AES 7794A IntelliPro Fire

Installation Manual
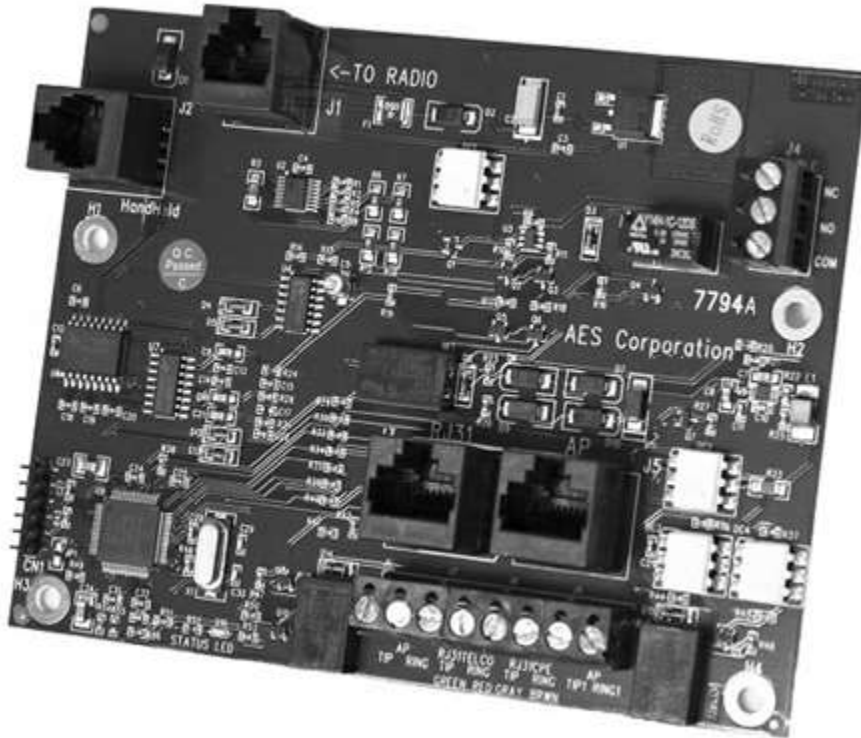
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1.   Summary

This document describes the installation procedure for the AES 7794A IntelliPro Fire module used with the AES 7707 or 7177 Subscriber in commercial Fire Alarm Control Panel (FACP) installations.

Installed between the FACP and AES 7707 or 7177 Subscriber, the 7794A intercepts alarm panel messages and sends them to the monitoring station via the AES 7707 or 7177 Fire Subscriber Unit.

Important! The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.

1.1   Basic Functions

The 7794A is a dialer capture module with monitoring capabilities, as well as full emulation of the POTS telephone line for incoming data sent from the FACP. The 7794A can intercept the FACP phone line connection if the intercept number matches the number being dialed.

1.2   User Interface

The 7794A does not use configuration jumper settings and is programmed using a web browser interface through the AES Model 7707 or 7177 Fire Subscriber. Refer to the 7707 Installation Manual, AES P/N 40-7707 or 7177 Installation Manual, AES P/N 40-7177.

1.3   System Knowledge Requirements

This document assumes that the user knows how to set the AES subscriber unit account number, cipher, and other configuration settings as well as how to operate the AES MultiNet software environment including IPCtrl and automation.

Fire Alarm Control Panel Telco Interface Requirements

Note: The 7794A is *not* compatible with Fire Alarm Control Panels that test *both* digital communicator telephone lines *at the same time*.

With the 7794A IntelliPro used as the sole path communicator, only one telephone line connection to the FACP is required. *Parallel connect both telephone lines together, if line 2 cannot be disabled.*

Note: The 7794A can provide voltage to both telephone line connections if they are connected together in parallel with TIP to TIP and RING to RING as shown in Figure 2 on page 11 and Figure 4 on page 12.

1.4   Safety Considerations

As part of the 7794A installation, the following safety considerations should be kept in mind:

- Install all equipment in accordance with the National Electric Code, National Fire Protection Association NFPA 70, NFPA 72, and local building codes.

- Test this system periodically for proper operation. AES assumes no responsibility for this equipment's failure to operate. AES's sole responsibility is to repair or replace any AES device found to be defective during the warranty period.

- Avoid dropping or other physical impact which could damage the card or card components.

1.5   Technical Specifications

SIZE: 4 7/8 in. x 5 in. (12.3 cm x 12.7 cm)

WEIGHT: 0.4 pound (0.18 kilogram)

POWER INPUT: Power supplied from AES Model 7707 or 7177

VOLTAGE: 12 VDC nominal

CURRENT: 350 mA nominal; 160 mA standby

FUSE: Onboard self-resetting. Not user serviceable

OPERATING TEMPERATURE RANGE: 0° to 49°C (32° to 120°F)

STORAGE TEMPERATURE RANGE: −10° to 60°C (14° to 140°F)

RELATIVE HUMIDITY RANGE: 0 to 93% RH, non-condensing

Important!	The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.

Notes:

- The 7794A must be installed in accordance with National Electrical Codes and UL-864.

- Canadian installations must be done in accordance with Canadian Electrical Codes, CAN/ULC-S524 and CAN/ULC-S561.

2.   Installation of 7794A

2.1   Equipment List

The 7794A IntelliPro includes the following items:

- 7794A IntelliPro
- AES RJ11 cable   1 each   AES P/N 13-0395
- Hex standoffs hardware
- Hex nuts w/lock washer   4 each
- Insulating washers   2 each

2.2   Installation

1. Place hex standoffs on mainboard in four places shown in the photo below. Use the longer hex standoffs (B) on the mainboard, and use the shorter hex standoffs (A) on top of the zone input card. Do not overtighten the standoffs.
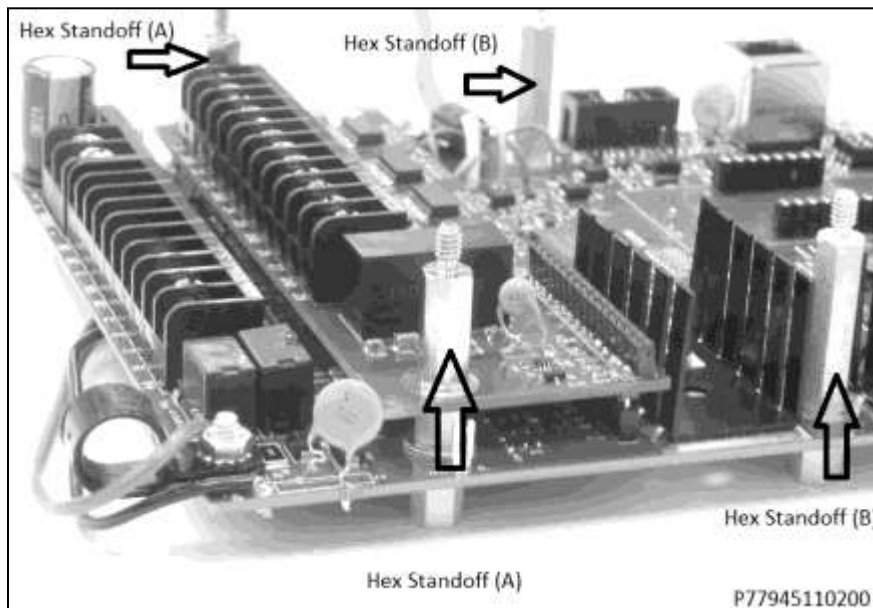
2. Place the 7794A on top of the installed standoffs.

3. Install insulating washers (P/N 09-7X94) over mounting holes H1 and H3.

4. Place hex nuts over the washer on the standoffs to secure the board in the four places as shown below. Do not overtighten hex nuts.
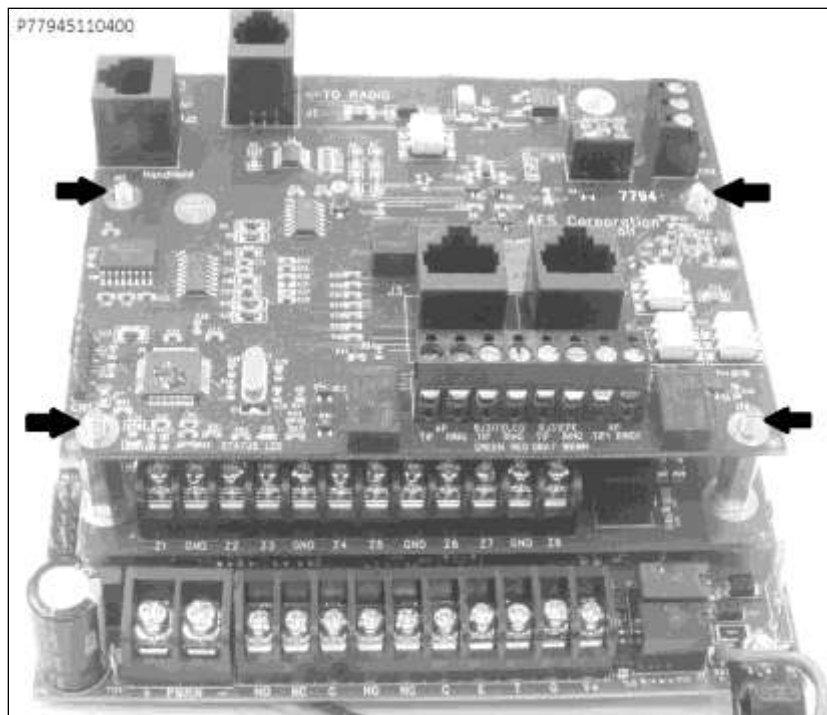
For information on connecting the fire alarm control panel PSTN wiring, refer to either the **Primary Communication Interfac**e section on page 10 or the **Supplemental Communication Interface** section on page 13, depending on your application.

Important!	The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.

3.   Primary Communication Interface

Figure 1 shows connector and diagnostic LED location on the 7794A.
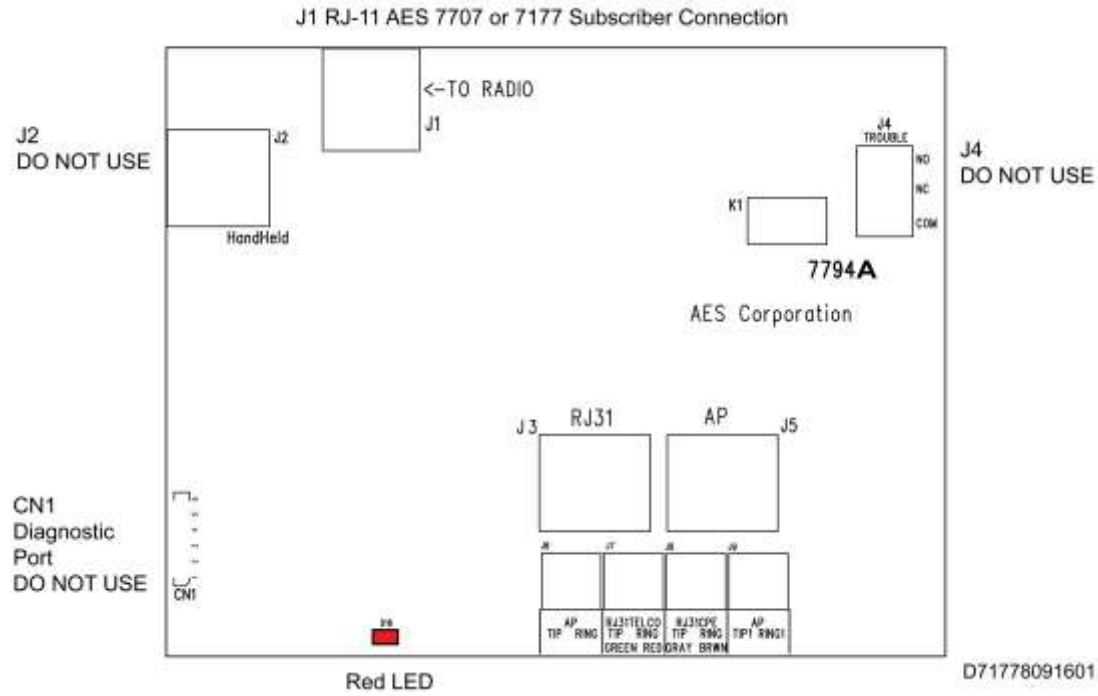
Figure 1.   7794A Connector and LED Locations

3.1   Connecting 7794A to Alarm Panel

When mounted in a subscriber enclosure and connected to the Fire Alarm Control
Panel dialer, the 7794A delivers alarm messages to the central monitoring station as
shown in Figure 2. The 7794A is supervised by the 7707 or 7177 Subscriber, which
continuously monitors a "heartbeat" signal from the 7794A. In this configuration no
Zone inputs are connected from the FACP to the 7794A.
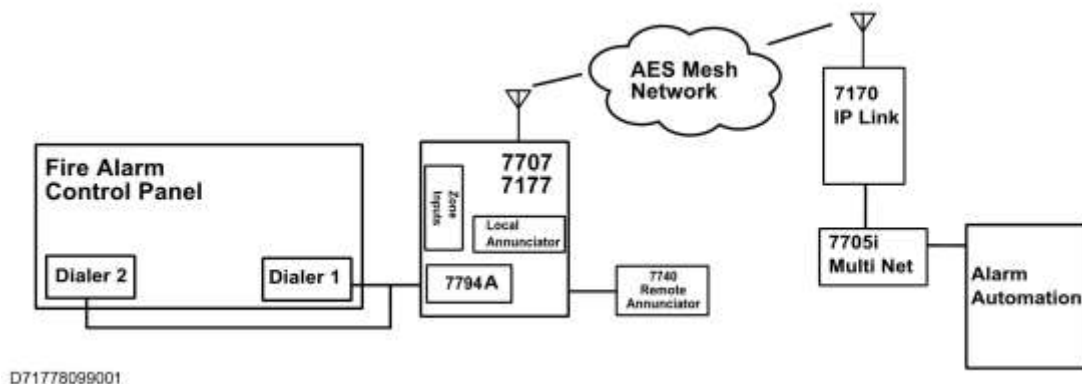
Figure 2.   Primary Communications Interface Using FACP Dialers

3.2   Connection Details

When mounted in a subscriber enclosure and connected to the Fire Alarm Control
Panel dialer, the 7794A delivers alarm messages to the central monitoring station as
shown in Figure 2 and Figure 3.

Figure 3 shows a Primary Interface using a FACP Dialer and a Secondary interface
using a second FACP dialer and a Diverse Technology connection such as POTS,
GSM or TCP/IP.

Important!	The 7794A IntelliPro and Subscriber must be connected to the FACP within the same room and in no more than 20 feet of conduit.

D71778093601
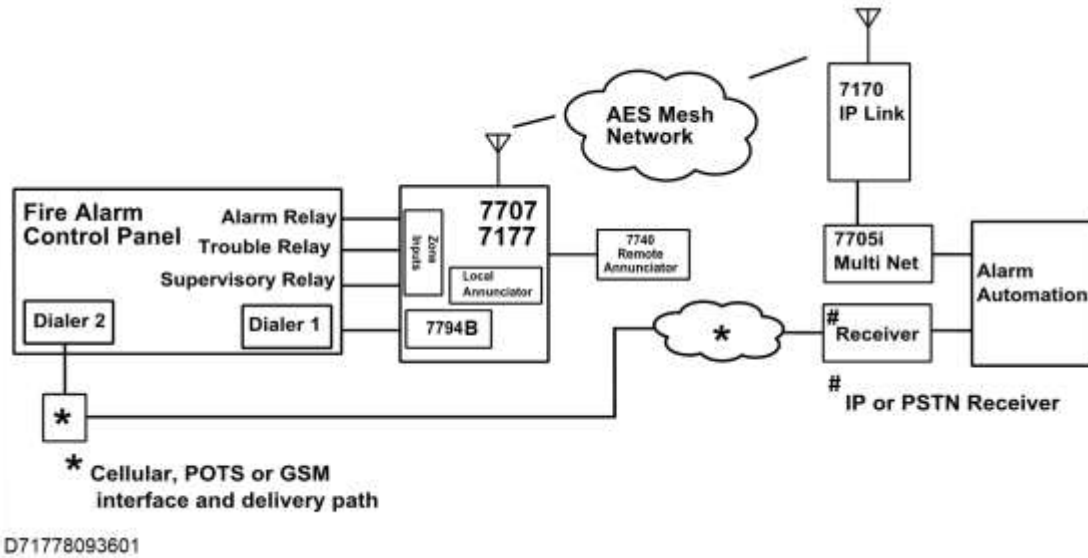
Figure 3.   Primary and Secondary Communications Interface

To connect the 7794A to the FACP:

1. Extend FACP Dialer 1 and Dialer 2 TIP and RING to the 7794A.

2. Connect FACP Dialer 1 and Dialer 2 TIP wire to J6 terminal block labeled **AP TIP** (see Figure 4).

3. Connect FACP Dialer 1 and Dialer 2 RING wire to the J6 terminal block labeled **AP RING** (see Figure 4).

D77944080302A

Figure 4.   7794A-to-FACP Connections

Important!   Disabling Second FACP Telco Connection - most fire panels can be configured to disable the second Telco connection, which disables panel supervision for the second (disabled) Telco connection. Supervision alarms at the FACP can be prevented by disabling the second Telco connection.

4. With the Primary Communication Interface wiring completed, proceed to the Configuring the 7794A.

4. Supplemental Communication Interface

Figure 5 shows connector and diagnostic LED location on the 7794A.
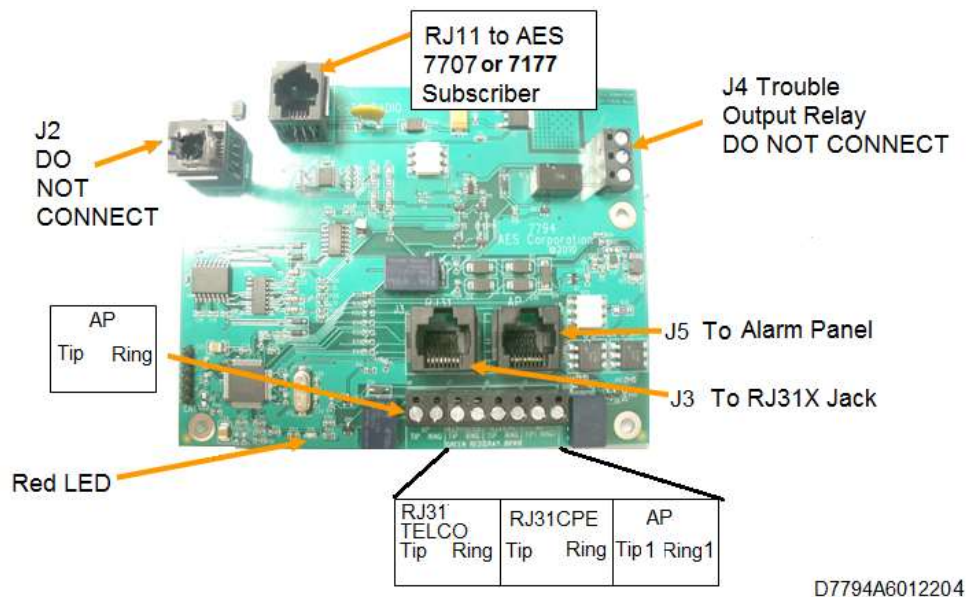
Figure 5.   Connector and LED Locations

4.1   Connecting the 7794A to Alarm Panel (U. S. Installation)

The diagram below displays the Fire Alarm Control Panel (FACP) with both dialers connected to the 7794A (AP TIP and AP RING). Note that the output zones form the FACP must be connected to the 7707 or 7177 in this configuration.
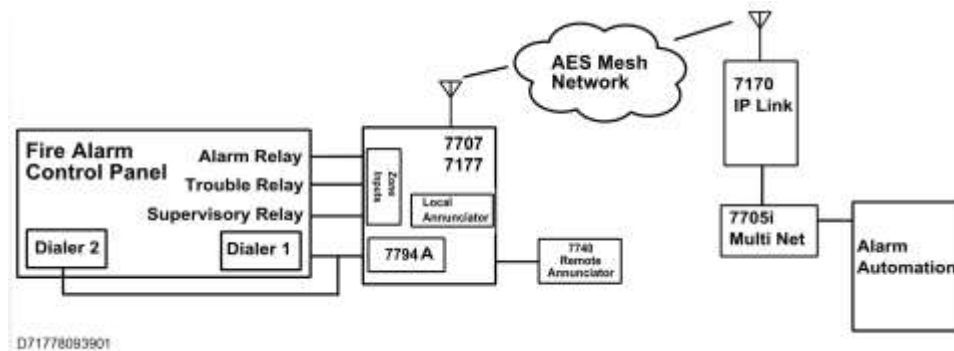
Figure 6.   7794A to Alarm Panel (U.S. Installation)

Two connection methods are used from FACP to the subscriber. The first is FACP Dialer 1 and Dialer 2 to the 7794A. The second is FACP zone outputs to 7707 or 7177 zone inputs.

- Method 1: Dialer 1/ Dialer 2 to 7794A
- Method 2: FACP relays into 7707 or 7177 Subscriber Zone Inputs

Method 1 – FAILS

FACP detects Dialer 1 and Dialer 2 both in trouble

FACP trips relay "T" to 7707 or 7177

7707 or 7177 reports to MultiNet (DIALER FAILURE)

Method 2 – FAILS (antenna cut, etc.)

7707 or 7177 subscriber engages J4 Trouble Relay

J4 relay trip causes local annunciation (see 7707 Installation and Operation Manual – AES P/N 40-7707 or 7177 Installation and Operation Manual – AES P/N 40-7177 for details)

4.2   Connection Details – 7794A to Alarm Panel (U.S Installation)

Connection from the FACP to the 7794A is provided in the instructions below:

1. Connect the FACP Dialer 1 and Dialer 2 TIP and RING to the 7794A terminal block labeled AP TIP RING as shown in the figure below.
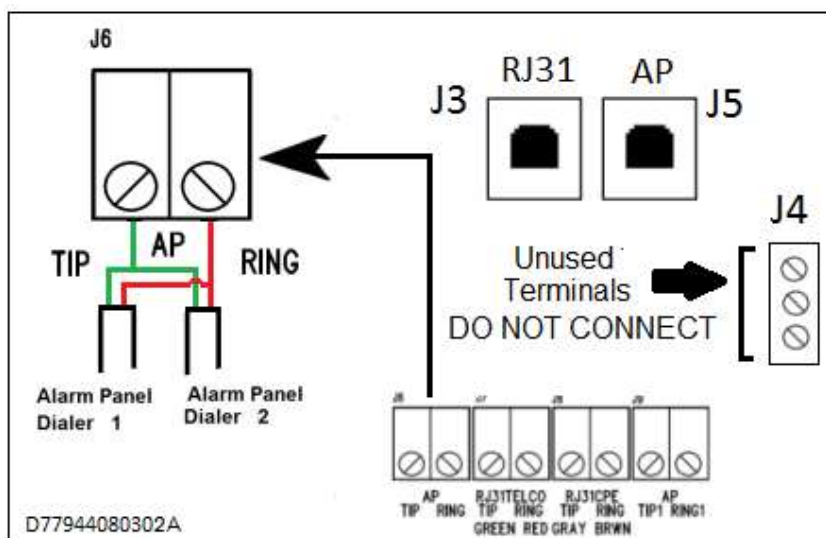
Figure 7.   Alarm Panel Connections
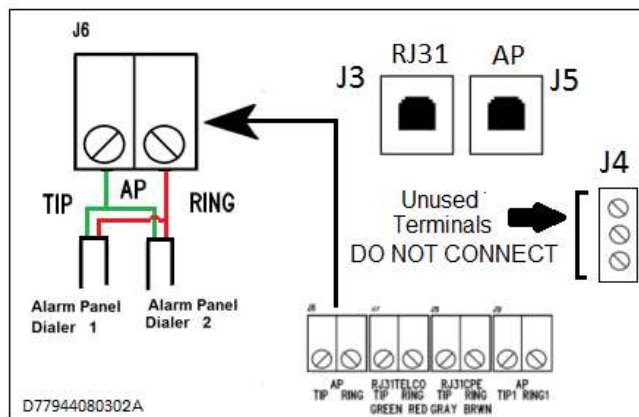
2. Wire the zones of the FACP to the 7707 or 7177 as shown above in Figure 6.

> **Important!** Disabling Second FACP Telco Connection ─ Most fire panels can be
> configured to disable the second Telco connection which disables panel supervision
> for the disabled connection. Supervision alarms at the FACP can be prevented by
> disabling the second Telco connection.

4.3   Connecting the 7794A to Alarm Panel (Canadian Installation)

Connection from the FACP to the 7794A is provided in the instructions below.
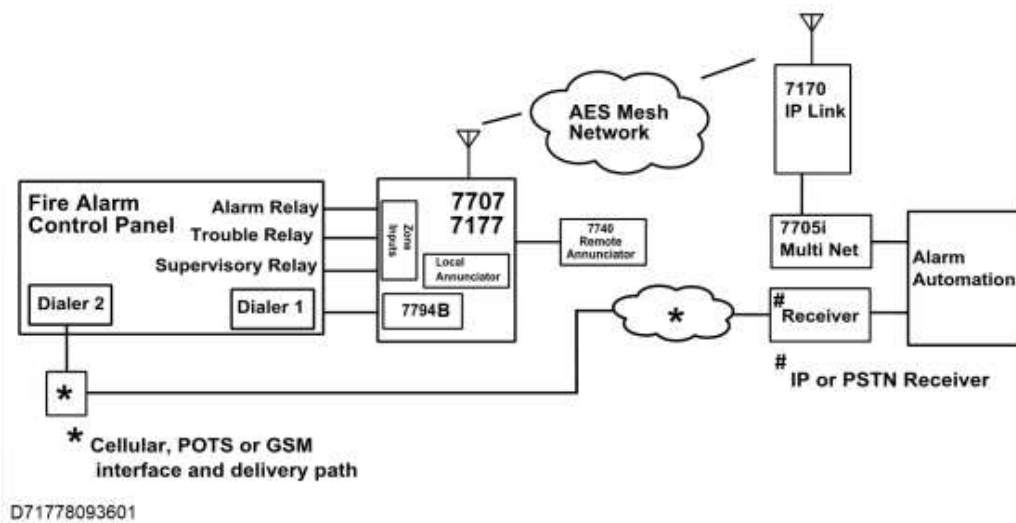
Figure 8.   Canada/Dual Dialer Installation

FACP with PSTN and RF

Method 1: PSTN via Dialer 2

Method 2: RF (7707 or 7177) via Relays

Method 3: Supplemental: RF (7794A to 7707 or 7177) via Dialer 1, Reverse Polarity,
Other Technologies, Relays, or other means provided by ULC S559 Listed FACP

Normal case: Alarm = Dialer 2 dials into Phone Receiver or via Dialer 1 into MultiNet
receiver

Method 1 FAILS: PSTN fails (line cut, failure to connect, etc.)

Reports with two messages:

AP detects (AP monitoring PSTN), and trip relay "T" connected to the 7707 or 7177.

7707 or 7177 subscriber sends ZONE alarm (DIALER FAILURE).

AP reports via Method 3. If used, 7794A-7707 or 7794A-7177 reports into MultiNet (DIALER FAILURE).

Method 2 FAILS: antenna cut, etc.

7707 or 7177 engages J4 Trouble Relay

J4 relay trip causes local annunciation

AP reports via Dialer into Phone Receiver (RF COMMUNICATOR FAILURE)

4.4   Connection Details – 7794A to Alarm Panel (Canadian Installation)

Connections from the FACP are provided in the following instructions:

1. Connect the FACP Dialer 2 TIP and RING to the PSTN (Public Switching Telephone Network).

2. Connect the FACP Dialer 1 TIP and RING to the 7794A terminal block labeled AP TIP RING.

3. Wire the Zones of the FACP (Alarm, Trouble, Supervision) into the 7707 or 7177 as shown above in Figure 8.

4. Connect the FACP.

D71778094501
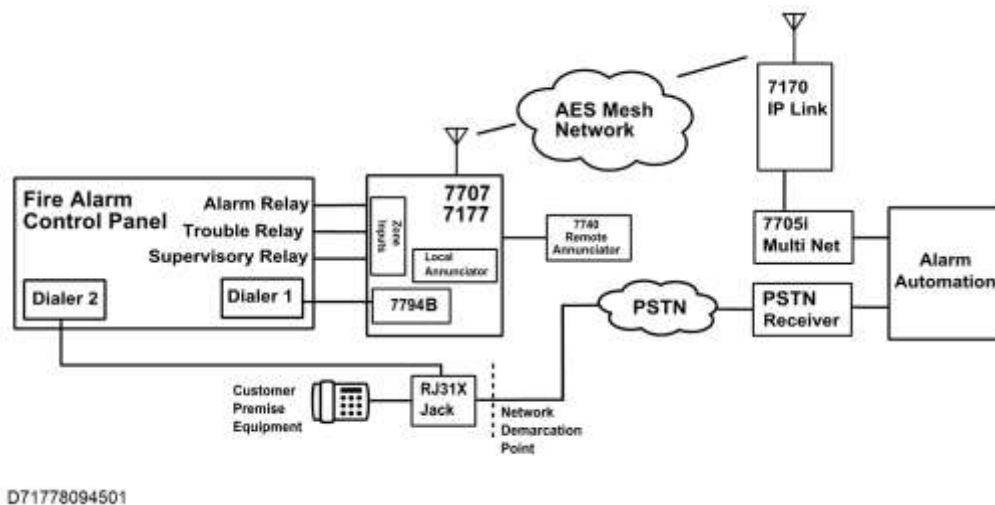
Figure 9.   Connecting to the Alarm Panel Using a Shared PSTN Line

FACP with PSTN and RF

- Method 1: PSTN via Dialer 2

- Method 2: RF (7707 or 7177) via Relays

- Method 3: Supplemental: RF (7794A to 7707 or 7177) via Dialer 1, Reverse Polarity, Other Technologies, Relays or other means provided by ULC S559 Listed FACP

Normal case: Alarm = Dialer 2 dials into Phone Receiver or via Dialer 1 into MultiNet receiver

Method 1 FAILS: PSTN fails (line cut, failure to connect, etc.)

Reports with two messages:

AP detects (AP monitoring PSTN, and trips Trouble relay connected to the 7707 or 7177.

7707/7177 subscriber sends ZONE alarm (DIALER FAILURE).

AP reports via Method 3. If used, 7794A-7707 or 7794A-7177 reports into MultiNet (DIALER FAILURE).

Method 2 FAILS: antenna cut, etc.

7707 or 7177 engages J4 Trouble Relay

J4 relay trip causes local annunciation

AP reports via Dialer into Phone Receiver (RF COMMUNICATOR FAILURE)

5.   Configuring the 7794A

Configuring the 7794A IntelliPro installed in the 7707 or 7177 subscriber requires a smartphone or another computer device with a web browser. The 7707/7177 subscriber must be configured and powered on.

5.1   Configuration Interface

The 7794A is configured through a web browser interface provided by the 7707/7177 subscriber. Refer to the 7707 Installation Manual, AES P/N 40-7707 or 7177 Installation Manual AES P/N 40-7177 for details on accessing the configuration interface through the subscriber.

Reset to Defaults

The 7794A can be set to factory default configuration using the following steps:

1. Click on **System** tab:
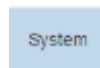
2. Under **Reset to Default**, set **IntelliPro Config** to **Yes**. Click the **Reset Configuration** button.

    Next, the login page and the message that settings have been reset appears:
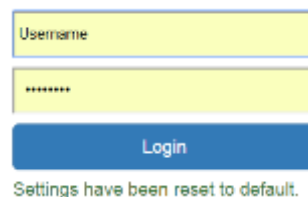
3. Login with the assigned username and password to continue with the 7794A configuration.

6.   Programming

6.1   Programming Options – UL NOTICE TO USERS

NOTICE TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES

This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, certain programming features or options must be limited to specific values or not used at all as indicated in Table 1. These apply when the 7794A is use as a Primary Communication Interface.

Table 1. Configuration Options for AES 7794A				
Feature or Option	**Permitted in UL (Y/N)**	**Possible Settings**	**Setting(s) Permitted in UL864?**	**Comment**
Line Cut Report	Y	Y/N	Y	Select based on use
POTS Cut Report Delay	Y	Any value between 0-9999(seconds)	0-60 sec max.	Select based on use
POTS Restoral Delay	Y	Any value between 0-9999(seconds)	0-60 sec max.	Select based on use
Line Cut Sensing	Y	Y/N	Y	Select based on use
M3 EC TEXT to CID Enabled	N	Y/N	N	

6.2   Phone Line

This option is set depending on whether a POTS (telephone company provided) line is connected.

Option settings: **Yes** or **No**

Phone Line | No |

- **Yes** = Phone line is present
- **No** = Phone line is not present (default)

Important!   When **Phone Line** is set to **Yes** and **Line Cut** is set to **No**, then if **Phone Line** is changed from **Yes** to **No**, then back to **Yes**, the **Line Cut Report** automatically changes from **No** back to **Yes**.

6.3   Intercept Number

This option sets the number programmed in the Fire Alarm Control Panel for the 7794A to intercept when the panel dials. A minimum of three numbers must be entered. Default number is 5555.

Intercept Number | 5555 |

6.4   Alarm Panel Report Format

This option sets the format that the 7794A will interpret when data is sent by the FACP over the dialer interface. The 7794A interprets the data and transfers it to the subscriber where it is sent to the MultiNet.

The 7794A currently supports the following formats:

- Contact ID (Ademco CID)
- Pulse formats at 10 and 20 pulses per second, with combinations of handshake, kiss-off, and center pulse frequencies, plus variable durations that cover most pulse formats
- Modem formats from Bosch, ranging from Modem II to Modem IIIa.

The options for the alarm panel report are **CID**, **MODEM** or **PULSE**:

AP Report Format | CID ▼ |
CID
MODEM
PULSE

CID Alarm Format

This option sets the Alarm Panel Report Format to Contact ID format.
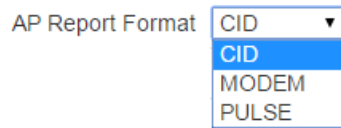
Modem Alarm Format

This option sets the Alarm Panel Report Format to **MODEM**.
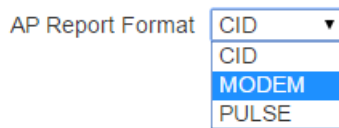
When **MODEM** is selected, the Alarm Panel Modem Format menu selection appears:
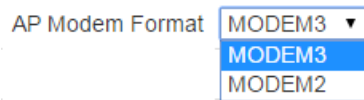
For details on selection, see "Bosch/Radionics Modem II and Modem III," on page 30.

Pulse Alarm format

This option sets the durations and frequencies for the Pulse Alarm format.

AP Report Format [CID ▼]
CID
MODEM
PULSE

The following configuration options may be set when the format is **PULSE**:

- Handshake Duration
- Handshake/Kissoff Frequency
- Center Frequency
- Inter-Digit Time
- Inter-Round Time

Available Settings

AP Report Format [PULSE ▼]
Handshake Duration [0.8 ▼] Sec.   0.8, 0.4 sec
Handshake/Kissoff Freq [1400 ▼] Hz.   1400, 2300 Hz
Center Freq [1800 ▼] Hz.   1800, 1900 Hz
Inter Digit Time [0.7 ▼] Sec.   0.7, 0.9, 1.7 sec
Inter Round Time [3 ▼] Sec.   3, 5 sec

6.5   AP Input Gain

This option increases/decreases sensitivity of the 7794A to allow decoding of data from the alarm panel. Some alarm panels will adjust to this setting.

The options are:

- **10** dB
- **20** dB (default)

AP Input Gain [10 ▼] dB.
10
20

6.6   Intercept on Blind Dial

This option is used when the alarm panel does not wait for a dial tone after going off-hook to dial out. When set to **Yes**, the 7794A will expect to receive digits as soon as the AP goes off hook. The initial dial tone for off-hook will not occur.

Options are:

- **Yes**: Intercept on AP blind dial enabled
- **No**: Intercept on AP blind dial disabled (default)

Intercept on Blind Dial [No]

6.7   Line Cut Report

To view, **Phone Line** must be set to **Yes**.

Phone Line [Yes]

By default, **Line Cut Report** is set to **Yes**.

Line Cut Report [Yes]

Note: The following combination of **Phone Line** = **Yes** and **Line Cut Report** = **No** will change when **Phone Line** (POTS) is set to **No**, then changed again to **Phone Line** (POTS) = **Yes**. The **Line Cut Report** will be overwritten and return to **Yes**.

6.8   POTS Cut Report Delay

POTS Cut Report Delay requires that **Phone Line** be set to **Yes**:

Phone Line [Yes]

The default setting is 45 seconds.

Note: If the POTS line condition returns to a no fault condition before the POTS Cut Report Delay count reaches the time setting, then no signal will be sent.

POTS Cut Report Delay (0 - 60) [45] Sec.

6.9   POTS Restoral Delay

POTS Restoral Delay requires that the **Phone Line** setting be set to **Yes**:

Phone Line   [Yes]

POTS Restoral Delay specifies the delay time before a message is sent, indicating that the POTS phone line has changed from fault state to functional state. The restoral message transmission is delayed by the number of seconds set to ensure the phone line is stable.

POTS Restoral Delay (0 - 60) [60] Sec.

6.10   AP Account Override

AP Account Override requires that **Phone Line** be set to **Yes**:

Phone Line   [Yes]

The purpose of this option is to allow bypassing the alarm panel account. When set to **Yes**, the account number of the AES subscriber is used in place of the account number in the control panel. This is useful for automation software packages without the capability of two distinct account numbers for one customer account.

Options are:

- **Yes**: AP ACCT Override enabled
- **No**: AP ACCT Override disabled (default)

AP Account Override   [No]

6.11   POTS Input Gain

POTS Input Gain requires that **Phone Line** be set to **Yes**:

POTS Input Gain increases the 7794A sensitivity when the 7794A is listening to activity on the telephone line. The default value is 20 dB, and reducing this value will decrease the 7794A gain.

Options are:

- **0** dB
- **10** dB
- **20** dB (default)

6.12   Advanced Options Display

Advanced Options allows for display and configuration of the following when set to **Yes**:

Options are:

- **Yes** to enable
- **No** to disable (default)

6.13   AP Output Gain

Advanced Options Display must be set to **Yes**.

Advanced Options   Yes

AP Output Gain sets the output gain when the 7794A is in POTS emulation mode. It is used to increase the gain of the dial tone as well as the handshake and KISS-OFF tones sent by the 7794A to the AP. Increasing this value will increase the AP output gain.

Options are:

- **0** dB (default)
- **3** dB
- **6** dB

AP Output Gain   3 ▾
0
3
6

6.14   Line Cut Sensing

This setting enables or disables POTS line cut sensing. When set to **Yes**, the line is monitored for cut interruption.

Line Cut Sensing   Yes

This setting requires that **Phone Line** and **Advanced Options** be set to **Yes**:

Phone Line   Yes

Advanced Options   Yes

6.15   CID 4xx Letter

Advanced Options must be set to **Yes** to access this setting:

Advanced Options   Yes

For reporting, open and close reports with either **U** or **C**:

- **U**: Reports open and close reports with "U" (default)
- **C**: Reports open and close reports with "C"

CID 4xx letter   U ▾
U
C

6.16   M3 EC TEXT to CID Enabled

Note: **M3 EC TEXT to CID** is MODEM III Event Code Text to Contact ID. Refer to Section 6.1 Programming Options ─ UL NOTICE TO USERS Table 1.

This setting enables the 7794A to scan the Modem III description field for text specific to events that are typically silent at the local site and that the dealer *does not* want to have sent through as a general alarm message (E140/R140). Setting to **Yes** allows Modem III alarm messages to be translated not only based on Event Code (EC) from the Modem III packet, but also from contents of the text used to describe the event.

AP Report Format must be set to **MODEM**, and **AP Modem Format** must be set to **MODEM3** as shown below:

AP Report Format | MODEM ▾
AP Modem Format | MODEM3 ▾

Advanced Options and **M3 EC Text to CID** must be set to **Yes** to access this setting.

Advanced Options Yes

M3 EC Text to CID Yes

6.17   Voltage Pump

This setting requires that **Advanced Options** be set to **Yes**:

Advanced Options Yes

Setting **Voltage Pump** from **Yes** to **No** is required only for alarm panel interfaces that have marginal communication quality working with the 7794A.

Voltage Pump Yes

Options are:

- **Yes**: Enables the voltage pump (default)
- **No**: Disables the voltage pump

6.18   Clock Frequency Shift

Clock Frequency Shift requires that **Advanced Options** be set to **Yes**:

Advanced Options   Yes
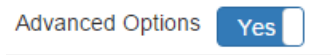
Clock Frequency Shift is for advanced diagnostic purposes and is generally not used.

- **Yes**: Enable
- **No**: Disable (default)

Keep set at **No**.

Clock Freq. Shift   No
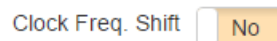
6.19   Status LED Blink Patterns

An LED indicator on the Model 7794A shows system status. The red status LED is located near the bottom left edge of the circuit board (see Figure 5 on Pg. 13 for location). The following table displays the blink patterns that are associated with the operating status of the 7794A IntelliPro:

Table 2. Blink Patterns		
Blink Type	**Pattern**	**Possible Meaning(s)**
Short blink	■ ■ ■ …	Normal operation
Long blink	▬ ▬ ▬ …	7794A cannot communicate with the subscriber
No blink	⊘	7794A not operating properly – return to AES for repair

7.   Supported Formats/Protocols

7.1   Format: Contact ID

The 7794A is fully compliant with the Contact ID (CID) protocol. To configure the 7794A to process CID, select **CID** as the **AP Report Format** type (see Alarm Panel Report Format on page 21 for more details).

7.2   Format: Bosch/Radionics Modem II and Modem III

To configure the 7794A to process modem formats, select **MODEM** as the **AP Report Format** type (see Alarm Panel Report Format on page 21 for more details).

The following table displays the modem format and speed (baud rate) settings for the Modem format.

Table 3. Modem Format and Speed		
Modem Format	**Speed**	**Family Supported**
Modem II	110	D8112G2 D6112
Modem IIe	300	D2212B
Modem III	300	D7412GV2 D7412GV3 D4412 D9412G

Table 4 lists the Bosch/Radionics panels that are supported:

Table 4. Supported Bosch/Radionics Panels		
Panel Model	**Revision Number**	**Format Tested**
D7412GV2	7.08	Modem III
D7412GV3	8.03	Modem III
D8112E1/G1	22	Pulse Only
D8112G2	31.31	Modem II
D6112	4.0	Modem II
D2212B	3.03	Modem IIe
D4412	1.12	Modem III
D9412G	6.6	Modem III

Note: Even if the panel you are connecting to does not show on the list, it doesn't mean that it's not supported.

7.3   Format: Pulse

To configure the 7794A to process pulse formats, select **PULSE** as the **AP Report Format** type (see Alarm Panel Report Format on page 21 for more details).

The supported pulse formats include:

- HSD – Handshake Duration
- HSF – Handshake Frequency
- CF – Center Frequency
- IDT – Inter-Digit time
- IRT – Inter-Round time

Table 5 shows the corresponding values for the different parameters associated with each pulse format.

Table 5. Supported Pulse Formats					
	HSD	HSF	CF	IDT	IRT
Pulse Format	sec	kHz	KHz	sec	sec
Ademco LS (10 pps) (4+2)	0.8	1.4	1.9	0.9	3
Ademco LS (10 pps) (3+1)	0.8	1.4	1.9	0.9	5
Ademco LS (10 pps) (4+1)	0.8	1.4	1.9	0.9	5
Ademco LS Double Round (3+1 Expanded)	0.8	2.3	1.9	1.7	5
Ademco HS Double Round (3+1 Expanded)	0.8	2.3	1.9	0.9	5
Ademco Slow Silent Knight Slow, HS 1400 Hz	0.8	1.4	1.8	1.7	5
Ademco Slow Silent Knight Slow, HS 2300 Hz	0.8	2.3	1.8	1.7	5
Radionics Fast (20 pps) (4+2)	0.4	2.3	1.8	0.7	3
Radionics Fast (20 pps) (4+1)	0.8	2.3	1.8	0.7	3
Radionics Fast (20 pps) (3+1)	0.8	2.3	1.8	0.7	3
Radionics (20 pps) (4+2)	0.8	2.3	1.9	0.7	3
Silent Knight LS Double Round (3+1 Expanded)	0.8	2.3	1.9	1.7	5
Silent Knight HS Double Round (3+1 Expanded)	0.8	2.3	1.9	0.9	5
Silent Knight Fast	0.8	2.3	1.9	0.9	5
Silent Knight (4 + 2)	0.8	1.4	1.9	1.7	5
Universal High Speed, hand shake 1400 Hz	0.8	1.4	1.8	0.7	5
Universal High Speed, hand shake 2300 Hz	0.8	2.3	1.8	0.7	5

* sec = seconds

7.4   Notes on Pulse Formats

Number of Digits on Pulse Format

Pulse format has no selection for the number of digits, since the number is determined when the 7794A interprets the pulse train.

- If six digits are received, it translates into 4+2.
- If five digits are received, it translates in 4+1.
- If four digits are received, it translates in 3+1.

Double Round

Double round sends the same message twice and is automatically detected. This is a method used by some pulse protocols to allow a receiver, the 7794A in this case, to validate the data received.

Translation of 3+1 and 4+1 to 4+2

`1234 56`   arrives at MultiNet as: `1234 56`

`1234 5`   arrives at MultiNet as: `1234 05`

`123 5`   arrives at MultiNet as :   `0123 05`

Expanded Format

We do not recommend using expanded format due to how the messages will reach MultiNet.

When the alarm panel is programmed for expanded format (not to be confused with double round), it sends two trains of pulses (four total, because of the double round), and the 7794A sends the two messages received. This has to be handled carefully with the automation software because the two messages will appear as having two "different" accounts. An expanded format configuration will produce a total of four pulse trains.

1st: `5879 6` (4+1)➔ `6879 06` (4+2)

2nd: `6666 3` (4+1)➔ `6666 03` (4+2)

For instance, with the expanded format, it would send the following two messages, and each one would produce a message with automation software:

`1234 6 1234 6`➔ `1234 06 ACCT 1234 RF 5555 RL=14`

`6666 8 6666 8`➔ `6666 08 ACCT 6666 RF 5555 RL=14`

7.5   Settings for Non-Supported Formats

Some high-speed formats will not work since the 7794A supports only 10 pps and 20 pps formats. However, most alarm panels will "gear down" and lower pulse speed after trying and failing to send data to the 7794A.

The settings in Table 6 are recommended for common high-speed formats when the low-speed fallback is implemented. The 7794A will successfully interpret the data sent by the alarm panel over the phone dialer interface when speed is reduced.

> **Note:** These settings are only for the "fail safe" speed. These settings are not for the actual 33 or 40 pps, which are not supported by the 7794A.

Table 6. Recommend Fail Safe Settings					
	HSD	HSF	CF	IDT	IRT
Pulse Format	sec	kHz	KHz	sec	sec
Radionics Fast Double Round (33 pps)	0.8	2.3	1.9	0.7	5
Radionics Fast (40 pps Double Round)	0.8	1.4	1.8	0.7	5

8.   Testing

Perform the following tests to confirm that the 7794A is properly installed and is functional.

8.1   Installation Checks

Some of the tests to be performed at the installation site require a response from a Central Station person.

- Trigger alarm conditions and confirm that the proper message is received at the Central Station.
- Cause fault conditions and confirm that the proper message is received at the Central Station.

9.   Maintenance, Warranty and Repair

Once installed and normal operation is confirmed, there is typically little maintenance required.

9.1   Troubleshooting

Problems on the circuit board usually require returning the defective unit to AES for service.

9.2   Contact Information

AES Corporation

285 Newbury Street

Peabody, Massachusetts 01960 USA

Website: **http://www.aes-corp.com**

AES corporate Phone: (800) 237-6387 (800) AES-NETS
                         USA (978) 535-7310

Fax: USA (978) 535-7313

Email: Check Website for latest email addresses

10. Revision History

Revision	Date	Notes
1	7/7/2016	Initial version
2	4/27/2017	Included feedback from Tech Support
3	9/20/2018	Revised to add Model 7177

12.   Warranty

OWNER WARRANTY - AES CORPORATION

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