-limited and nonpower-limited wiring, see the cabinet’s installation sheet.

**PRODUCT DIAGRAM**

1. Mount the Primary Power Supply with the screws and washers provided.

2. Connect the ribbon cables to the Primary Power Supply.

---

**INSTALLATION SHEET:**

2-PPS/6A(-220) Primary Power Supply Module

**INSTALLATION SHEET P/N:** 387222  
**FILE NAME:** 387222.CDR

**REVISION LEVEL:** 2.0  
**APPROVED BY:** J. Massing

**DATE:** 30MAR00  
**CREATED BY:** B. Graham
Wire Stripping Guide

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Caution:
Exposing more than 1/4 inch of wire may cause a ground fault.
Exposing less than 1/4 inch of wire may result in a faulty connection.

To dedicated 220 Vac, 7.5 Amp, 50/60 Hz supervised branch circuit

To dedicated 120 Vac, 15 Amp, 50/60 Hz supervised branch circuit

See the details below for the battery terminal wiring. See the ribbon cable connections in step 2.

Notes

- Power-limited
- Nonpower-limited
- Supervised
- Nonsupervised

Route the battery wiring harness (P/N 250181) through the plastic channel under the Main Controller Module and the Expander Loop Module to the battery terminals.
PRODUCT DESCRIPTION

The 2-SANCOM is an operator interface, which provides indicators and controls in a SAN series package for use anywhere on the network. The 2-SANCOM requires a SAN-CPU, which is connected to it on a ribbon cable chain along with other SAN series modules. See the drawings on the reverse side of this installation sheet.

Indicators

<table>
<thead>
<tr>
<th>LED</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>A green LED that functions according to position of JP3.</td>
</tr>
<tr>
<td>Alarm</td>
<td>A red LED that flashes to indicate system alarm conditions.</td>
</tr>
<tr>
<td>Supervisory</td>
<td>A yellow LED that flashes to indicate supervisory conditions.</td>
</tr>
<tr>
<td>Trouble</td>
<td>A yellow LED that flashes to indicate system trouble conditions.</td>
</tr>
<tr>
<td>Security</td>
<td>A yellow LED that flashes to indicate security conditions.</td>
</tr>
<tr>
<td>Alarm Silence</td>
<td>A yellow LED that indicates the silencing of audible devices.</td>
</tr>
<tr>
<td>Trouble Silence</td>
<td>A yellow LED that indicates the silencing of the system-wide trouble buzzer(s).</td>
</tr>
<tr>
<td>Drill/All Call</td>
<td>A yellow LED that indicates the activation of the drill/all call function.</td>
</tr>
</tbody>
</table>

Sounder Description

<table>
<thead>
<tr>
<th>Buzzer</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Operates in conjunction with the sounder on the control panel.</td>
</tr>
</tbody>
</table>

Resound

| Trouble feature: | Activation of local silence in either location will silence the buzzer until a new condition is sensed on the system. |

Controls

<table>
<thead>
<tr>
<th>Switch</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reset</td>
<td>A momentary toggle switch that resets the system.</td>
</tr>
<tr>
<td>Alarm Silence</td>
<td>A momentary toggle switch that silences audible circuits.</td>
</tr>
<tr>
<td>Local Silence</td>
<td>A momentary toggle switch that silences the system-wide trouble buzzer.</td>
</tr>
<tr>
<td>Drill/All Call</td>
<td>A momentary toggle switch that activates all audible/visual circuits.</td>
</tr>
<tr>
<td>Lamp Test</td>
<td>A maintained toggle switch that tests all indicators on SAN option modules.</td>
</tr>
<tr>
<td>Enable/Disable</td>
<td>A key switch that disables the 2-SANCOM controls.</td>
</tr>
</tbody>
</table>

JUMPER SETUP

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>JP1 Zone Report Jumper</td>
<td>Activation of the enable/disable keyswitch will generate a zone (xx05)</td>
</tr>
<tr>
<td>In the Enable position:</td>
<td>Activation of the enable/disable keyswitch will not generate a zone.</td>
</tr>
<tr>
<td>In the Disable position:</td>
<td></td>
</tr>
<tr>
<td>JP2 Continuity Jumper</td>
<td>JP2 designates the 2-SANCOM as the last module installed in the SAN/RSAN series modules.</td>
</tr>
<tr>
<td>JP3 Region Jumper</td>
<td>The 2-SANCOM will light the program-driven Power LED.</td>
</tr>
<tr>
<td>In the USA position:</td>
<td>The Power LED will operate in conjunction with 24 Vdc power.</td>
</tr>
<tr>
<td>In the Europe position:</td>
<td></td>
</tr>
</tbody>
</table>

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Power</th>
<th>From SAN-CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby</td>
<td>22 mA</td>
</tr>
<tr>
<td>Alarm</td>
<td>7 mA</td>
</tr>
<tr>
<td>Trouble</td>
<td>15 mA</td>
</tr>
</tbody>
</table>

Address requirements

<table>
<thead>
<tr>
<th>Inputs</th>
<th>1 (1 group of eight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outputs</td>
<td>1 (1 group of eight)</td>
</tr>
</tbody>
</table>

Weight

3.3 oz (93.5 g)

Mounting

See the related documentation listed in the title block for the approved enclosures.

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

PRODUCT DIAGRAM

![Product Diagram](image-url)
1 Mount the 2-SANCOM.

Note: See the related documentation listed in the title block for more information about specific mounting units.

On a 6-unit, 19-inch rack mount

Side view 2-SANCOM Rear view

<table>
<thead>
<tr>
<th>Group Number</th>
<th>Addresses</th>
<th>S1 dip switch settings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>01-08</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>1</td>
<td>09-16</td>
<td>on off off off</td>
</tr>
<tr>
<td>2</td>
<td>17-24</td>
<td>on off off off</td>
</tr>
<tr>
<td>3</td>
<td>25-32</td>
<td>off on off off</td>
</tr>
<tr>
<td>4</td>
<td>33-40</td>
<td>on off on off</td>
</tr>
<tr>
<td>5</td>
<td>41-48</td>
<td>off on off off</td>
</tr>
<tr>
<td>6</td>
<td>49-56</td>
<td>on on on on</td>
</tr>
<tr>
<td>7</td>
<td>57-64</td>
<td>off off off on</td>
</tr>
<tr>
<td>8</td>
<td>65-72</td>
<td>on off off on</td>
</tr>
<tr>
<td>9</td>
<td>73-80</td>
<td>off on off on</td>
</tr>
<tr>
<td>10</td>
<td>81-88</td>
<td>on on off on</td>
</tr>
<tr>
<td>11</td>
<td>89-96</td>
<td>off off on on</td>
</tr>
</tbody>
</table>

For programming purposes, remember that:
- The first input address group and the first output address group belong to the 2-SANCOM regardless of its physical location.
- Each address group consists of eight addresses.
- All other SAN modules must start at address 09 for input and output groups.
- You must install J2 if the 2-SANCOM is the last module on the ribbon cable chain.

2 Make the ribbon cable connections.

A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
D. Install the continuity jumper on the last SAN module.

Note: If the 2-SANCOM is the last module, install the continuity jumper on JP2.

Make the ribbon cable connections.
The 2-SMK Smoke Power Module is a backup power source for 2-wire smoke circuits connected to a Signature Data Circuit. The Smoke Power Module monitors the operating power from the power supply. When power begins to degrade, the 2-SMK provides the necessary operating voltage to the 2-wire smoke detection circuits.

**PRODUCT INFORMATION**

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input power</td>
<td>24 Vdc, nominal per UL</td>
</tr>
<tr>
<td>Output power</td>
<td>22.0 to 26.4 Vdc @ 425 mA, maximum</td>
</tr>
<tr>
<td>Wire size</td>
<td>14 AWG (1.5 mm²) to 18 AWG (0.75 mm²)</td>
</tr>
<tr>
<td>Environmental Conditions</td>
<td></td>
</tr>
<tr>
<td>Temperature Range</td>
<td>32 to 120 °F (0 to 49 °C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>0 to 93%, Non-condensing</td>
</tr>
</tbody>
</table>

**INSTALLATION**

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

**Wire Stripping Guide**

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Caution: Exposing more than 1/4 inch of wire may cause a ground fault. Exposing less than 1/4 inch of wire may result in a faulty connection.

**PRODUCT DIAGRAM**

**INSTALLATION SHEET:**

2-SMK Smoke Power Converter Module

**COMPATIBLE ELECTRIC BOXES**

- North American 2-1/2 inch (64 mm) deep 2-gang box
- Standard 4: Square 1-1/2 inch (38 mm) deep box
- European 100 mm square box
FIELD WIRING

**Notes**

1. All wiring is supervised and power-limited.
2. See the Signature Series Component Installation Manual for more information about the Universal Module and its configuration.
3. Signature-UMs set to personality code 13, 14, 20, or 21
5. From the Signature loop controller at the fire alarm control panel or the previous Signature device
**PRODUCT DESCRIPTION**

The 2-TEL is the operator interface for the firefighter telephone system. The module houses the master telephone handset, the silence call-in switch, and the phone call-in silenced LED. The 2-AAC Audio Control Module with a 2-TEL option board provides the electrical terminations for the module. The module communicates with up to five handsets simultaneously. LED Annunciator/switch modules provide selection of the telephone circuits.

**SPECIFICATIONS**

- **Riser wiring configuration**: Two Class B (Style Y) risers
- **Output voltage**: 18 Vdc
- **EOL resistor**: 10 kΩ
- **Maximum remote phones on line**: Five (total) on both risers
- **Environmental conditions**
  - Temperature: 32-120 °F (0-49 °C)
  - Humidity: 0-93%, Non-condensing

**INSTALLATION**

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

**Mounting the 2-TEL option board**

1. Snap the plastic standoffs into the appropriate holes on the 2-AAC.

2. Align J1 of the 2-TEL option board with J4 of the 2-AAC.

3. Snap the 2-TEL option board to the plastic standoffs on the 2-ACC.

**PRODUCT DIAGRAM**

**EDWARDS SYSTEMS TECHNOLOGY, INC.**

SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9653

**INSTALLATION SHEET:**

2-TEL Firefighter Telephone Module

INSTALLATION SHEET P/N: 387344 FILE NAME: 387344.CDR
REVISION LEVEL: 2.0 APPROVED BY: J. Massing
DATE: 30MAR00 CREATED BY: B. Graham
Related documentation: 2-AAC installation sheet; Signature Series Component Installation Manual
Twisted-shield wire
Shields shall be continuous and isolated from ground except at the originating panel.
See the 2-AAC installation sheet (P/N 387345).
UL/ULC listed 47 KΩ EOL
Signature Series dual input module (personality code 3)
7 All wiring is supervised and power-limited.
6 Set CC1s to personality code 6.

From Signature loop controller or previous device

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Channel 1 functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2, 3</td>
<td>Trouble contacts</td>
</tr>
<tr>
<td>7</td>
<td>70 Vrms audio riser input</td>
</tr>
<tr>
<td>8</td>
<td>25 Vrms audio riser input</td>
</tr>
<tr>
<td>9</td>
<td>Firefighter telephone riser input Common</td>
</tr>
<tr>
<td>10</td>
<td>Firefighter telephone riser input Common</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Channel 2 functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>4, 5, 6</td>
<td>Trouble contacts</td>
</tr>
<tr>
<td>11</td>
<td>70 Vrms audio riser input</td>
</tr>
<tr>
<td>12</td>
<td>25 Vrms audio riser input</td>
</tr>
<tr>
<td>13</td>
<td>Firefighter telephone riser input</td>
</tr>
<tr>
<td>14</td>
<td>Firefighter telephone riser input Common</td>
</tr>
</tbody>
</table>

Note: Remove JP1 on the 2-AAC to enable supervision for the 2-TEL option board.

UL/ULC Listed 10 K Ω EOL on unused riser

WIRING

INSTALLATION

2-AAC without 2-TEL option board

2-AAC with 2-TEL option board

VIRING
PRODUCT DESCRIPTION

The 2-WB(R) is a semi-flush mount wallbox, which is available in two colors: grey or red (R).

INSTALLATION

1. Mount the wallbox.

2. Connect the cabinet to earth ground.
   - Grounding strap (P/N 260077)
   - To the inner door
   - Earth ground cable
   - Lock washer
   - #8-32 nut

WIRE ROUTING

- Run the AC power only through the top left knockout or top center knockout.
- If a nonpower-limited source feeds the relay contacts, the wiring must remain within this area.
- Route wiring to the power supply through a protective channel when using a remote battery enclosure. Nonpower-limited wiring must stay in the shaded area, and must remain ¼ inch (6.4 mm) from power-limited wiring.

Notes

- The snap-top standoffs, located on both sides of the wallbox, can support any module that requires a one-half footprint mounting space.
- The battery space supports up to two 12 Vdc, 17 Ah batteries. Do not install conduit in this area.
- See the Installation and Service Manual for the mounting of modules in this equipment enclosure.
All conduit knockouts support 3/4 inch (1.9 cm) conduit.
The 2-WB3(R) is a surface mounted wallbox, which is available in grey or red (R). The following subassemblies may be ordered to modify the wallbox:

- 2-LFK(R) trim kit for semi-flush mounting
- 2-WB3D/DF dead front door for the (red only)

The dead front door does not include an inner door.

### INSTALLATION

1. Mount the wallbox.

Note: See the trim kit installation sheet for semi-flush mounting instructions on this wallbox (P/N 387570).

2. Connect the cabinet to earth ground.

3. Permissible nonpower-limited wiring areas

### WIRE ROUTING

Run the AC power only through the top left knockout or top center knockout.

If a nonpower-limited source feeds the relay contacts, the wiring must remain within this area.

Route wiring to the power supply through a protective channel when using a remote battery enclosure. Nonpower-limited wiring must stay in the shaded area, and must remain 1/4 inch (6.4 mm) from power-limited wiring.

The snap-top standoffs, located on both sides of the wallbox, can support any module that requires a one-half footprint mounting space.

The battery space supports up to two 12 Vdc, 17 Ah batteries. Do not install conduit in this area.

See the Installation and Service Manual for the mounting of modules in this equipment enclosure.
DIMENSIONS

All conduit knockouts support 3/4 inch (1.9 cm) conduit.
The 2-WB3D(R) is a set consisting of an outer door and two inner doors. The doors mount on a 2-WB3(R) wallbox. The outer door is available in two colors: grey or red (R), and has one Lexan™ viewing window. The inner doors are available only in grey and provide mounting space for operator interface modules and emergency communications equipment. The 2-WB3D/DF is a dead front outer door, which does not include an inner door. The dead front door is available only in red.

### INSTALLATION

1. Mount the inner door.

2. Mount the outer door.

### Related Documentation

See the following installation sheets for the mounting of inner door components:

- Liquid Crystal Display (P/N 270212)
- LED/Switch modules (P/N 270214)
- Firefighter Telephone (P/N 387344)
- Microphone (P/N 387562)
The 2-WB7(R) is a surface mounted wallbox, which is available in grey or red (R). The following subassemblies may be ordered to modify the wallbox:

- 2-DFK(R) trim kit for semi-flush mounting
- 2-WB7D/DF dead front door for the (red only)

The dead front door does not include an inner door.

### WIRE ROUTING

- Grommet for power lines
- Nonpower-limited area
- Permissible nonpower-limited wiring areas

**Notes**

1. Run the AC power only through the top left knockout or top center knockout.
2. If a nonpower-limited source feeds the relay contacts, the wiring must remain within this area.
3. Install spacers on stud A to mount an Audio Amplifier Module. Install spacers on stud B to mount a Main Controller Module.
4. Route wiring to the power supply through a protective channel when using a remote battery enclosure. Nonpower-limited wiring must stay in the shaded area, and must remain 1/4 inch (6.4 mm) from power-limited wiring.
5. The snap-top standoffs, located on both sides of the wallbox, can support any module that requires a one-half footprint mounting space.
6. The battery space supports up to two 12 Vdc, 17 Ah batteries. Do not install conduit in this area.
7. See the Installation and Service Manual for the mounting of modules in this equipment enclosure.

### INSTALLATION

1. Mount the wallbox.

2. Connect the cabinet to earth ground.

**Note:** See the trim kit installation sheet for semi-flush mounting instructions on this wallbox (P/N 387569).

**Legend:**
- Wallbox mounting hole
- Wallbox
- Grounding strap
- Ground lug
- Lock washer
- #8-32 nut
- Primary Power Supply
- Auxiliary Power Supply
- Main Controller Module
- Expander Loop Module
- Audio Control Module
- Audio Amplifier Module
- Battery space

**Permissible nonpower-limited wiring areas**

**Details:**
- Grommet for power lines
- Nonpower-limited area
- Permissible nonpower-limited wiring areas

**Notes**

1. Run the AC power only through the top left knockout or top center knockout.
2. If a nonpower-limited source feeds the relay contacts, the wiring must remain within this area.
3. Install spacers on stud A to mount an Audio Amplifier Module. Install spacers on stud B to mount a Main Controller Module.
4. Route wiring to the power supply through a protective channel when using a remote battery enclosure. Nonpower-limited wiring must stay in the shaded area, and must remain 1/4 inch (6.4 mm) from power-limited wiring.
5. The snap-top standoffs, located on both sides of the wallbox, can support any module that requires a one-half footprint mounting space.
6. The battery space supports up to two 12 Vdc, 17 Ah batteries. Do not install conduit in this area.
7. See the Installation and Service Manual for the mounting of modules in this equipment enclosure.
DIMENSIONS

All conduit knockouts support 3/4 inch (1.9 cm) conduit.
**PRODUCT DESCRIPTION**

The 2-WB7D(R) is a set consisting of an outer door and two inner doors. The doors mount on a 2-WB7(R) wallbox. The outer door is available in two colors: grey or red (R), and has one Lexan™ viewing window. The inner doors are available only in grey and provide mounting space for operator interface modules and emergency communications equipment. The 2-WB7D/DF is a dead front outer door, which does not come with an inner door. The dead front door is available only in red.

**INSTALLATION**

1. Mount the inner doors.
   - Wallbox (rear view)
   - Wallbox stud
   - Inner door hinge
   - Upper inner door
   - Lower inner door
   - Washer
   - Nut

   Secure the inner doors with five #8/32 nuts and lock washers each, as shown in Detail A.

2. Mount the outer door.
   - Outer door (rear view)
   - Wallbox hinge
   - Washer
   - Nut

   Secure the outer door with ten #8/32 nuts and lock washers, as shown in Detail B.

---

GS BUILDING SYSTEMS CORPORATION
A UNIT OF GENERAL SIGNAL

6411 Parkland Drive
Sarasota, FL 34243
USA

625 6th Street East
Owen Sound, Ontario
Canada N4K 5P8
3 Mount the operator instructions

**Related Documentation**

See the following installation sheets for the mounting of inner door components:

- Liquid Crystal Display (P/N 270212)
- LED/Switch modules (P/N 270214)
- Firefighter Telephone (P/N 387344)
- Microphone (P/N 387562)
The 2-WBD(R) is a set consisting of an outer door and an inner door. Both doors mount on a 2-WB(R) wallbox. The outer door is available in two colors: grey or red (R), and has one Lexan™ viewing window. The inner door is available only in grey and provides mounting space for operator interface modules.

### INSTALLATION

1. Mount the inner door.

![Inner Door Mounting Diagram]

2. Mount the outer door.

![Outer Door Mounting Diagram]

3. Mount the operator instructions.

![Operator Instructions Mounting Diagram]

### Related Documentation

See the following installation sheets for the mounting of inner door components:

- Liquid Crystal Display (P/N 270212)
- LED/Switch modules (P/N 270214)
The 2-WBDS(R) is a set consisting of an outer door and an inner door. Both doors mount on a 2-WBS(R) wallbox. The outer door is available in two colors: grey or red (R), and has one Lexan™ viewing window. The inner door is available only in grey and provides mounting space for operator interface modules.

### INSTALLATION

1. Mount the inner door.

2. Mount the outer door.

3. Mount the operator instructions.

### Related Documentation

See the following installation sheets for the mounting of inner door components:
- Liquid Crystal Display (P/N 270212)
- LED/Switch modules (P/N 270214)

### INSTALLATION SHEET:

2-WBDS(R)
Outer Door and Inner Door

INSTALLATION SHEET P/N: 387218  FILE NAME: 387218.CDR
REVISION LEVEL: 2.0  APPROVED BY: K. Patterson
DATE: 02/03/99  CREATED BY: B. Graham
The 2-WBS(R) is a surface mount wallbox, which is available in two colors: grey or red (R).

**WIRE ROUTING**

1. Mount the wallbox.

2. Connect the cabinet to earth ground.

   - Grounding strap (P/N 260077)
   - Ground lug
   - Wallbox
   - Earth ground cable
   - Lock washer
   - #8-32 nut

**Notes**

- Run the AC power only through the top left knockouts.
- If a nonpower-limited source feeds the relay contacts, the wiring must remain within this area.
- Route wiring to the power supply through a protective channel when using a remote battery enclosure. Nonpower-limited wiring must stay in the shaded area, and must remain ¼ inch (6.4 mm) from power-limited wiring.
- The snap-top standoffs, located on both sides of the wallbox, can support any module that requires a one-half footprint mounting space.
- The battery space supports up to two 12 Vdc, 17 Ah batteries. Do not install conduit in this area.
- See the Installation and Service Manual for the mounting of modules in this equipment enclosure.
All conduit knockouts support 3/4 inch (1.9 cm) conduit.
**PRODUCT DESCRIPTION**

The 6ANN/B(-S) and the 10ANN/B(-S) are wallboxes constructed of 16 guage steel with a textured, gray enamel finish. The wallboxes house remote annunciator CPUs and optional modules that interface with other network components.

**6ANN/B(-S)**
The following models identify the same wallbox:

<table>
<thead>
<tr>
<th>Model</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>6ANN/B</td>
<td>Surface</td>
</tr>
<tr>
<td>6ANN/B-S</td>
<td>Semi-flush</td>
</tr>
</tbody>
</table>

**10ANN/B(-S)**
The following models identify the same wallbox:

<table>
<thead>
<tr>
<th>Model</th>
<th>Mounting</th>
</tr>
</thead>
<tbody>
<tr>
<td>10ANN/B</td>
<td>Surface</td>
</tr>
<tr>
<td>10ANN/B-S</td>
<td>Semi-flush</td>
</tr>
</tbody>
</table>

**DIMENSIONS**

**6ANN/B(-S)**

- **Semi-flush**
  - 14.48 in (36.78 cm)
  - 2.75 in (6.99 cm)
  - 16.1 in (40.9 cm)
  - 13.19 in (33.5 cm)
  - 12.1 in (30.7 cm)

- **Surface mount**
  - 16.1 in (40.9 cm)
  - 2.75 in (7.0 cm)
  - 13.19 in (33.5 cm)

**WIRE ROUTING**

If a nonpower-limited source feeds the 2-CPU relay contacts, the wiring must remain within this area. All other wiring shall be power-limited.

**Earth ground connection**

- 2-CPU
- Optional module

**Detail**

1. Ground Strap
2. Wallbox
3. Ground Lug
4. Typical Knockout
5. Earth Ground Wire
6. Outer Door

**INSTALLATION SHEET:**

**6ANN/B(-S) and 10ANN/B(-S)**
Remote Annunciator Cabinet Wallboxes

**INSTALLATION SHEET P/N:** 387586  **FILE NAME:** 387586.CDR
**REVISION LEVEL:** 1.0  **APPROVED BY:** K. Patterson
**DATE:** 07DEC99  **CREATED BY:** B. Graham
All conduit knockouts support 3/4 inch (1.9 cm) conduit.
**PRODUCT DESCRIPTION**

The CDR-3 Coder is a microcomputer-based module that provides coded outputs in response to alarm conditions. The CDR-3 is used with systems that require either march time, temporal, or unique coded outputs for separate zones. The CDR-3 decodes alarm codes embedded in printer messages that it receives through its RS-232 input.

**SPECIFICATIONS**

- **Input voltage**: 24 Vdc
- **Standby current**: 60 mA
- **Alarm current**: 100 mA
- **Supervised tone outputs (isolated)**:
  - Output impedance: 1.2 kΩ
  - Output voltage: 3.5 Vrms
  - EOL: 10 kΩ
- **Tone outputs**:
  - Temporal: March time (60 or 90 bpm) @ 1kHz, 10 Vrms
  - Coded: 1 kHz @ 10 Vrms
- **Dry contact (coded output)**:
  - Output rating: 30 Vdc @ 4 A max (Pf .35), 25 Vrms @ 100 W max, 70 Vrms @ 100 W max
  - March-time: 60 or 90 bpm
  - Normal coding range: 4 rounds, 1-4 digits, 0-9 each
  - Extended digit range: 3 rounds, 1-3 digits, 1 digit 0-15, 2 digits 0-9 each
  - PSNI Queue: 50 most recent alarms
- **RS-232 Input baud rates**: 600, 1200, 2400, 4800

**INSTALLATION SHEET**

**INSTALLATION INSTRUCTIONS**

**CAUTION**

- Observe static-sensitive material handling practices.

**WARNING**

- This module will NOT operate without electrical power. As fires frequently cause power interruption, we suggest you discuss further safeguards with your local fire protection specialist.
- Disconnect power before installing or removing the module. Dangerous voltages may be present at terminals even when power is disconnected.

**NOTES**

**Printer connections**

If a printer and a CDR-3 are connected to the system:

- Program both devices as enabled.
- Connect both devices in parallel or to separate ports (if available).
- Program the same baud rate for both devices when they share the same port.

**Wire stripping**

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Exposing more than 1/4 inch of wire may cause a ground fault.
Exposing less than 1/4 inch of wire may result in a faulty connection.

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INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
### DIP Switch Setup

<table>
<thead>
<tr>
<th>Function</th>
<th>DIP Switch Position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Temporal Tone</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1       2   3   4   5   6   7   8</td>
</tr>
<tr>
<td><strong>March Tones</strong></td>
<td>Off     [2] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td>Fast (90 beats per minute)</td>
<td>On      [2] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td>Slow (60 beats per minute)</td>
<td>On      [2] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td><strong>Code Operations</strong></td>
<td>[1] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td>Normal 4-digit code</td>
<td>On Off On Off On Off On Off</td>
</tr>
<tr>
<td>Extended first digit (adds digits 1 and 2)</td>
<td>On Off On Off On Off On Off</td>
</tr>
<tr>
<td>Extended second digit (adds digits 2 and 3)</td>
<td>On Off On Off On Off On Off</td>
</tr>
<tr>
<td>Extended third digit (adds digits 3 and 4)</td>
<td>On Off On Off On Off On Off</td>
</tr>
<tr>
<td><strong>Baud Rates</strong> [3]</td>
<td>[1] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td>600</td>
<td>Off Off On On Off Off On On</td>
</tr>
<tr>
<td>1200</td>
<td>Off Off On On Off Off On On</td>
</tr>
<tr>
<td>2400 (default)</td>
<td>Off Off On On Off Off On On</td>
</tr>
<tr>
<td>4800</td>
<td>Off Off On On Off Off On On</td>
</tr>
<tr>
<td><strong>Systems</strong></td>
<td>[1] [1] [1] [1] [1] [1] [1] [1]</td>
</tr>
<tr>
<td>CCS-1</td>
<td>On Off On Off On Off On Off</td>
</tr>
<tr>
<td>All other systems</td>
<td>On Off On Off On Off On Off</td>
</tr>
</tbody>
</table>

[1] indicates that the DIP switch does not apply to the function.

[2] The On position configures the CDR-3 to generate march tones upon the receipt of an alarm signal. The Off position configures the CDR-3 to generate march tones upon power-up.

[3] Program the CDR-3 and the RS-232 to the same baud rate.

---

### Internal Wiring

<table>
<thead>
<tr>
<th>Connector</th>
<th>Name*</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1 connectors: main board (Figure 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3</td>
<td>DURATION</td>
<td>Duration relay contacts</td>
</tr>
<tr>
<td>4, 5</td>
<td>TEMPORAL</td>
<td>March time code output contacts</td>
</tr>
<tr>
<td>6, 7</td>
<td>BELL CODE</td>
<td>Coded output contacts</td>
</tr>
<tr>
<td>TB1 connectors: daughter board (Figure 1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1, 2</td>
<td>TEMPORAL TONE</td>
<td>March time or temporal tone output signal (10 kΩ EOL required)</td>
</tr>
<tr>
<td>3</td>
<td>EARTH GRND</td>
<td>Earth ground</td>
</tr>
<tr>
<td>4</td>
<td>24V</td>
<td>+ 24 Vdc power input</td>
</tr>
<tr>
<td>5, 6</td>
<td>COMMON</td>
<td>DC Common</td>
</tr>
<tr>
<td>7</td>
<td>RS232 INPUT</td>
<td>RS-232 input</td>
</tr>
<tr>
<td>8</td>
<td>PRINT SUPV</td>
<td>Printer supervision</td>
</tr>
<tr>
<td>9, 10</td>
<td>TRBL OUT</td>
<td>Module trouble relay (contacts close on trouble)</td>
</tr>
<tr>
<td>11, 12</td>
<td>CODED TONE</td>
<td>Coded tone output (10 kΩ EOL required)</td>
</tr>
</tbody>
</table>

*Names are listed here exactly as they appear on the board.

**Terminal wiring types: main board**

**Wiring types: TB1 connectors**

- Power-limited* 1-7

**Terminal wiring types: daughter board**

**Wiring types: TB1 connectors**

- Earth ground 3
- Power-limited* 4, 5, 6, 9, 10
- Supervised, power-limited 1, 2, 7, 8, 11, 12

*Use power-limited wiring if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.

---

### Jumper Setup

The CDR-3 provides two relay jumpers: JP1 and JP2. JP1 sets Bell Code relay contacts to either normally open (NO) or normally closed (NC). JP2 sets the Temporal relay contacts to either NO or NC. See Figure 1 for the locations of JP1 and JP2.

**Figure 1: CDR-3 terminals, LEDs, and dip switches**

**LEDs**

- **D1**: Red - Bell code relay active
- **D2**: Red - Temporal relay active
- **D3**: Red - Duration relay active
- **D4**: Yellow - Module trouble
- **D5**: Green - Power on

---

*P/N: 3100023 REV: 1.0 Page 2 of 2*
Surface mount backbox

Knockout for 0.75 in (1.9 cm) conduit (both sides)

3.75 in (9.5 cm)

7.0 in (17.8 cm)

6.1 in (15.5 cm)

Annunciator faceplate

Knockout for 0.75 in (1.9 cm) conduit (both sides)

3.75 in (9.5 cm)

7.25 in (18.4 cm)

8 in (20.3 cm)

4.625 in (11.7 cm)

2.5 in (6.4 cm)

4.0 in (10.2 cm)

5.0 in (12.7 cm)

2.5 in (6.4 cm)

Four module enclosure

Knockout for 0.75 in (1.9 cm) conduit (both sides)

11.25 in (28.6 cm)

1.4 in (3.6 cm)

16.25 in (41.3 cm)

Front view

Cover

Top view

2.5 in (6.4 cm)

2.5 in (6.4 cm)

Side view

11.5 in (29.2 cm)

9.5 in (24.1 cm)

16.0 in (40.6 cm)

RELATED PARTS

Designator | Description
--- | ---
Surface Mount Backbox | CMDN housing
SAN-4 | Four module enclosure
SAN-8 | Eight module enclosure
RSAN-6 | Six module mounting frame
BP-A | SAN blank panel

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DIMENSIONS

Six module mounting frame

Front view

10.5 in (26.7 cm)

19 in (48.3 cm)

Eight module enclosure

Top view

Knockout for 0.75 in (1.9 cm) conduit (both sides)

Cover

27.41 in (69.6 cm)

1.4 in (3.6 cm)

Front view

22.37 in (56.8 cm)

11.5 in (29.2 cm)

Side view

9.5 in (24.1 cm)

2.5 in (6.4 cm)

27.12 in (68.9 cm)
PRODUCT DESCRIPTION

The DL2 is a dialer module, which contains a Digital Alarm Communicator Transmitter (DACT). The dialer sends alarm, supervisory, and trouble information to a compatible Digital Alarm Communicator Receiver (DACR) through one or two dial-up telephone lines (two per NFPA 72). The dialer supports 20 PPS 4/2 format and Dual Tone Multi-Frequency (DTMF) or Pulse mode dialing. Every 24 hours, the dialer performs an automatic test call to verify communications between the fire alarm panel and the Central Monitoring Station (CMS).

INSTALLATION

Warning!
Disconnect external ac power and battery power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!
Carefully match mounting holes up with spacers to ensure proper connector mating.
Observe static-sensitive material handling practices.

Mounting the DL2
1. Install three metal spacers (P/N 362329) with the screws provided in the three locations indicated below.
2. Mount the DL2 on the three metal spacers.
3. Mate connector P1 on the DL2 with connector JE on the Main Controller Module.
4. Secure the DL2 to the spacers with the screws provided.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Input power</th>
<th>Code</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervisory</td>
<td></td>
<td>10 mA</td>
</tr>
<tr>
<td>Active</td>
<td></td>
<td>20 mA</td>
</tr>
</tbody>
</table>

| Mounting             |      | Mounts on the Main Controller Module |
| Phone line           |      | One/two loop start lines on public switched telephone network, pulse or DTMF dialing. Party, ground start, and PBX start lines are not acceptable. NFPA 72 requires two phone lines. |
| Wall connector       |      | Standard RJ31X or RJ38X phone jack |
| Line supervision     |      | Trouble when line voltage less than 10 V and line current less than 5 mA. |
| Communications protocol |    | SIA pulse format 20 PPS 4/2 double round, 1400 Hz handshake, 1900 Hz carrier |
| CMS telephone numbers|      | Two 24-digit numbers |
| FCC registration number |   | 4Z2USA-22549-AL-E |
| Dialing retries       |      | Five to ten |
| Clock accuracy        |      | Within one hour/year |
| Compliance            |      | Communications Canada, CS-03; FCC/CFR 47 parts 15 and 68; NFPA 72; UL 864; ULC S527-M87 |
| Programming phone     |      | Any tone dial phone with an RJ11 plug |
| Environmental conditions |   | Temperature range 32 to 120 °F (0 to 49 °C) |
|                       |      | Humidity range 0 to 93%, non-condensing |

Dialer codes

<table>
<thead>
<tr>
<th>Event</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire alarm report codes</td>
<td>01-32</td>
</tr>
<tr>
<td>Fire alarm restore codes</td>
<td>41-72</td>
</tr>
<tr>
<td>Normal 24 hr check-in</td>
<td>90</td>
</tr>
<tr>
<td>Abnormal 24 hr check-in</td>
<td>91</td>
</tr>
<tr>
<td>Supervisory alarm</td>
<td>92</td>
</tr>
<tr>
<td>Trouble</td>
<td>93</td>
</tr>
<tr>
<td>Trouble / supervisory restore</td>
<td>94</td>
</tr>
<tr>
<td>AC power fail</td>
<td>96</td>
</tr>
<tr>
<td>Battery trouble</td>
<td>97</td>
</tr>
<tr>
<td>Telephone line trouble</td>
<td>98</td>
</tr>
<tr>
<td>Dialer disabled</td>
<td>99</td>
</tr>
</tbody>
</table>

PRODUCT DIAGRAM

DIAGRAM

INSTALLATION SHEET:

DL2 Dialer Module
Digital Alarm Communicator Transmitter

INSTALLATION SHEET P/N: 387132 FILE NAME: 387132.CDR
REVISION LEVEL: 4.0 APPROVED BY: M. Slack
DATE: 24AUG00 CREATED BY: B. Graham

EDWARDS SYSTEMS TECHNOLOGY, INC.
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INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
Connect J1 and J2 to RJ31X or RJ38X telephone jacks installed by an authorized telephone company representative (CA31A or CA38A in Canada).

Install the RJ31X (RJ38X) jacks within 5 ft (1.5 m) of the control panel and allow two extra feet of cable for a total of 7 ft (2.13 m).

The phone key pad is only for module programming. Rotary dial phones will not work. See dialer programming, on the following pages, for more information.

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Install the RJ31X (RJ38X) jacks within 5 ft (1.5 m) of the control panel and allow two extra feet of cable for a total of 7 ft (2.13 m).

The phone key pad is only for module programming. Rotary dial phones will not work. See dialer programming, on the following pages, for more information.
Entering the programming mode

1. Connect the phone to J3.
2. Take the handset off the hook.
3. The status LED will display two rapid green flashes, and then turn solid green.

Entering the password

1. When the Status LED turns solid green, press 4727 (GSBS) on the telephone keypad.
2. Listen for the confirmation tone to verify that the dialer has accepted the password.
3. Before programming can proceed, the dialer will notify the CMS for any previously entered numbers. The status LED will display a slow green flash during the dialing process.
4. The status LED will display a steady green LED to indicate that the dialer is ready for programming.

Entering the dialer data

Note: Enter the required information for all 8 programming items in sequence.

Programming the primary site ID number (item 01)

1. Press the following telephone keys: *
2. Listen for the confirmation tone to verify that you entered 01.
3. Make sure that the status LED displays a steady green pattern interrupted by amber flashes.
4. Enter the 4-digit ID number on the telephone keypad. Use leading zeroes as required.

Programming the primary CMS number (item 02)

1. Press the following telephone keys: *
2. Listen for the confirmation tone to verify that you entered 02.
3. Make sure that the status LED displays a steady red pattern interrupted by amber flashes.
4. Enter a 7 to 24-digit number on the telephone keypad to specify the primary CMS number.

Programming the secondary site ID number (item 03)

1. Press the following telephone keys: *
2. Listen for the confirmation tone to verify that you entered 03.
3. Make sure that the status LED displays a steady green pattern interrupted by double amber flashes.
4. Enter the 4-digit ID number on the telephone keypad. Use leading zeroes as required.

Programming the secondary CMS number (item 04)

1. Press the following telephone keys: *
2. Listen for the confirmation tone to verify that you entered 04.
3. Make sure that the status LED displays a steady red pattern interrupted by double amber flashes.
4. Enter a 7 to 24-digit number on the telephone keypad to specify the secondary CMS number.

Notes

1. A confirmation tone indicates the correct entry of a program item.
2. Phone lines must be loop start on a public-switched network. PBX, party lines, and ground start lines are not acceptable.
3. The dialer does not place calls, monitor the panel, or monitor the phone lines during the programming process.
4. After initial programming, the dialer notifies the central monitoring station that it is disabled before programming can proceed.
5. Two phone lines are required to comply with NFPA 72.
6. The dialer will automatically switch to pulse dialing after three consecutive failures using tone mode. It will switch back to tone dialing after failing to connect using pulse mode, upon re-programming, or upon enabling disconnect switch.
Programming 1 or 2 line operation (item 05)
1 Press the following telephone keys: 2 Listen for the confirmation tone to verify that you entered 05.
   * 3 Make sure that the status LED displays a steady green pattern interrupted by rapid amber flashes.
   0 4 Enter 01 or 02 on the telephone keypad. The default setting is 2.
   5

Programming the number of CMS retry calls (item 06)
1 Press the following telephone keys: 2 Listen for the confirmation tone to verify that you entered 06.
   * 3 Make sure that the status LED displays rapid green flashes.
   0 4 Enter 05, 06, 07, 08, 09, or 00 on the telephone keypad. The default is 00 (10).
   6

Programming the retry interval (item 07)
1 Press the following telephone keys: 2 Listen for the confirmation tone to verify that you entered 07.
   * 3 Make sure that the status LED displays double green flashes.
   0 4 Enter 0, 30, or 60 on the telephone keypad to specify the number of seconds. The default is 0.
   7

Programming the daily supervision delay (item 08)
1 Press the following telephone keys: 2 Listen for the confirmation tone to verify that you entered 08.
   * 3 Make sure that the status LED displays a slow amber flash.
   0 4 Enter a 2-digit number on the telephone keypad to specify the delay period (in hours). The default is 12.
   8

Exiting the programming mode
1 Disconnect the phone from J3. 2 Put the handset on the hook.

Restoring default values
1 Enter the password according to the preceding instructions on this installation sheet.
2 Press the following telephone keys: 3 Make sure that the status LED displays a steady green pattern.
   * 4 The dialer resets to its default values and returns it to item 01 of the programming mode.
   0

Verifying programmed entries
1 Enter the password according to the preceding instructions on this installation sheet.
2 Press the following telephone keys: 3 Listen for the confirmation tone to verify that it sounds the contents of the selected item through the handset.
   * 4
   0 Programming item number
   #

Testing the dialer
1 Activate and open an SDC and an NAC to verify that the CMS receives the proper signal.
2 Verify that failure of the primary signal path results in the transmission of a trouble signal through the secondary signal path within 4 minutes.
3 Verify that failure of the secondary signal path results in the transmission of a trouble signal through the primary signal path within 4 minutes.

Status LED indications during dialer operations
<table>
<thead>
<tr>
<th>Color</th>
<th>Pattern</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Rapid flash</td>
<td>Waiting for password entry</td>
</tr>
<tr>
<td>Green</td>
<td>Single flashes</td>
<td>Call to CMS in progress</td>
</tr>
<tr>
<td>Amber</td>
<td>Single flashes</td>
<td>Dialer in trouble</td>
</tr>
<tr>
<td>Amber</td>
<td>Double flashes</td>
<td>Dialer disabled</td>
</tr>
</tbody>
</table>

Notes
The primary signal path is along the phone line connected to J1.
The secondary signal path is along the phone line connected to J2.
**INSTALLATION**

1. Mount the LED/switch modules.

   Inner door (side view)

   Plunger Grommet

   **Note:** Do not try to insert the plunger and grommet into the mounting holes at the same time. Insert the grommet first and then the plunger to avoid damaging them.

   LED/switch module (side view)

2. Connect the LED/Switch Module ribbon cables

   1. Connect the ribbon cable from J3 on the 2-LCD to J1 on the first module.
   2. Connect the ribbon cable from J2 on the first module to the J1 on the second module.
   3. Repeat step 2 until you reach the last module.

   **Note:** White indicates the correct dipswitch position.

3. Set the dip switches on the LED/switch modules.

   **Dip switch setting**
   
   **LED addresses**
   
   **Switch addresses**
   
   | 0 | 01-16 | 01-08 |
   | 1 | 17-32 | 09-16 |
   | 2 | 33-48 | 16-24 |
   | 3 | 49-64 | 25-32 |
   | 4 | 65-80 | 33-40 |
   | 5 | 81-96 | 41-48 |

**PRODUCT DESCRIPTION**

The front panel LED/switch modules consist of 16 individual LEDs for point annunciation. The LED/switch modules provide eight groups of two LEDs combined with a switch. See the specifications for available LED color options. The protected slip-in label next to each LED/switch identifies its function. Communication with the Main Controller Module requires no point to point wiring, because it is multiplexed using plug-in ribbon cables. Any combination of three annunciator and switch modules may be mounted on the panel's inner door. Blank Plates (model 2-FBP) fill unused inner door spaces.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>LED/switch options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td></td>
</tr>
<tr>
<td>2-12R4Y</td>
<td>12 red LEDs over 4 yellow LEDs</td>
</tr>
<tr>
<td>2-16G</td>
<td>16 green LEDs</td>
</tr>
<tr>
<td>2-16GBS</td>
<td>16 green LEDs and 8 switches</td>
</tr>
<tr>
<td>2-16R</td>
<td>16 red LEDs</td>
</tr>
<tr>
<td>2-16RBS</td>
<td>16 red LEDs and 8 switches</td>
</tr>
<tr>
<td>2-16Y</td>
<td>16 yellow LEDs</td>
</tr>
<tr>
<td>2-16YBS</td>
<td>16 yellow LEDs and 8 switches</td>
</tr>
<tr>
<td>2-8RY</td>
<td>8 red / 8 yellow alternating LED/switch pairs</td>
</tr>
<tr>
<td>2-8RYS</td>
<td>8 red / 8 yellow alternating LED/switch pairs</td>
</tr>
<tr>
<td>Blank plate option</td>
<td>2-FBP</td>
</tr>
<tr>
<td>Switches</td>
<td>Momentary push button</td>
</tr>
<tr>
<td>Temperature range</td>
<td>32 to 120 °F (0 to 49 °C)</td>
</tr>
<tr>
<td>Humidity range</td>
<td>0 to 93%, non-condensing</td>
</tr>
</tbody>
</table>

**INSTALLATION SHEET:**

Front Panel LED/(Switch) Modules

INSTALLATION SHEET P/N: 270214 FILE NAME: 270214.CDR
REVISION LEVEL: 4.0 APPROVED BY: J. Massing
DATE: 21JUN00 CREATED BY: B. Graham
Related documentation: 2-LCD installation sheet

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
The IOP3A isolator card is designed to electrically isolate a fire alarm control panel's RS-232 ports from peripheral devices. The IOP3A provides two isolated RS232 connections, as well as a DB9 and RJ12 connector for downloading. A select mode allows both a printer and modem to be connected when used on EST2 systems.

The IOP3A should be used in ALL applications which require the connection of external devices (CCA, CGP, VDU, and external modems) to properly isolate the fire alarm control panel from earth ground connections.

**PRODUCT INFORMATION**

**INSTALLATION**

The IOP3A module requires 1/2 standard module footprint.

**FIELD WIRING:**

To Control Module:
TB1-1 (+) 24VDC
TB1-2 (-) 24VDC
TB1-3 Port Selection/Supervision
TB1-4 Common
TB1-5 RXD IN
TB1-6 TXD OUT

To Peripheral Device:
TB2/3-1 Supervision / (+) 12VDC
TB2/3-2 Common
TB2/3-3 TXD OUT
TB2/3-4 RXD IN

**Notes:**
1. When in RDU mode, TB2 must be used for the modem and TB3 must be used for a printer.
2. All RS-232 connections should be within the same room or within 50 feet of the fire panel they are connected to.

**SWITCH SETUP**

SW1 UP Outputs 1 and 2 enabled. RJ12 and DB9 connectors disabled.
    DOWN Download setting. RJ12 and DB9 connectors enabled. Outputs 1 and 2 disabled.

Note diagram below for UP and DOWN switch positions.

**SPECIFICATIONS**

Current Requirement 60mA

**JUMPER SETUP**

<table>
<thead>
<tr>
<th>Switch</th>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>JB1 1-2</td>
<td>Select Mode</td>
<td></td>
</tr>
<tr>
<td>JB1 2-3</td>
<td>Supervision Mode</td>
<td></td>
</tr>
<tr>
<td>JB2</td>
<td>IN</td>
<td>Output #1 supervision disable / (+) 12VDC on TB2-1</td>
</tr>
<tr>
<td></td>
<td>OUT</td>
<td>Output #1 supervision enable (TB2)</td>
</tr>
<tr>
<td>JB3</td>
<td>IN</td>
<td>Output #2 supervision disable / (+) 12VDC on TB3-1</td>
</tr>
<tr>
<td></td>
<td>OUT</td>
<td>Output #2 supervision enable (TB3)</td>
</tr>
<tr>
<td>JB4</td>
<td>IN</td>
<td>Supervision Mode</td>
</tr>
<tr>
<td></td>
<td>OUT</td>
<td>Select Mode</td>
</tr>
</tbody>
</table>

**NOTE:** JB1 and JB4 settings must agree.

**SW1 UP**

IRC-3 Printer Mode:
- JB1 2-3 IN
- JB2 IN
- JB3 IN
- JB4 IN

FireWorks Mode:
- JB1 2-3 IN
- JB2 IN
- JB3 IN
- JB4 IN
- P1 on 2-MCM OUT

RDU Mode:
- JB1 1-2 IN
- JB2 OUT
- JB3 OUT
- JB4 OUT
- P1 on 2-MCM IN

**INSTALLATION SHEET:**

IOP3A Isolator RS-232 Card

INSTALLATION SHEET P/N: 270758  FILE NAME: 270758.CDR

REVISION LEVEL: 1.0  APPROVED BY: D.P.

DATE: 10/04/99  CREATED BY: DRM

GS BUILDING SYSTEMS CORPORATION
6411 Parkland Drive Sarasota, FL 34243 USA
625 6th Street East Owen Sound, Ontario Canada N4K 5P8
**IOP3A to CM motherboard wiring**

**IOP3A to 3-CPU1 wiring**

**IOP3A to 2-MCM(N) wiring**

- **CM Motherboard**
- **3-CPU1 Panel controller**

**NOTE:** The IOP3A must be configured in supervision mode.

**NOTE:** The IOP3A must be configured in supervision mode.

- Switch shown in UP position.
- **Switch shown in UP position.**

**DOWNLOAD CONFIGURATION**
- **DB-9 FEMALE**
- **DB-25 FEMALE**
- **DB-25 MALE**

**Download Configuration**
- **Download Configuration**
- **Download Configuration**
- **Print Configuration**

**2-MCM(N) Panel controller**

- **2-MCM(N) Panel controller**

**NOTE:** The RTS line is connected only when the IOP3A is used in Select Mode.

**P/N: 270758 REV: 1.0 Page 2 of 2**
PRODUCT DESCRIPTION

The ISP96 series multiplexed annunciator/switch panels consist of 48 LED/switch groups and a metal face plate that mounts to a 19-inch rack. Each LED/switch group contains one switch and two LEDs. All LEDs and switches are independently programmed and controlled.

The ISP96-2 LED/switch groups provide a two-position toggle switch for every two LEDs. The up position generates an active (off-normal) condition. The down position is the normal state. Each LED requires one output address. Each switch requires one input address.

The ISP96-3 LED/switch groups provide a three-position toggle switch for every two LEDs. The up and down positions will generate one of two active (off-normal) conditions. The center position is the normal state.

Each ISP96 series panel interfaces with the rest of the system through a dedicated SAN-CPU. It may use RS-485, 20 mA, or Fiber optic communication formats. The ISP96 panels are also fully compatible with regenerative networks that use RS-485 lines.

APPLICATIONS

ISP96 series panels provide a generic LED/switch matrix for operator interface with the system. The panels may be used for life safety functions, which require control and annunciation. Such functions include, but are not limited to:

- HVAC control
- Firefighter telephone circuits
- Audio evacuation and paging systems

In HVAC applications, the switches function as HOA (hand-off automatic) controls that override automatic control of the system. HVAC controls include fans and dampers. The LEDs indicate the status of the fans and dampers, which use monitored limit switches and run/stop contacts.

In firefighter telephone applications, the switches select incoming calls. One LED will light to indicate that a circuit is calling in. The other LED will light to indicate the circuit has been connected to the master handset.

In audio evacuation and paging systems, the switches allow the operator to control paging and silencing circuits. The LEDs indicate the silenced or active status of the speaker circuit.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage</td>
<td>24 Vdc</td>
</tr>
<tr>
<td>Standby current</td>
<td>60 mA</td>
</tr>
<tr>
<td>Current per active LED</td>
<td>6 mA, 268 mA total draw</td>
</tr>
<tr>
<td>Fully loaded current</td>
<td>680 mA</td>
</tr>
<tr>
<td>Temperature range</td>
<td>32 to 120 °F (0 to 49 °C)</td>
</tr>
<tr>
<td>Humidity</td>
<td>85 % non-condensing</td>
</tr>
<tr>
<td>Dimensions:</td>
<td></td>
</tr>
<tr>
<td>Height</td>
<td>5.25 in (13.3 cm)</td>
</tr>
<tr>
<td>Width</td>
<td>19 in (48.3 cm)</td>
</tr>
<tr>
<td>Depth</td>
<td>2 in (5 cm)</td>
</tr>
</tbody>
</table>

PRODUCT DIAGRAM

![PRODUCT DIAGRAM](image)

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

INSTALLATION SHEET

ISP96-2/ISP96-3 Annunciator/Switch Panel

INSTALLATION SHEET P/N: 3100029  FILE NAME: 3100029.CDR
REVISION LEVEL: 1.0  APPROVED BY: K. Johnson
DATE: 22AUG00  CREATED BY: B. Graham

Related documentation: SAN-CPU installation sheet

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
Note: ISP96 series panels require 5.25 inches of vertical height and 2 inches of rear clearance in the enclosure.

ISP-96 (rear view)

JP25 is located on the inside of this board, facing the metal faceplate. Install the jumper.

JP25 is located on the inside of this board, facing the metal faceplate. Remove the jumper.
**FIELD WIRING**

### Table 1: ISP-96 data line wiring (SAN-CPU terminals)

<table>
<thead>
<tr>
<th>Format</th>
<th>Class B (Style 4)</th>
<th>Class A (Style 7)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS-485</td>
<td>TB1-3 + RS-485</td>
<td>TB1-3 + RS-485</td>
<td>Install JP1/JP2 if the SAN-CPU is the last device on the RS-485 data line.</td>
</tr>
<tr>
<td></td>
<td>TB1-4 - RS-485</td>
<td>TB1-4 - RS-485</td>
<td></td>
</tr>
<tr>
<td>20 mA loop</td>
<td>Replace U3 with the header/ribbon cable from the SO-20D, P3.</td>
<td>Replace U3 with the header/ribbon cable from the SO-20D, P3.</td>
<td>Two SO-20s may be used instead of an SO-20D.</td>
</tr>
<tr>
<td>Fiber optic</td>
<td>Replace U3 with the header/ribbon cable from the SO-FIB, P4.</td>
<td>Replace U3 and U4 with the header/ribbon cable from the SO-FIB's, P4.</td>
<td></td>
</tr>
</tbody>
</table>

### Detail A

From power supply

RS-485 from previous panel

RS-485 to next panel

**Note:** All wiring is power-limited.

### Detail B

**SAN-CPU**

**JP1**

Install JP1 when the communications format is Class B (Style 4) or Class A (Style 7) RS-485 and the ISP-96 is the last device on the data line.

**JP2**

Install JP2 when the communications format is Class A (Style 7) RS-485 and the ISP-96 is the last device on the data line.

**LED/switch boards**

**JP25**

Each of the two LED/switch boards includes a continuity jumper, labeled JP25. Locate each jumper on the side of the board that faces the rear side of the metal faceplate. Install the jumper on JP25 of the right LED/switch board (rear view). Remove the jumper from JP25 of the left LED/switch board (rear view).

**Note:** If the jumpers are not properly installed, an xx99 open will appear at the fire alarm control panel. See the illustration of the ISP-96 (rear view) on this installation sheet.
ISP96 ADDRESSING

Notes
All switches and LEDs are independently programmed and controlled. Therefore, the addresses for the upper switch positions and the lower LEDs are different even though they appear to be the same.

Matrix A

<table>
<thead>
<tr>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
<th>LEDs</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX02</td>
<td>XX01</td>
<td>XX10</td>
<td>XX09</td>
<td>XX18</td>
<td>XX17</td>
<td>XX26</td>
<td>XX25</td>
</tr>
<tr>
<td>XX01*</td>
<td>XX02</td>
<td>XX09*</td>
<td>XX10</td>
<td>XX17*</td>
<td>XX18</td>
<td>XX25*</td>
<td>XX26</td>
</tr>
<tr>
<td>XX04</td>
<td>XX03</td>
<td>XX12</td>
<td>XX11</td>
<td>XX20</td>
<td>XX19</td>
<td>XX28</td>
<td>XX27</td>
</tr>
<tr>
<td>XX03*</td>
<td>XX04</td>
<td>XX11*</td>
<td>XX12</td>
<td>XX19*</td>
<td>XX20</td>
<td>XX27*</td>
<td>XX28</td>
</tr>
<tr>
<td>XX06</td>
<td>XX05</td>
<td>XX14</td>
<td>XX13</td>
<td>XX22</td>
<td>XX21</td>
<td>XX30</td>
<td>XX29</td>
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<tr>
<td>XX05*</td>
<td>XX06</td>
<td>XX13*</td>
<td>XX14</td>
<td>XX21*</td>
<td>XX22</td>
<td>XX29*</td>
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<tr>
<td>XX08</td>
<td>XX07</td>
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<td>XX08</td>
<td>XX15*</td>
<td>XX16</td>
<td>XX23*</td>
<td>XX24</td>
<td>XX31*</td>
<td>XX32</td>
</tr>
</tbody>
</table>

*ISP96-3 only

Matrix B

<table>
<thead>
<tr>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
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</thead>
<tbody>
<tr>
<td>XX34</td>
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<td>XX42</td>
<td>XX41</td>
<td>XX50</td>
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<td>XX58</td>
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<td>XX34*</td>
<td>XX33</td>
<td>XX41*</td>
<td>XX42</td>
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<td>XX50</td>
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<td>XX40</td>
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<td>XX55*</td>
<td>XX56</td>
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<td>XX64</td>
</tr>
</tbody>
</table>

*ISP96-3 only

Matrix C

<table>
<thead>
<tr>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
<th>LEDs</th>
<th>Switches</th>
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<td>XX73*</td>
<td>XX74</td>
<td>XX81*</td>
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<td>XX72</td>
<td>XX79*</td>
<td>XX80</td>
<td>XX87*</td>
<td>XX88</td>
<td>XX95*</td>
<td>XX96</td>
</tr>
</tbody>
</table>

*ISP96-3 only

ISP96-2 switch position addresses
- No address: Down
- XX02: Up

ISP96-3 switch position addresses
- XX02: Down
- No address: Center
- XX01: Up
**PRODUCT INFORMATION**

The LSRA-232 is an optional printer/programming port board for LSRA annunciators, providing a connection to the host system or a local printer, and for downloading data into the annunciator.

The LSRA-PROG Programming Port is a tool used for downloading data from a PC, and is removed once the annunciator is configured.

**PROGRAMMING & INSTALLATION NOTE**

1. PC Connection to the LSRA-232 or LSRA-PROG Port requires Modular Cable P/N 360163 and Adaptor P/N 240506 or P/N 240507. (Each ordered separately.)

2. When installing annunciator, leave enough wire to permit lowering the annunciator to facilitate programming.

**SPECIFICATIONS**

- **Port Format**: RS-232
- **Baud Rate**: 2400, 4800, 9600
- **Maximum Wire Length**: 50 ft (15 M)
- **Connector**: RJ12

**INSTALLATION SHEET:**

- **LSRA-232 Printer/Programming Port**
- **LSRA-PROG Programming Port**

**DOWNLOAD & LOCAL PRINTER**

- **RJ12 on LSRA-232 Option Board for printer & download**
- **RJ12 on LSRA-PROG Programming Port for download only**

**WIRING**

- **RS-232 RJ12 Jack**
- **LSRA-PROG Programming Port**
- **Annunciator**
- **Access Door**
- **LSRA-232 Programming/Printer Port**
- **Stand-Off**

**PROGRAMMING & INSTALLATION NOTE**

1. Remove the access door on the rear of the annunciator.
2. Firmly mate the LSRA-PROG’s connector with the connector on the annunciator circuit board.
3. Connect modular cable from RJ12 jack on the LSRA-PROG to the PC adapter.
4. Connect the adapter to the PC setting the number 4 dip switch to ON and then back to OFF. Download information using the data entry program.
5. Remove the LSRA-PROG from the annunciator and re-install the access door.

**LSRA-232 Printer/Programming Port**

1. Remove the access door on the rear of the annunciator.
2. Insert two nylon spacers in the holes in the annunciator circuit board located above and to the left of the DIP switch.
3. Firmly mate the LSRA-232 board connector with the connector on the annunciator circuit board, and secure the option board to the two nylon standoffs.
4. Remove the knockout on the access door, then re-install the door on the annunciator so the RJ12 jack is visible through the knockout.
5. Connect the modular cable from the RJ12 jack to the printer or download adapter.
The RACCDR is a red, dead front outer door that mounts on the RACCR wallbox. The RACCDR does not include an inner door.
**PRODUCT DESCRIPTION**

The RACCR is a red, surface mount wallbox that houses an auxiliary power supply, up to two audio amplifiers, and up to two 10 Ah batteries.

**WIRE ROUTING**

1. Auxiliary Power Supply
2. Audio Amplifier
3. Battery space

Shading represents areas that permit nonpower-limited wiring.

**Notes**

- Run the AC power only through the top left knockouts.
- Route battery wiring to the power supply through a protective channel. Wiring must stay within this area, and must remain 1/4 inch (6.4 mm) from power-limited wiring.
- See the appropriate module installation sheets for detailed mounting and wiring instructions.
- All conduit knockouts support 1/2 or 3/4 inch (1.3 or 1.9 cm) conduit.

**INSTALLATION**

Mount the wallbox

**DIMENSIONS**

**PRODUCT DIAGRAM**

Run the AC power through the top left knockouts.

Shading represents areas that permit nonpower-limited wiring.

Route battery wiring to the power supply through a protective channel. Wiring must stay within this area, and must remain 1/4 inch (6.4 mm) from power-limited wiring.

See the appropriate module installation sheets for detailed mounting and wiring instructions.

All conduit knockouts support 1/2 or 3/4 inch (1.3 or 1.9 cm) conduit.
PRODUCT DESCRIPTION

The Rack Mounted Strip Printer is a supervised, two-color, 40-column impact printer that mounts to the RSAN-6 mounting rack.

**Note:** The Rack Mounted Strip Printer is referred to as the Printer from here forward.

APPLICATIONS

The Printer is designed for applications which require a hard copy of activity from a compact printer. Printer communication circuit distance and wiring are subject to the limitations of the port connection on the fire alarm control panel.

**Note:** See the Application Flowchart to determine FCOM card placement and jumper settings for the printer.

INSTALLATION INSTRUCTIONS

Mounting the printer

**To mount the printer:**

1. Align the mounting holes of the printer to the pem studs on the rear side of the mounting rack (Figure 1).
2. Thread and tighten the locknuts provided with the printer to the pem studs on the mounting rack.

Figure 1: Mounting the printer

<table>
<thead>
<tr>
<th>Voltage</th>
<th>24 Vdc</th>
</tr>
</thead>
</table>
| Current | Standby: 0.057 A  
Printing: 1.5 A |
| Baud rate | 1200, 2400, 4800, 9600 |
| Print speed | 2 lines per second |
| Print colors | Red (alarm) and black |
| Print format | 40 column |
| Message buffer | 32 Kbytes (200 messages) |
| Dimensions | Height: 10.375 in (26.4 cm)  
Width: 8.3125 in (21.1 cm)  
Depth: 5.25 in (13.3 cm) |
| Communications format | Card: FCOM-232, 2-CPU, MCM(N) series  
RS-232  
RS-485  
Fiber optic: FCOM-FIB  
20 mA Loop: FCOM-20 |

PRODUCT DIAGRAM

![Product Diagram](image-url)
Replacing paper

Note: Do not remove power from the printer to replace paper.

To replace the paper:
1. Remove the printed paper from the take-up reel (Figure 2).
2. Remove the empty paper roll and spindle from the printer cradle.
3. Install the spindle in the new paper roll.
4. Pull out enough paper to avoid activating the Paper Out sensor until the paper is in the print head.
5. Cut or fold the end of the paper into a clean edge.
6. Set the paper roll and spindle in the printer cradle with the paper feeding from the lower front edge of the roll.
7. Insert the end of the paper into the print head (Figure 3).
8. Turn the manual paper feed to advance the paper through the print head and out the lower paper slot.
9. Press the paper advance switch to route the paper from the lower slot to the upper paper slot.
10. Insert the end of the paper into the edge of the take-up reel.
11. Press the paper take-up switch to remove any slack in the paper.

Replacing ribbon cartridges

Warning: Remove power from the printer before replacing the ribbon cartridge. Failure to do so may result in serious injury or loss of life.

To replace the ribbon cartridge:
1. Remove the paper from the take-up reel.
2. Remove the ribbon cable from the retaining clip on the back of the printer cradle (Figure 4).
3. Pivot the printer cradle around the two silver locking pins so that the ribbon cartridge is up.
4. Lift the right edge of the ribbon cartridge to remove it from the printer mechanism (Figure 5).
5. Place the left edge of the new ribbon cartridge over the ribbon advance spindle.
6. Make sure the new ribbon enters the slot directly in front of the paper.
7. Press the right side of the ribbon cartridge down until it locks.
8. Turn the ribbon advance knob on the left side of the ribbon cartridge until the ribbon moves freely in the printer mechanism.
9. Pivot the printer mechanism around the two silver locking pins back into its normal position.
10. Insert the ribbon cable under the retaining clip on the back of the printer mechanism.
11. Re-install the paper take-up reel.
Table 1: FCOM card requirements and jumper settings

<table>
<thead>
<tr>
<th>Outgoing format</th>
<th>Incoming format</th>
<th>RS-232</th>
<th>RS-485</th>
<th>20 mA loop</th>
<th>Fiber optic</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P2: None</td>
<td>P2: FCOM-485</td>
<td>Code: 111010</td>
<td>P2: FCOM-20</td>
<td>Code: 110001</td>
</tr>
</tbody>
</table>

Notes
1. Install JP1 and JP2 on FCOM-485 cards.

The example above shows the configuration of a printer that receives an RS-232 format signal and re-transmits an RS-485 formatted signal (address 110101). For more information on choosing FCOM card placement and jumper settings, see the Application Flowchart.

Table 2: Printer function selection switches

<table>
<thead>
<tr>
<th>Switch</th>
<th>Position</th>
<th>Function</th>
<th>Table 3: Baud rate selection switches</th>
</tr>
</thead>
<tbody>
<tr>
<td>U10-1</td>
<td>Off*</td>
<td>3.1 mm character height</td>
<td>Switch 1200 2400 4800 9600</td>
</tr>
<tr>
<td></td>
<td>On</td>
<td>2.2 mm character height</td>
<td>U10-3 Off Off* On On</td>
</tr>
<tr>
<td>U10-2</td>
<td>Off*</td>
<td>Handstand characters</td>
<td>U10-4 Off On* Off On</td>
</tr>
<tr>
<td></td>
<td>On</td>
<td>Normal character print</td>
<td>*Factory default</td>
</tr>
<tr>
<td>U10-3</td>
<td>See Table 2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U10-4</td>
<td>See Table 2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U10-5</td>
<td>Off*</td>
<td>Normal pulse width adjust on (factory use)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On</td>
<td></td>
<td></td>
</tr>
<tr>
<td>U10-6</td>
<td>Off*</td>
<td>Even parity (future use)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On</td>
<td>Odd parity (future use)</td>
<td></td>
</tr>
<tr>
<td>U10-7</td>
<td>Off*</td>
<td>1 stop bits (future use)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>On</td>
<td>2 stop bits (future use)</td>
<td></td>
</tr>
</tbody>
</table>

*Factory default

Table 3: Baud rate selection switches

<table>
<thead>
<tr>
<th>Switch</th>
<th>1200</th>
<th>2400</th>
<th>4800</th>
<th>9600</th>
</tr>
</thead>
<tbody>
<tr>
<td>U10-3</td>
<td>Off</td>
<td>Off</td>
<td>On</td>
<td>On</td>
</tr>
<tr>
<td>U10-4</td>
<td>Off</td>
<td>On*</td>
<td>Off</td>
<td>Off</td>
</tr>
</tbody>
</table>

*Factory default

INTERNAL WIRING

Warning!
Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!
Observe static-sensitive material handling practices.

Notes
See Jumper settings in Table 1.
See Switch setup in Tables 2 and 3.
APPLICATION FLOWCHART

Use this flowchart to determine the FCOM card placement and the jumper settings on the printer. See the Jumper Settings in Table 3.

Start

Is incoming signal format RS-232?
Yes → Install FCOM-232 in P1.
No → Is incoming signal format RS-485?
Yes → Install FCOM-485 in P1.
No → Is incoming signal format fiber optic?
Yes → Install FCOM-FIB in P1.
No → Install FCOM-20 in P1.

Is the signal sent to another printer?
Yes → Set jumpers at 000011.
No → Is outgoing signal format RS-232?
Yes → Install FCOM-232 in P2. Set jumpers at 110010.
No → Is outgoing signal format RS-485?
Yes → Install FCOM-485 in P2. Set jumpers at 110111.
No → Is outgoing signal format fiber optic?
Yes → Install FCOM-FIB in P2. Set jumpers at 110011.
No → Set jumpers at 000011.

Is outgoing signal format RS-232?
Yes → Install FCOM-232 in P2. Set jumpers at 110010.
No → Is outgoing signal format RS-485?
Yes → Install FCOM-485 in P2. Set jumpers at 110111.
No → Install FCOM-FIB in P2. Set jumpers at 111011.

Is outgoing signal format fiber optic?
Yes → Install FCOM-FIB in P2. Set jumpers at 111011.
No → Install FCOM-20 in P2. Set jumpers at 111011.

Is outgoing signal format fiber optic?
Yes → Install FCOM-FIB in P2. Set jumpers at 111011.
No → Install FCOM-20 in P2. Set jumpers at 111011.

Set jumpers at 000011.
**FIELD WIRING**

### Printer-to-printer connection

*Control modules include network controllers (CM1[N]/CM2[N]/[N]), 2-CPU modules, and main controller modules (MCM[N] series). Control modules provide only RS-232 format.

The first printer connected to a control module must have an FCOM card installed in connector P1.

### Network controller connection

Network controller connection

### 2-CPU connection

Printer connector P1

### Main Controller Module connection

Printer connector P1

### DCPU to printer notes

- **Channel A or B may be used for DCPU connections.**
- **Install JP1 and JP2 in position 2/3 on both cards.**
- **Install JP1 and JP2 on both cards.**
- **Wiring is supervised and power-limited.**
- **The wiring diagrams do not reflect the physical placement of the FCOM cards. See Internal Wiring for the physical placement of the cards.**
Printer to printer (no format change) notes

- Control module only. Control modules include network controllers, 2-CPU, and main controller modules.
- Control module or FCOM-232
- FCOM-FIB
- FCOM-20
- For supervision of IRC-3 devices only

1. Wiring is supervised and power-limited.
2. The wiring diagrams do not reflect the physical placement of the FCOM cards. See Internal Wiring for the physical placement of the cards.

Printer to printer (format change) notes

- Use only Channel A for printer-to-printer connections.
- Install JP1 and JP2 in position 2/3 on both cards.
- Wiring is supervised and power-limited.

4. Wiring is supervised and power-limited.
5. The wiring diagrams do not reflect the physical placement of the FCOM cards. See Internal Wiring for the physical placement of the cards.

50 ft max. #22 AWG
62.5/125 Fiber optic cable
10 dB max. loss
62.5/125 Fiber optic cable
7.500 ft max.
#18 AWG twisted pair
9,600 ft max. #22 AWG twisted pair
9,600 ft max. #22 AWG twisted pair
10 dB max. loss
62.5/125 Fiber optic cable
10 dB max. loss
62.5/125 Fiber optic cable
7.500 ft max.
#18 AWG twisted pair
9,600 ft max. #22 AWG twisted pair
9,600 ft max. #22 AWG twisted pair
**PRODUCT DESCRIPTION**

The semi-flush enclosures are assemblies that consist of a wallbox and a front door. The 4 module enclosure supports four SAN series modules and a SAN-CPU. The 8 module enclosure supports eight SAN series modules and a SAN-CPU. Both wallboxes are constructed of 16 gauge steel and feature doors with key locks and Lexan™ viewing windows.

The 6 module mounting frame mounts to a 19-inch rack and is constructed of 0.125 inch aluminum. The mounting frame supports six SAN series modules and a SAN-CPU.

A special L-bracket is mounts the SAN-CPU to the 6 module mounting frame. See the SAN-CPU(F) installation sheet for more information.

Note: All wiring shall be power-limited.

**INSTALLATION**

### Semi-flush enclosures

**To mount a semi-flush enclosure:**

1. Drive nails or screws through the designated mounts to secure the wallbox to the wall.
2. Secure the door to the wallbox with the hardware provided.

Note: See the reverse side of this installation sheet for the location of the wallbox mounts.

<table>
<thead>
<tr>
<th>Wallbox mounts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key hole mount</td>
</tr>
<tr>
<td>Nail knockout</td>
</tr>
</tbody>
</table>

**6 module mounting frame**

**To mount the 6 module mounting frame:**

1. Align the mounting frame to the mounting holes on the 19-inch rack.
2. Secure the frame to the 19-inch rack with the hardware provided.

**RSAN-6**

6 module mounting frame

**SAN-4**

4 module enclosure

**SAN-8**

8 module enclosure

**SAN Series Remote Annunciator Enclosures**
DIMENSIONS

Six module mounting frame

Front view

10.5 in (26.7 cm) 19 in (48.3 cm)

Four module enclosure

Knockout for 0.75 in (1.9 cm) conduit (both sides)

Top view

2.5 in (6.4 cm) 11.25 in (28.6 cm) 2.5 in (6.4 cm)

Front door

1.4 in (3.6 cm) 16.25 in (41.3 cm) 11.5 in (29.2 cm)

Side view

1.4 in (3.6 cm) 16.0 in (40.6 cm) 2.5 in (6.4 cm)

Eight module enclosure

Knockout for 0.75 in (1.9 cm) conduit (both sides)

Top view

22.37 in (56.8 cm)

Front door

27.41 in (69.6 cm)

Side view

11.5 in (29.2 cm) 9.5 in (24.1 cm) 2.5 (6.4 cm)

Front view

SAN-CPU goes here.

Key hole mounts

Nail knockouts

SAN-CPU goes here.

Front view

Nail knockouts

Key hole mounts
The SAN-CPU(F) is an Annunciator Controller. All SAN series annunciator modules require the SAN-CPU to provide an interface to the network data lines. The SAN-CPU features Class A (Style 7) and Class B (Style 4) communication circuits. Communications formats for RS-485, fiber optic, and 20 mA Loop are also available with the SAN-CPU. The SAN-CPUF comes with a blank face plate and a blank filler plate for jobs with limited mounting depth.

**Power requirements**
24 Vdc @ 54 mA

**Communications formats**
RS-485, Fiber optics, 20 mA current loop

**Data line wiring**
Class A (Style 7) or Class B (Style 4)

**Network capacity**
96 inputs or outputs

**Network requirement**
1 panel address

**Mounting**
See the related documentation listed in the title block for the approved enclosures.

### INSTALLATION

**Mounting the SAN-CPU**

Note: See the related documentation listed in the title block for more information about specific mounting units.

6-unit, 19-inch rack mount (rear view)

---

**PRODUCT DIAGRAM**

Note: The SAN-CPU footprint in the 8-unit enclosure is identical to the 4-unit enclosure.

---

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INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
WIRING

24 Vdc from the primary power supply or power riser

RS-485 data line from the previous panel

Required for Class B (Style 4) and Class A (Style 7)

RS-485 data line from the previous panel

RS-485 data line to the next panel

Required only for Class A (Style 7)

24 Vdc to the next SAN annunciator or auxiliary module power

RS-485 data line to the next panel

Replace U3 with the header/ribbon cable from the SO-20 (P3) for Class B (Style 4) communications.

Replace U3 with the header/ribbon cable from the SO-FIB (P4) for Class B (Style 4) communications.

Replace U3 and U4 with the header/ribbon cables from the SO-20 (P2) for Class A (Style 7) communications.

Replace U3 and U4 with the header/ribbon cables from two SO-FIBs (P3) for Class A (Style 7) communications.

20 mA current loop

Replace U3 with the header/ribbon cable from the SO-20 (P3) for Class B (Style 4) communications.

Fiber Optic

Replace U3 with the header/ribbon cable from the SO-FIB (P4) for Class B (Style 4) communications.

Replace U3 and U4 with the header/ribbon cables from the SO-20 (P2) for Class A (Style 7) communications.

The dip switch appears upside down in this view of the SAN-CPU.

SAN-CPU Addressing

Switch | Address weight
--- | ---
SW1 | 01
SW2 | 02
SW3 | 04
SW4 | 08
SW5 | 16
SW6 | 32

Baud rate selection

<table>
<thead>
<tr>
<th>SW7</th>
<th>SW8</th>
<th>Baud rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off</td>
<td>Off</td>
<td>9600</td>
</tr>
<tr>
<td>On</td>
<td>Off</td>
<td>4800</td>
</tr>
<tr>
<td>Off</td>
<td>On</td>
<td>2400</td>
</tr>
<tr>
<td>On</td>
<td>ON</td>
<td>19200</td>
</tr>
</tbody>
</table>

Notes

1. Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring or use FPL, FPLP, FPLR, or equivalent in accordance with the National Electric Code.

2. Use twisted pair wires.

3. 20 mA current loop and fiber optics do not require TB1-3 through TB1-6.

4. Supervised and power-limited

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

Jumper Settings

Jumper | Use
--- | ---
JP1 | For Class B (Style 4) when the SAN-CPU is the last device on the data line.
JP2 | For Class A (Style 7) when the SAN-CPU is the last device on the data line.

LEDs

LED | Color | Indication
--- | --- | ---
LD1 | Red | On indicates activity on Channel 1. Off indicates activity on Channel 2.
LD2 | Red | On indicates that the SAN-CPU is transmitting data on either channel 1 or channel 2.
The SAN-MICII module is a supervised microphone and tone generator capable of operating remotely from the audio power amplifier. The SAN-MICII provides a pre-amp level signal, which may be transmitted over 2,000 feet of shielded cable. In addition, the SAN-MICII provides a PTT (Push-to-talk) dynamic microphone, three tone generators, an auxiliary audio input, a solid state VU meter, and a supervisory pulse generator.

Installation

Note: See the related documentation listed in the title block for more information about specific mounting units.

Installation in a 4-unit or 8-unit enclosure

Installation in a 6-unit, 19-inch rack mount

Specifications

Voltage 24 Vdc
Current
  Standby 0.0 mA
  Active 90 mA
Audio input
  0.25 Vrms or 2.0 Vrms into 600 Ω
Audio output
  0.25 Vrms or 2.0 Vrms into 600 Ω
EOL resistors 1.8 kΩ, 1/2 W
Wiring
  2000 ft of 18 AWG twisted pair, shielded max.
Relay contacts
  120 Vac @0.5 A, resistive
Dimensions
  Height 8.875 in (22.5 cm)
  Width 2.75 in (7.0 cm)
  Depth 2.75 in (7.0 cm)

Jumper Settings

Switch activation  Supervisory tone  Slow whoop  Steady 1 kHz
Alarm/Activate
  switch tone J5 out  J5 in  J5 out
Emergency tone 1
  J7 out  J7 in  J7 out
Emergency tone 2
  J3 out  J3 in  J3 out

Switch activation  90 bpm for 1 kHz  120 bpm for 1 kHz
Alarm/Activate
  switch tone J5 in  J5 in
Emergency tone 1
  J7 in  J7 in
Emergency tone 2
  J3 in  J3 in

J1: Install for 0.25 Vrms level pre-amp audio output on TB1-14 and TB1-15. Remove 2.0 Vrms level.
J2: Install for 0.25 Vrms level pre-amp audio output on TB1-16 and TB1-17. Remove 2.0 Vrms level.
J9 is located on the small, forward PC board assembly. Remove power from the microphone and use a pair of needle nose pliers to remove or replace the jumper. Observe static-sensitive material handling practices.

Product Diagram

SAN-MICII
Remote Microphone

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INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553

Related documentation: SAN-CPU installation sheet

San-MICII Enclosure

INSTALLATION SHEET

SAN-MICII
Remote Microphone

INSTALLATION SHEET P/N: 3100028  FILE NAME: 3100028.CDR
REVISION LEVEL: 1.0  APPROVED BY: K. Johnson
DATE: 30MAR00  CREATED BY: B. Graham

Related documentation: SAN-CPU installation sheet
**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

**Caution!**

Observe static-sensitive material handling practices.

**Notes**

1. All circuits are supervised and power-limited unless otherwise noted.
2. 1.8 kΩ EOL P/N 260044
3. Tone select must be connected to dc common during external alarm activation

**FIELD WIRING**

Note: The CC1 must be in the same enclosure or within 3 feet of the SAN-MIC II and its wiring must be in conduit.
PRODUCT DESCRIPTION

The SDR-32 is a remote annunciator lamp driver module, which comes in four models and consists of 32 open collector driver circuits. The SDR-32, the SDR-32K, the SDR-32C, and the SDR-32KC are designed for remote annunciator applications with the SAN-CPU or RSA4-CPU. All SDR-32 models provide lamp drivers for LED or incandescent lamp annunciators. The high circuit density makes the SDR-32 modules ideal for driving graphic annunciators.

The SDR-32 features current-limited outputs with LEDs. The SDR-32K provides no current limiting for use as an external relay driver. The SDR-32C and the SDR-32KC consist of the circuit card only with the option of mounting in graphic annunciators.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>From SAN-CPU</td>
</tr>
<tr>
<td>Standby current</td>
<td>1 mA</td>
</tr>
<tr>
<td>Current sink</td>
<td>SDR-32 16 mA maximum</td>
</tr>
<tr>
<td></td>
<td>SDR-32K 100 mA maximum</td>
</tr>
<tr>
<td>Lamp supply</td>
<td>24 Vdc, maximum</td>
</tr>
<tr>
<td>Address requirements</td>
<td>None</td>
</tr>
<tr>
<td>Inputs</td>
<td>None</td>
</tr>
<tr>
<td>Outputs</td>
<td>32 (4 groups of eight)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz (93.5 g)</td>
</tr>
<tr>
<td>Mounting</td>
<td>See Related documentation.</td>
</tr>
</tbody>
</table>

INSTALLATION

1. Mount the SDR-32(K).

**Note:** See the related documentation listed in the title block for more information about specific mounting units.

On a 6-unit, 19-inch rack mount

**Warning!**

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

PRODUCT DIAGRAM

In a 4-unit or 8-unit enclosure

**Note:** See the related documentation listed in the title block for more information about specific mounting units.

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2 Make the ribbon cable connections.
   A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
   B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
   C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
   D. Install the continuity jumper on the last SAN module.

   Note: If the SDR-32(K) is the last module, install the continuity jumper on JP1.

3 Set the SDR-32(K) dip switches.

   Remember that the SDR-32(K):
   - Cannot occupy the 2-SANCOM addresses (01 through 09).
   - Requires four output address groups, which consist of eight addresses each.

   To set the SDR-32(K) dip switches:
   A. Configure the SAN-CPU in the system programming utility.
   B. Note the start output address of the SDR-32(K) in the programming utility (09 to 65).
   C. Set the dip switches on S1 to the group number of the SDR-32(K)’s start output address.

<table>
<thead>
<tr>
<th>Group number</th>
<th>Output addresses</th>
<th>S1 dip switch settings</th>
<th>Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01-08</td>
<td>on off off off</td>
<td>2-SANCOM</td>
</tr>
<tr>
<td>2</td>
<td>09-16</td>
<td>off on off off</td>
<td>SHO-4</td>
</tr>
<tr>
<td>3</td>
<td>17-24</td>
<td>on off off on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>4</td>
<td>25-32</td>
<td>off off on on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>5</td>
<td>33-40</td>
<td>on off on on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>6</td>
<td>41-48</td>
<td>off on on on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>7</td>
<td>49-56</td>
<td>on on on off</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>8</td>
<td>57-64</td>
<td>off off on on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>9</td>
<td>65-72</td>
<td>on off off on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>10</td>
<td>73-80</td>
<td>off on off on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>11</td>
<td>81-88</td>
<td>on on off on</td>
<td>SDR-32(K)</td>
</tr>
<tr>
<td>12</td>
<td>89-96</td>
<td>off off on on</td>
<td>SDR-32(K)</td>
</tr>
</tbody>
</table>

FIELD WIRING

- External device power supply
- External device power supply
- 24 Vdc power in (-) terminal

Cautions

Observe static-sensitive material handling practices.

Use some current limiting for the incandescent lamps. Momentary current surges can exceed the 100 mA rating on the switching transistor and cause permanent damage.

Notes

1. All wiring is power-limited.
   - Nonsupervised connection
   - Connect the (-) terminal of the external device power supply to the SAN-CPU (-) power input terminal.
PRODUCT DESCRIPTION

The SHO-4 is a remote annunciator LED/Switch module, which consists of four rotary switches and twelve LEDs. The SHO-4 is designed for remote switching and annunciator applications with the SAN-CPU or RSA4-CPU.

Each rotary switch has three positions and sits next to three LEDs to form a functional group. The center LED is green; the upper and lower LEDs are yellow. The front panel protects a slip-in legend sheet, which identifies individual switch and LED functions.

The SHO-4 provides point status indication and switching functions at a location remote from the main control panel. Typical applications include "hands-off-automatic" control/override of automatic systems.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>From SAN-CPU</td>
</tr>
<tr>
<td>Standby current</td>
<td>25 mA</td>
</tr>
<tr>
<td>Active LED current</td>
<td></td>
</tr>
<tr>
<td>Per LED</td>
<td>6 mA</td>
</tr>
<tr>
<td>Full load</td>
<td>96 mA</td>
</tr>
<tr>
<td>Address requirements</td>
<td></td>
</tr>
<tr>
<td>Inputs</td>
<td>8 (1 group of eight)</td>
</tr>
<tr>
<td>Outputs</td>
<td>8 (1 group of eight)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz (93.5 g)</td>
</tr>
<tr>
<td>Mounting</td>
<td>See Related documentation.</td>
</tr>
</tbody>
</table>

INSTALLATION

1. Mount the SHO-4

   Note: See the related documentation listed in the title block for more information about specific mounting units.

On a 6-unit, 19-inch rack mount

The SHO-4 is a remote annunciator LED/Switch module, which consists of four rotary switches and twelve LEDs. The SHO-4 is designed for remote switching and annunciator applications with the SAN-CPU or RSA4-CPU.

Each rotary switch has three positions and sits next to three LEDs to form a functional group. The center LED is green; the upper and lower LEDs are yellow. The front panel protects a slip-in legend sheet, which identifies individual switch and LED functions.

The SHO-4 provides point status indication and switching functions at a location remote from the main control panel. Typical applications include "hands-off-automatic" control/override of automatic systems.

LEDs

The LEDs indicate programmed points and functions. Operation of the switches is independent of the LEDs, both being under control of the system program.

PRODUCT DIAGRAM

In a 4-unit or 8-unit enclosure
2 **Make the ribbon cable connections.**

A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.

B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.

C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.

D. Install the continuity jumper on the last SAN module.

**Note:** If the SHO-4 is the last module, install the continuity jumper on JB1.

3 **Set the SHO-4 dip switches**

Remember that the SHO-4:

- Cannot occupy addresses 01 through 09 because they belong to the 2-SANCOM.
- Requires one input address group and one output address group, which consist of eight addresses each.

**To set the dip switches:**

A. Configure the SAN-CPU in the system programming utility.

B. Note the start input and output addresses of the SHO-4 in the programming utility (09 to 81).

C. Set the dip switches on S5 and S6 to match the group numbers of the SHO-4’s start input and start output addresses.

4 **Label the SHO-4 switches and LEDs**

To label the SHO-4:

A. Identify each LED/switch group on the SHO-4 according to its programmed function.

B. Write the functions on the slip-in legend sheet next to the appropriate LED/switch group.

C. Insert the label under the SHO-4 face plate.
PRODUCT DESCRIPTION

The SIGA-AAXX is a high-efficiency, dual-input, switch-mode audio amplifier. The amplifier comes in two versions: 30 watt (SIGA-AA30) and 50 watt (SIGA-AA50), and has both 1 V and 25 V input levels. The output is supervised, power-limited, and user-selectable for 25 Vrms or 70 Vrms output voltage.

An integral Signature module under software control selects the amplifier input channel. The amplifier reports its status to the Main Controller Module to reduce the need for additional field wiring. The amplifier also features a backup amplifier connection, which supports one-to-one or banked backup amplifiers.

INSTALLATION

1. Mount the amplifier with the screws and washers provided.

![Diagram of amplifier installation](image)

Note: See the installation sheets listed in the title box for other places to mount the Audio Amplifier.

2. Configure the amplifier
   a. Set JP2 (output voltage) to 25 Vrms or 70 Vrms as required.
   b. Set JP3 on the back of the daughter board for the backup mode.

Jumper Settings

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Setting</th>
</tr>
</thead>
</table>
| JP2    | Pins 1 and 2: 70 Vrms  
|        | Pins 2 and 3: 25 Vrms |
| JP3    | In: TB5 signal before 1 kHz backup tone  
|        | Out: 1 kHz backup tone before TB5 signal |

SPECIFICATIONS

- **Power requirements**
  - Standby: 1 mA @ 24 Vdc
  - Active SIGA-AA30: 1.7 A @ 24 Vdc
  - Active SIGA-AA50: 3.2 A @ 24 Vdc
- **Frequency response**
  - 400 Hz to 4 kHz at -3 dB (ULC)
  - 800 Hz to 2.8 kHz (ULI)
- **Harmonic distortion**: < 5%
- **Input**
  - Channel 1 dual input: 1 Vrms or 25 Vrms maximum
  - Channel 2 dual input: 1 Vrms or 25 Vrms maximum
- **Output**
  - SIGA-AA30: 30 watts @ 25 Vrms or 70 Vrms
  - SIGA-AA50: 50 watts @ 25 Vrms or 70 Vrms
  - Configuration: Class B (Style Y) or Class A (Style Z)
  - EOL resistor: 47 kΩ
- **Signature Data Circuit**
  - Addresses: 2 module addresses
  - Emulation: Signature series CC2 module
- **Maximum wire size**: 12 AWG (2.5 mm²)
- **Backup tone**: 1 kHz
- **Operating temperature**: 32 to 120 °F (0 to 49 °C)
- **Humidity**: 0 to 93%, noncondensing

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

LED indicators

<table>
<thead>
<tr>
<th>LED</th>
<th>Color</th>
<th>Pattern</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS1</td>
<td>Green</td>
<td>Steady</td>
<td>Power amp disabled</td>
</tr>
<tr>
<td>DS2</td>
<td>Yellow</td>
<td>Steady</td>
<td>Backup mode</td>
</tr>
<tr>
<td>DS3</td>
<td>Green</td>
<td>Steady</td>
<td>Amplifier active</td>
</tr>
<tr>
<td>DS4</td>
<td>Green</td>
<td>Flashing</td>
<td>Normal communications (daughterboard)</td>
</tr>
<tr>
<td>DS5</td>
<td>Red</td>
<td>Flashing</td>
<td>Active condition (daughterboard)</td>
</tr>
</tbody>
</table>

INSTALLATION SHEET:

SIGA-AA30/SIGA-AA50 Audio Amplifiers

INSTALLATION SHEET P/N: 387343  FILE NAME: 387343.CDR
REVISION LEVEL: 2.0  APPROVED BY: J. Massing
DATE: 30MAR00  CREATED BY: B. Graham

Related documentation: WB3(R) Wallbox installation sheet, WB7(R) Wallbox installation sheet, RACCR Remote Audio Closet Cabinet installation sheet

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
3 Wire the amplifier

a. Connect the power, the Signature Data Circuit (SDC), the input risers, and the backup risers as required.
b. Test the circuit before you connect the amplifier to the output wiring.
c. Connect the circuits that check out good to the appropriate amplifier terminals.

Note: The terminal blocks indicate the polarity for normal monitoring of the circuit's electrical integrity.

1 Vrms input wiring

Data in

To next device if required

TB1 + _

CH1 AUDIO OUT + _

TB2

2-AAC

CH2 AUDIO OUT + _

From the SDC

25 Vrms input wiring

To the Ch 1 input of the next amplifier

From the Ch 1 output of the source amplifier

To the Ch 2 input of the next amplifier

From the Ch 2 output of the source amplifier

Notes

Signature series module: CC1, CC2, or UM
UL/ULC Listed 47 kΩ EOL
The actual placement of the TB1 and TB2 output terminals is almost directly behind the input terminals. Note also that the output terminals are taller than the input terminals.
See the detail for 1 volt connections.

5 All wiring is supervised and power-limited.

1 volt connections

Data in

Data out

Class A only

Class B only

Audio Amplifier

Audio Amplifier

Audio Amplifier

Audio Amplifier

24 Vdc from a listed fire alarm power supply

+ 24 Vdc from a listed fire alarm power supply

25 Vdc from a listed fire alarm power supply

Audio riser out

Audio riser return

Typical audio riser out

Typical audio riser return

TB4/TB5 wiring
PRODUCT DESCRIPTION

The SIGA-APS is a switch-mode auxiliary power supply designed to provide additional power for audio components and external Notification Appliance Circuits (NACs). The power supply monitors the AC line, performs ground fault testing, and charges batteries (up to 10 Ah). The SIGA-APS also provides a smooth and uninterrupted transition to batteries in the event of an AC power loss.

All trouble conditions detected by the SIGA-APS are transmitted to the fire alarm control panel through its connection to the Signature Data Circuit (SDC), eliminating the need for additional devices. All connections intended to leave the cabinet are fully protected against direct and induced transient voltage conditions.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>SIGA-APS</th>
<th>SIGA-APS-220</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC input voltage</td>
<td>120 Vac @ 300 W maximum, 50/60 Hz</td>
<td>220 Vac @ 300 W maximum, 50/60 Hz</td>
</tr>
<tr>
<td>Maximum wire size</td>
<td>12 AWG (2.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Output voltage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominal rating</td>
<td>24 Vdc @ 6.75 A total</td>
<td></td>
</tr>
<tr>
<td>Output circuits</td>
<td>Two power-limited circuits rated at 24 Vdc @ 3.2 A each</td>
<td></td>
</tr>
<tr>
<td>Maximum wire size</td>
<td>12 AWG (2.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Battery charging</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charge current</td>
<td>1.0 A</td>
<td></td>
</tr>
<tr>
<td>Charge capacity</td>
<td>10 Ah</td>
<td></td>
</tr>
<tr>
<td>Signature</td>
<td>Two module addresses</td>
<td></td>
</tr>
<tr>
<td>Addressing</td>
<td>Personality Code: 03 (Emulates SIGA-CT2)</td>
<td></td>
</tr>
<tr>
<td>Maximum wire size</td>
<td>14 AWG (1.5 mm²)</td>
<td></td>
</tr>
<tr>
<td>Environmental Conditions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>32 to 120 °F (0 to 49 °C)</td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>93%, Non-condensing</td>
<td></td>
</tr>
</tbody>
</table>

INSTALLATION

Mount the SIGA-APS with the screws and washers provided.

WIRE ROUTING

The routing of power-limited and nonpower-limited wiring differs with each cabinet. For more information on the routing of power-limited and nonpower-limited wiring, see the cabinet’s installation sheet.

PRODUCT DIAGRAM

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
Wire Stripping Guide

Strip 1/4 inch from the ends of ALL wires that connect to the terminal blocks of the module.

Caution:
Exposing more than 1/4 inch of wire may cause a ground fault.
Exposing less than 1/4 inch of wire may result in a faulty connection.

To dedicated 220 Vac, 7.5 Amp, 50/60 Hz supervised branch circuit

To dedicated 120 Vac, 15 Amp, 50/60 Hz supervised branch circuit

Route the battery wiring harness (P/N 250181) through the plastic channel under the SIGA-AAXX amplifiers to the battery terminals.

Notes

- Power-limited
- Nonpower-limited
- Supervised
- Nonsupervised
PRODUCT DESCRIPTION

The SIN-16 is a remote annunciator input receiver module, which consists of sixteen optically isolated, unsupervised input circuits. The SIN-16 is designed for remote annunciator applications with the SAN-CPU or RSA4-CPU.

The SIN-16 provides input circuits for normally-open dry relay contacts or open collector transistor inputs. The high circuit density makes the SIN-16 module ideal for connecting multiple switching functions from graphic annunciators or interfacing to outside systems.

Note: Active SIN-16 inputs generate a supervisory open condition.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>From SAN-CPU</td>
</tr>
<tr>
<td>Standby current</td>
<td>1 mA</td>
</tr>
<tr>
<td>Input current</td>
<td>7 mA per circuit</td>
</tr>
<tr>
<td>Input voltage</td>
<td>24 Vdc, maximum</td>
</tr>
<tr>
<td>Address requirements</td>
<td>16 (2 groups of eight)</td>
</tr>
<tr>
<td>Outputs</td>
<td>None</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz (93.5 g)</td>
</tr>
<tr>
<td>Mounting</td>
<td>See Related documentation.</td>
</tr>
</tbody>
</table>

INSTALLATION

1. Mount the SIN-16.

Note: See the related documentation listed in the title block for more information about specific mounting units.

On a 6-unit, 19-inch rack mount

Warning!

Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!

Observe static-sensitive material handling practices.

PRODUCT DIAGRAM

EDWARDS SYSTEMS TECHNOLOGY, INC.
SARASOTA, FL: 941-739-4300 FAX 941-753-1806
CHESHIRE, CT: 203-699-3000 FAX 203-699-3075
OWEN SOUND, CANADA: 519-376-2430 FAX 519-376-7258
INTERNATIONAL, CANADA: 905-270-1711 FAX 905-270-9553
2 Make the ribbon cable connections.
A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
D. Install the continuity jumper on the last SAN module.

Note: If the SIN-16 is the last module, install the continuity jumper on JP1.

3 Set the SIN-16 dip switches.

Remember that the SIN-16:
- Cannot occupy the 2-SANCOM addresses (01 through 09).
- Requires two input address groups, which consist of eight addresses each.

To set the dip switches:
A. Configure the SAN-CPU in the system programming utility.
B. Note the group number of the SIN-16's start input address in the programming utility (09 through 81).
C. Set the dip switches on S1 to the group number of the SIN-16's start input address.

Group number | Input addresses | S1 dip switch settings | Module
---|---|---|---
1 | 01-08 | on off off off | 2-SANCOM
2 | 09-16 | off on off off | SHO-4
3 | 17-24 | on on off off | SIN-16
4 | 25-32 | off on on off | SIN-16
5 | 33-40 | off off on on | SWU-8(/3)
6 | 41-48 | on off on on | SWU-8/3
7 | 49-56 | on on on off | SWU-8/3
8 | 57-64 | off off off on | SWU-8/3
9 | 65-72 | on off off on | SWU-8/3
10 | 73-80 | off on off on | SWU-8/3
11 | 81-88 | on on off on | SWU-8/3
12 | 89-96 | off off on on | SWU-8/3

Nonsupervised inputs.
TB2 provides + common for the inputs in the following groups:
- Inputs 1-4 (TB1-1 to TB1-4)
- Inputs 5-8 (TB1-5 to TB1-8)
- Inputs 9-12 (TB1-9 to TB1-12)
- Inputs 13-16 (TB1-13 to TB1-16)

Each group of four inputs must share the same power supply positive and negative.
All connections are power-limited.
**PRODUCT DESCRIPTION**

The SLU-16 is a remote annunciator, which provides individual point status indications. The front panel consists of 16 LEDs and a slip-in legend sheet to identify LED functions. The SLU-16 comes in three models:

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLU-16R</td>
<td>16 red LEDs</td>
</tr>
<tr>
<td>SLU-16Y</td>
<td>16 yellow LEDs</td>
</tr>
<tr>
<td>SLU-16R/Y</td>
<td>8 red LEDs/8 yellow LEDs</td>
</tr>
</tbody>
</table>

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Power</th>
<th>From SAN-CPU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby current</td>
<td>1 mA</td>
</tr>
<tr>
<td>Active LED current</td>
<td></td>
</tr>
<tr>
<td>Per LED</td>
<td>6 mA</td>
</tr>
<tr>
<td>Full load</td>
<td>96 mA</td>
</tr>
<tr>
<td>Address requirements</td>
<td></td>
</tr>
<tr>
<td>Inputs</td>
<td>None</td>
</tr>
<tr>
<td>Outputs</td>
<td>16 (2 groups of eight)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz (93.5 g)</td>
</tr>
<tr>
<td>Mounting</td>
<td>See Related documentation.</td>
</tr>
</tbody>
</table>

**INSTALLATION**

1. Mount the SLU-16.

**Note:** See the related documentation listed in the title block for more information about specific mounting units.

**LEDs**

The LEDs indicate programmed points and functions. Operation of the switches is independent of the LEDs, both being under control of the system program.

**PRODUCT DIAGRAM**

**INSTALLATION SHEET:**

SLU-16R/Y Remote Annunciator

INSTALLATION SHEET P/N: 387203  FILE NAME: 387203.CDR
REVISION LEVEL: 2.0  APPROVED BY: J. Massing
DATE: 31MAR00  CREATED BY: B. Graham

Related documentation: SAN Series Remote Annunciator Enclosures installation sheet
2 Make the ribbon cable connections.
A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
D. Install the continuity jumper on the last SAN module.

Note: If the SLU-16 is the last module, install the continuity jumper on JB1.

3 Set the SLU-16 dip switches.
Remember that the SLU-16:
- Cannot occupy addresses 01 through 09 because they belong to the 2-SANCOM.
- Requires two address groups, which consist of eight points each.

To set the dip switches:
A. Configure the SAN-CPU in the system programming utility.
B. Note the SLU-16 in the programming utility (09 to 81).
C. Set the dip switches on S1 to match the group number of the SLU-16’s output start address.

<table>
<thead>
<tr>
<th>Group Number</th>
<th>Output addresses</th>
<th>S1 dip switch settings</th>
<th>Module</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01-08</td>
<td>on off off off</td>
<td>2-SANCOM</td>
</tr>
<tr>
<td>2</td>
<td>09-16</td>
<td>off on off off</td>
<td>SHO-4</td>
</tr>
<tr>
<td>3</td>
<td>17-24</td>
<td>on on off off</td>
<td>SLU-16</td>
</tr>
<tr>
<td>4</td>
<td>25-32</td>
<td>off off on on</td>
<td>SLU-16</td>
</tr>
<tr>
<td>5</td>
<td>33-40</td>
<td>on off on off</td>
<td>SLU-16</td>
</tr>
<tr>
<td>6</td>
<td>41-48</td>
<td>off on on off</td>
<td>SWU-8(/3)</td>
</tr>
<tr>
<td>7</td>
<td>49-56</td>
<td>on on off on</td>
<td>SWU-8(/3)</td>
</tr>
<tr>
<td>8</td>
<td>57-64</td>
<td>off off off on</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>65-72</td>
<td>on off off on</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>73-80</td>
<td>off on off on</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>81-88</td>
<td>on on off on</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>89-96</td>
<td>off off on on</td>
<td></td>
</tr>
</tbody>
</table>

4 Label the SLU-16.
To label the SLU-16:
A. Identify each LED on the SLU-16 according to its programmed function.
B. Write the functions on the slip-in legend sheet next to the appropriate LEDs.
C. Insert the label under the SLU-16 face plate.
PRODUCT DESCRIPTION

The SRU-8 is a remote annunciator relay module, which consists of eight single pole double throw (SPDT) relays. These dry contact relays are normally open/normally closed. See the reverse side of this installation sheet for more detail. The SRU-8 is designed for applications with the SAN-CPU or RSA4-CPU.

INSTALLATION

1 Mount the SRU-8.

Note: See the related documentation listed in the title block for more information about specific mounting units.

On a 6-unit, 19-inch rack mount

Warning!
Disconnect power to cabinets before installing or removing components. Failure to do so may result in serious injury or loss of life.

Caution!
Observe static-sensitive material handling practices.

SPECIFICATIONS

Power From SAN-CPU
Standby current 1 mA
Input current 20 mA per circuit
Input voltage 24 Vdc, maximum
Address requirements
Inputs None
Outputs 8 (1 group of eight)
Weight 3.3 oz (93.5 g)
Mounting See Related documentation.

PRODUCT DIAGRAM

The SRU-8 is a remote annunciator relay module, which consists of eight single pole double throw (SPDT) relays. These dry contact relays are normally open/normally closed. See the reverse side of this installation sheet for more detail. The SRU-8 is designed for applications with the SAN-CPU or RSA4-CPU.
### INSTALLATION

2 Make the ribbon cable connections.
   A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
   B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
   C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
   D. Install the continuity jumper on the last SAN module.

3 Set the SRU-8 dip switches.
   Remember that the SRU-8:
   - Cannot occupy the 2-SANCOM addresses (01 through 09).
   - Requires one output address group, which consists of eight addresses.

   To set the dip switches:
   A. Configure the SAN-CPU in the system programming utility.
   B. Note the start output address of the SRU-8 in the programming utility (09 to 89).
   C. Set the dip switches on S1 to the group number of the SRU-8’s start output address.

   **Group number** | **Output addresses** | **S1 dip switch settings** | **Module**
   --- | --- | --- | ---
   1 | 01-08 | on off off off | 2-SANCOM
   2 | 09-16 | off on off off | SHO-4
   3 | 17-24 | on on off off | SRU-8
   4 | 25-32 | off off on off | SWU-8(3)
   5 | 33-40 | on off on off | SWU-(8/3)
   6 | 41-48 | off on on off | 
   7 | 49-56 | on on off off | 
   8 | 57-64 | off off on on | 
   9 | 65-72 | on off off on | 
   10 | 73-80 | off on off on | 
   11 | 81-88 | on on off on | 
   12 | 89-96 | off off on on |

### FIELD WIRING

**Note:** Power-limited if the source is power-limited. If the source is nonpower-limited, maintain a space of 1/4 inch from power-limited wiring. Otherwise, use FPL, FPLP, FPLR, or an equivalent in accordance with the National Electric Code.

<table>
<thead>
<tr>
<th>Terminal Relay</th>
<th>Description</th>
<th>Terminal Relay</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB1-1 K1</td>
<td>NC</td>
<td>TB2-1 K5</td>
<td>NC</td>
</tr>
<tr>
<td>TB1-2 K1</td>
<td>COM</td>
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<td>COM</td>
</tr>
<tr>
<td>TB1-3 K1</td>
<td>NO</td>
<td>TB2-3 K5</td>
<td>NO</td>
</tr>
<tr>
<td>TB1-4 K2</td>
<td>NC</td>
<td>TB2-4 K6</td>
<td>NC</td>
</tr>
<tr>
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<td>COM</td>
</tr>
<tr>
<td>TB1-6 K2</td>
<td>NO</td>
<td>TB2-6 K6</td>
<td>NO</td>
</tr>
<tr>
<td>TB1-7 K3</td>
<td>NC</td>
<td>TB2-7 K7</td>
<td>NC</td>
</tr>
<tr>
<td>TB1-8 K3</td>
<td>COM</td>
<td>TB2-8 K7</td>
<td>COM</td>
</tr>
<tr>
<td>TB1-9 K3</td>
<td>NO</td>
<td>TB2-9 K7</td>
<td>NO</td>
</tr>
<tr>
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<tr>
<td>TB1-12 K4</td>
<td>NO</td>
<td>TB2-12 K8</td>
<td>NO</td>
</tr>
</tbody>
</table>

**Detail**

Typical layout for a single pole double throw (SPDT) relay terminal

- NC
- COM
- NO
- To the control circuit
- 24 Vdc, 4A max.
- Rated for pilot duty

---

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PRODUCT DESCRIPTION

The SWU-8 and the SWU-8/3 are remote annunciator LED/Switch modules, which consist of eight switches and sixteen yellow LEDs. Both models are designed for remote switching and annunciator applications with the SAN-CPU or RSA4-CPU.

The SWU-8 provides two-position toggle switches; the SWU-8/3 provides three-position toggle switches. Two LEDs sit next to each switch to form a functional group. The front panel protects a slip-in legend sheet, which identifies individual switch and LED functions.

The SWU-8 provides point status indication and switching functions at a location remote from the main control panel. Typical applications include audio or fire fighter telephone zone select, audio zone silence, and manual control/override of automatic systems.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power</td>
<td>From SAN-CPU</td>
</tr>
<tr>
<td>Standby current</td>
<td>1 mA</td>
</tr>
<tr>
<td>Active LED current</td>
<td></td>
</tr>
<tr>
<td>Per LED</td>
<td>6 mA</td>
</tr>
<tr>
<td>Full load</td>
<td>96 mA</td>
</tr>
<tr>
<td>Address requirements</td>
<td></td>
</tr>
<tr>
<td>SWU-8 inputs</td>
<td>8 (1 group of eight)</td>
</tr>
<tr>
<td>SWU-8 outputs</td>
<td>16 (2 groups of eight)</td>
</tr>
<tr>
<td>SWU-8/3 inputs</td>
<td>16 (2 groups of eight)</td>
</tr>
<tr>
<td>SWU-8/3 outputs</td>
<td>16 (2 groups of eight)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.3 oz (93.5 g)</td>
</tr>
<tr>
<td>Mounting</td>
<td>See Related documentation.</td>
</tr>
</tbody>
</table>

INSTALLATION

1. Mount the SWU-8(/3).

   **Note:** See the related documentation listed in the title block for more information about specific mounting units.

   **On a 6-unit, 19-inch rack mount**

   ![Diagram of SWU-8(/3) mounted on a 6-unit, 19-inch rack](image)

   **In a 4-unit or 8-unit enclosure**

   ![Diagram of SWU-8(/3) in a 4-unit or 8-unit enclosure](image)

LEDs

The LEDs indicate programmed points and functions. Operation of the switches is independent of the LEDs, both being under control of the system program.

PRODUCT DIAGRAM

![Diagram of SWU-8 and SWU-8/3](image)
2 Make the ribbon cable connections.
A. Plug the ribbon cable assembly (P/N 250080) from P1 of the SAN-CPU into P2 of the 2-SANCOM.
B. Plug the ribbon cable from P1 of the 2-SANCOM to P2 of the next SAN series module.
C. Plug the ribbon cable from P1 of each SAN module to P2 of the next SAN module until you reach the last one.
D. Install the continuity jumper on the last SAN module.

Note: If the SWU-8(/3) is the last module, install the continuity jumper on JP1.

3 Set the dip switches.
Remember that the SWU-8:
- Cannot occupy the 2-SANCOM addresses (01 through 09).
- Requires one input address group and two output address groups, which consist of eight addresses each.

Remember that the SWU-8/3:
- Cannot occupy the 2-SANCOM addresses (01 through 09).
- Requires two input address groups and two output address groups, which consist of eight addresses each.

To set the dip switches:
A. Configure the SAN-CPU in the system programming utility.
B. Note the SWU-8(/3) in the programming utility (09 to 81).
C. Set the dip switches on S9 and S10 to match the group numbers of the SWU-8’s start input and start output addresses.

4 Label the SWU-8(/3).
To label the SWU-8(/3):
A. Identify each LED/switch group on the SWU-8(/3) according to its programmed function.
B. Write the functions on the slip-in legend sheet next to the appropriate LED/switch group.
C. Insert the label under the SWU-8(/3) face plate.