

# *MODEL PAP-32*

## *Program Assignment Panel*

*Up to and including Version 0.0.5*



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Bosch Security Systems, Inc.  
12000 Portland Avenue South  
Burnsville, MN 55337 USA  
Telephone: 877-863-4169  
Fax: 800-323-0498  
Info@rtsintercoms.com

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Bosch Security Systems, Inc. (Lincoln, NE)  
Telephone: 402-467-5321  
Fax: 402-467-3279  
Factory Service: 800-553-5992

Please include a note in the box which supplies the company name, address, phone number, a person to contact regarding the repair, the type and quantity of equipment, a description of the problem and the serial number(s).

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Factory Service Department  
Bosch Security Systems, Inc.  
8601 East Cornhusker Hwy.  
Lincoln, NE 68507 U.S.A.  
Attn: Service

 <p>THE LIGHTNING FLASH AND ARROWHEAD WITHIN THE TRIANGLE IS A WARNING SIGN ALERTING YOU OF "DANGEROUS VOLTAGE" INSIDE THE PRODUCT.</p>	<p><b>CAUTION</b></p> <p>RISK OF ELECTRIC SHOCK DO NOT OPEN</p> <p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER. NO USER-SERVICABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	 <p>THE EXCLAMATION POINT WITHIN THE TRIANGLE IS A WARNING SIGN ALERTING YOU OF IMPORTANT INSTRUCTIONS ACCOMPANYING THE PRODUCT</p>
SEE MARKING ON BOTTOM/BACK OF PRODUCT		
<b>WARNING:</b> APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.		
<b>WARNING:</b> THE MAIN POWER PLUG MUST REMAIN READILY OPERABLE		
<b>CAUTION:</b> TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTER PIN OF THIS PLUG MUST BE MAINTAINED.		
<b>WARNING:</b> TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPRATUS TO RAIN OR MOISTURE.		
<b>WARNING:</b> TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL/RACK IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.		
	This product is AC only.	

## *Important Safety Instructions*

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



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*Introduction*

This manual describes the installation, programming, and operating procedures for the RTS Model PAP-32 Program Assignment Panel. The PAP-32 provides the user with the ability to assign one of up to 16 program sources to up to 16 different IFB destinations. Through the use of standard EKP-32 expansion panels, the PAP-32 can be extended to up to 64 program sources and 64 IFB destinations.

The sum total of PAPs (PAP-32, PAP-952, PAP-950-50) and LCP-102s cannot exceed 15 in a system. The PAP-32 works with ADAM, ADAM CS, Cronus, and ZEUS intercom matrix systems. The PAP-32 is self-contained: key assignments (IFBs and program sources) are maintained by the panel in its own configuration flash, rather than by the intercom (Master Controller, Peripheral Controller, or DBX). AZedit will show which PAP-32 devices are connected. PAP firmware version 0.0.4 and later allows configuration of program sources and the IFB destinations.

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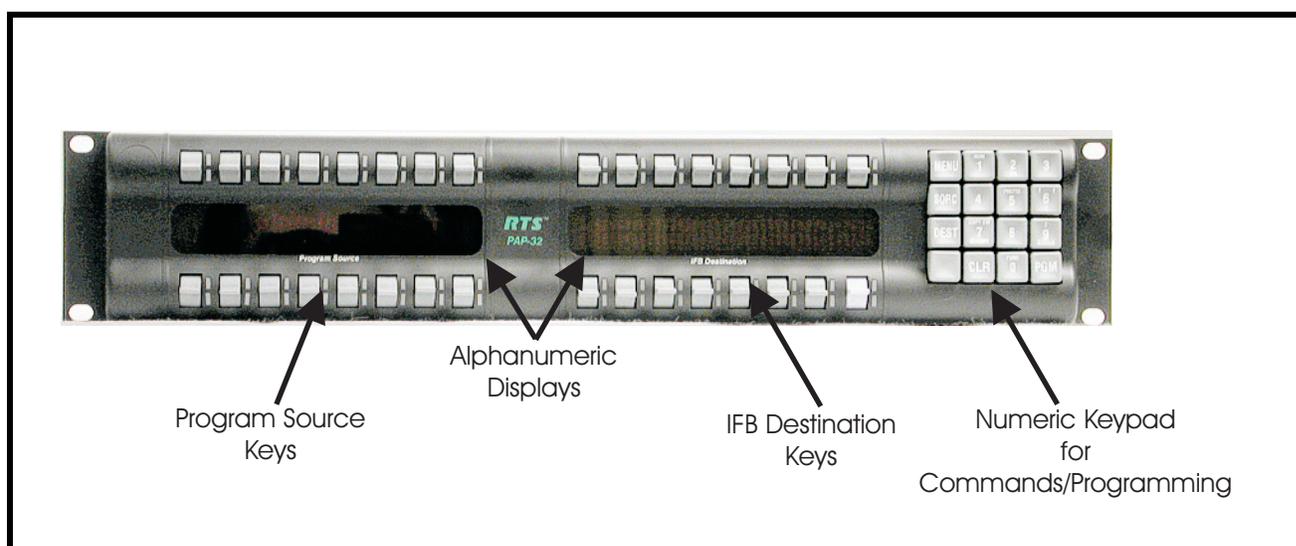
*Features*

FIGURE 1. PAP-32 Front Panel Features

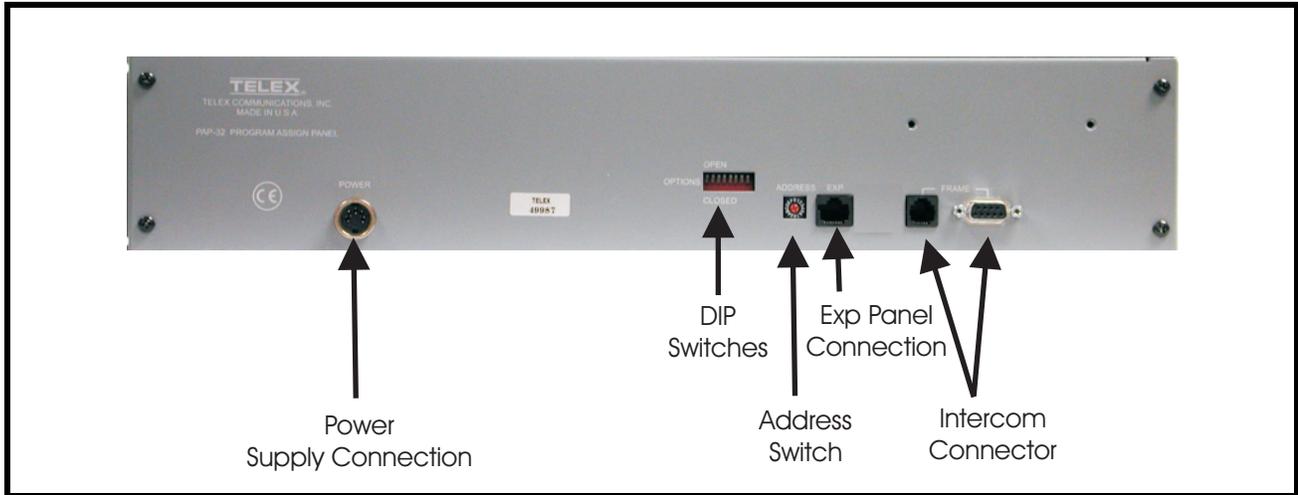


FIGURE 2. PAP-32 Rear Panel Features

## Specifications

### Matrix Connections

- DE-9S Female
- RJ12 Female

### Power Requirements

- 100-240 VAC, 50/60 Hz, 1A

### Environmental

- Operating Temperature
  - 0° C to 50° C
- Storage Temperature
  - 20° C to 75° C
- Humidity (Operating and Storage)
  - 0%-95%, non-condensing

### Dimensions

- 3.44" (88mm) high
- 19" (483mm) wide
- 3.5" (89mm) deep

### Weight

- 5.5lbs (2.5kg)

### Finish

- Thermoplastic front panel, aluminum case and rear panel, light gray finish

### Approvals

- CE

Specifications subject to change without notice.

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# Configuration and Operation

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## Rack Mount Considerations

- Elevated Operating Ambient* - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the **Tma** (Maximum Ambient Temperature) specified by the manufacturer.
- Reduced Air Flow* - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.
- Mechanical Loading* - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.
- Circuit Overloading* - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.
- Reliable Earthing* - Reliable earthing of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

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## Configuration

Configuration is accomplished via the 16-position rotary switch (Address) and the 8-position DIP switch, both located on the rear of the PAP-32. See Figure 2 on page 4 for the location of both switches.

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## Setting Address

A 16-position rotary switch is used to select the polling ID. Valid IDs are 1-15. (Note, letters A through F on the rotary switch represent IDs 10 through 15.) There can be at most one PAP, PAP-32 or LCP-102 at any given ID. Use a small flat blade screw driver to rotate the switch to the desired setting.

## Panel Options

The 8-position DIP switch is used to set options as follows

POSITION	DEFINITION
8	Normally OPEN, when CLOSED forces boot download mode.
7	Reserved for diagnostics, must be OPEN.
6	Unused, should be left OPEN
5	Unused, should be left OPEN
4	Unused, should be left OPEN
3	When CLOSED disables screen saver
2	OPEN is normal mode, CLOSED is multi-source mode
1	CLOSED allows IFBs with default alphas to be scrolled.

## Connections

The PAP-32 connects to the UIO-256/PAP port, J3 on an ADAM system, port 902 on an ADAM CS system, J4 on the Cronus system or port J26 on a Zeus system. The baud rate, as with all UIO-256, PAP, and LCP-102 devices, is fixed at 76.8 K baud.

A cable must be made to connect the PAP-32 to the system.

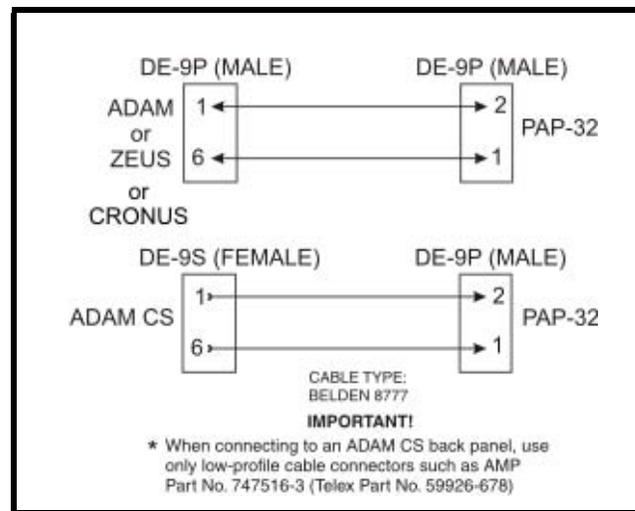


FIGURE 3. PAP-32 D-Sub Cable Diagram

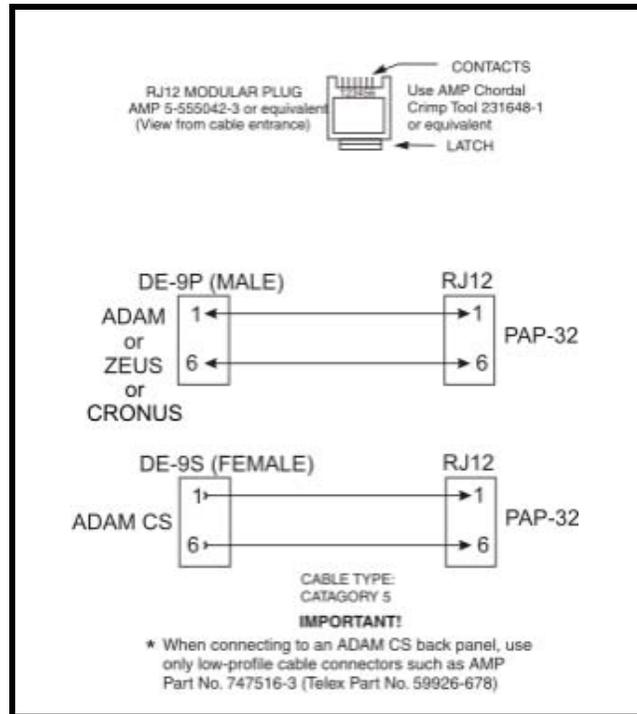


FIGURE 4. PAP-32 RJ12 Cable Diagram

## Operation

The PAP-32 hardware consists of 32-keys, physically separated into two groups of 16 (see Figure 1 on page 3). The left group of keys are used for IFB destinations. The optional expansion panel doubles the number of source and IFB keys.

**NOTE:** Program source buttons represent actual intercom port numbers (inputs). However IFB destination buttons do not represent intercom port numbers (output buses). As with all other PAPs, these buttons represent IFB numbers. The correspondence between an IFB number and an output bus is controlled by editing the IFB definition table in AZedit. Suppose IFB #1 is defined to have #600 as its output bus. When changing this IFB's program input, the PAP-32 refers to IFB #1; it does not refer to port #600.

Each button can have an assignment (a port number, for program sources; an IFB number, for IFB destinations). The panel normally displays the alphas for these assignments. Key assignments are retained by the PAP-32 in non-volatile memory.

The right-most program source key on the lower row (the "scroll key") is treated a bit differently. Its assignment is always cleared when the panel powers up. Its use is similar to that of the standard keypanel's call-waiting window.

All keys are momentary action (ON while held). Latching a key by pressing and releasing it quickly is not supported. For all keys except the scroll key, there is no difference between pushing the lever up and pushing it down. Pushing the scroll key up clears the scroll window.

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### *Viewing the Program Source for an IFB*

Press an IFB destination key which has an IFB assignment (i.e. is not blank). The IFB key's lower LED will be turned ON solid red.

If the specified IFB has a program source, the lower LED for the key which has that program source assigned will turn ON solid red for as long as the IFB key is held on. If the program source for that IFB does not appear on any of the source keys, the source will be displayed in the scroll window, and the scroll window's lower LED will turn ON solid red.

If the specified IFB key is pressed, and the key does not have an assignment, the keypress is ignored.

If an IFB key is pressed, and it does not have an output bus defined (in AZedit), the LED turns ON solid green to indicate that the program input for that IFB cannot be changed.

---

### *Viewing What IFBs a Program Source Feeds*

Press a program source key. The lower LED for that key will be turned ON solid red. Any IFB keys which have that program source assigned will turn ON solid red, for as long as the source key is held on.

The program source may also feed other IFBs which are not assigned on the PAP-32. No indication is provided for those IFBs.

---

### *Changing an IFB's Program Source*

Press and hold an IFB destination key to view what program source is assigned to that IFB. While holding the IFB key, tap a source key. The PAP-32 sends a request to the intercom to change the program source for that IFB to the selected source key. If the source key which is pressed matches the current program source for the IFB, or the source key is blank, the program source for that IFB is removed.

**NOTE:** Suppose neither the current nor the new source appears on any key. When the IFB key is pressed, the current program source will be put in the scroll window. Since the new source doesn't appear on any key, the scroll window must be used to select the new source. This can be handled in any of several ways:

1. Assign the new source to a different key. Then, press and hold the IFB key (current source appears in the scroll window), and tap the new source key.
2. Press and hold the IFB key (current source appears in the scroll window). While holding the IFB key down, use the keypad to scroll to the new source (the scroll window LED turns OFF as soon as you scroll away from the current source), and tap the scroll key.
3. Press and hold the IFB key (current source appears in the scroll window). While holding the IFB key down, tap a source key which is not assigned, to clear the current source. Release the IFB key. Scroll to the new source. Press and hold the IFB key, and tap the scroll key.

---

### *Program Source Changes Made Elsewhere*

Whenever the program source for an IFB changes, if that IFB appears on a key on the PAP-32, the alpha for that key flashes for approximately 15 second. (If a PAP-32 changes a program source, the tally is suppressed for that PAP-32; however, any other PAP-32s connected to the intercom will see the change tally.) Press the IFB key to vie its new program input terminates the alpha flash.

## *Assigning Source and IFB Keys*

NOTE: When a key is programmed, by entering a programming sequence or by copying the scroll key to it, its LED turns ON green to indicate the key is being programmed. The key must be released and pressed again in order to see information about its assignment (e.g. For an IFB key, to see what program input is feeding it).

### **Direct Assignment**

To directly assign a source key, enter “1” (“NUM”), followed by the port number (1 to 3 digits), followed by “PGM”, and tap a source key. The key will be assigned to that port. A port number of 0 is used to clear any existing assignment.

To directly assign IFB key, enter “0”, “2” (“Function -IFB”), followed by the IFB number (1 to 3 digits), followed by “PGM”, and tap a destination key. The key will be assigned to that IFB. An IFB number of 0 is used to clear any existing assignment.

### **Scrolling**

Press either the “Source” key on the keypad (to scroll through available program sources) or the “Dest” key (to scroll through IFBs). The first item of the requested list is shown in the scroll window. The scroll keys can be used to step through the list. Normally, scrolling is one item at a time. Pressing “5” (“Prefix”) enters prefix scroll mode, in which groups of alphas with the same 2-character prefix, are skipped. Pressing CLR or PGM cancels prefix scroll mode and reverts to normal scroll mode.

When the requested assignment is displayed, press 7 (copy), and then tap the key to which the assignment is to be copied. Alternatively, for program sources only, the key can be used while it is in the scroll window, without copying. The scroll key can be cleared, if desired, by pressing it up briefly.

When scrolling through program sources, the only ports which are displayed are those for which the “LCP-102 scroll enable” box is checked in AZedit. By default, the first 200 ports are LCP-102 scroll enabled. However, if a port has been assigned to a key, the assignment remains even if the port is subsequently scroll restricted.

### **Changing Setup Pages**

To change the setup pages for either PAP or IFB side of the panel using the keypad, do the following:

1. On the keypad, tap **8**.
2. Tap the **number of the page** (for example, 1, 2, 3, upto page 8).
3. Tap **PGM**.
4. Tap a **talk key** (tap down) in IFB or program side of the display to change that assignments page.

---

## *Menu Functions*

Only a very limited number of menu functions would be available:

### **Display**

#### *Display / Item #s*

Changes the display so that item numbers are shown instead of the Alphas(e.g. “N209” for a source; “IF17” for an IFB). The display reverts to the standard alphas after 15 seconds, or when the Clear key is pressed.

#### *Display / Panel ID*

Shows the polling ID of the PAP-32 (in the range 1 through 15).

### ***Display / Setup Pages***

Shows the pages allocated to the PAP32 and EPAP32 panels.

Displayed as:

MN/PGM: 1  
MN/IFB: 1  
X1/PGM:  
X1/IFB:  
X2/PGM:  
X2/IFB:  
X3/PGM:  
X3/IFB:

### ***Display / Version***

Shows the version of PAP-32 firmware

## **Service**

### ***Service / Display Dim***

Allows the brightness of the fluorescent displays to be adjusted.

### ***Service / Mod Assign***

Allows module assignments to be set for expansion panels.

### ***Service / Reset Cfg.***

Resets the PAP-32. This just clears all existing source and IFB assignments.

### ***Service / Test Panel***

Puts the panel in test mode, so that operation of the keys, LEDs, keypad, and fluorescent displays can be verified.

A Service/Save Cfg menu item is not provided because any setup change will automatically be saved to configuration flash.

## **NOTES:**

1. Pressing more than one IFB key or more than one program key at the same time is an invalid operation. In this case, the LEDs of all pressed keys turn green to indicate the operation is not supported. All keys must be released before normal panel operation will resume.
2. The PAP-32 saves its key assignment in non-volatile memory. When the PAP-32 powers up, in a different system than it was last connected to, it is possible for some of its key assignments to be out of range (port number or IFB number too large). In this case, the alpha display for the key shows “???”.

*Notes*



## EPAP -32 Expansion Panel

### Introduction

The EPAP-32 expands the number of assignments for a PAP-32 from 32 assignments to 64 (32 additional assignments).

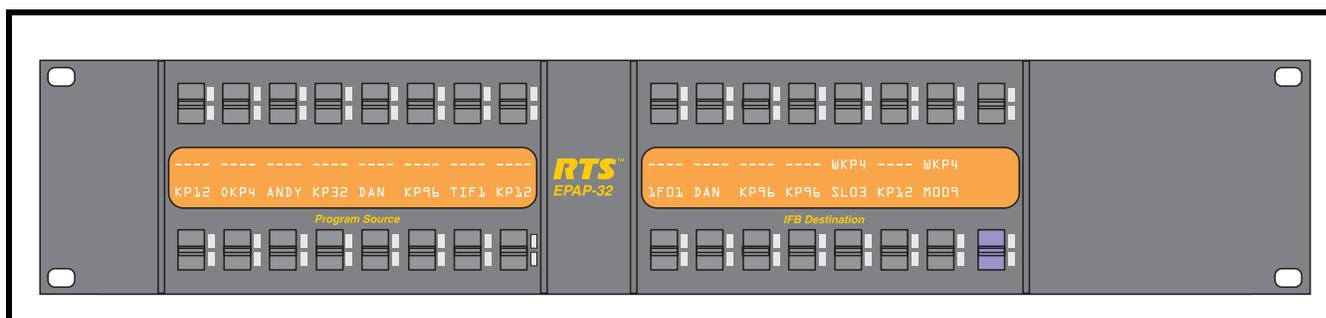


FIGURE 5. EPAP-32 Unit

The **EPAP-32** (Expansion Program Assist Panel) is connected to a PAP-32 panel as shown in the diagram below. The EPAP-32 functions like an extension of the PAP-32 panel. You can connect up to three (3) EPAP-32 to a single PAP-32. This gives 64 inputs, as well as 64 outputs in total. Consult the PAP-32 user manual (p/n 9350-7704-000) for additional information about the operation and use of the panel.

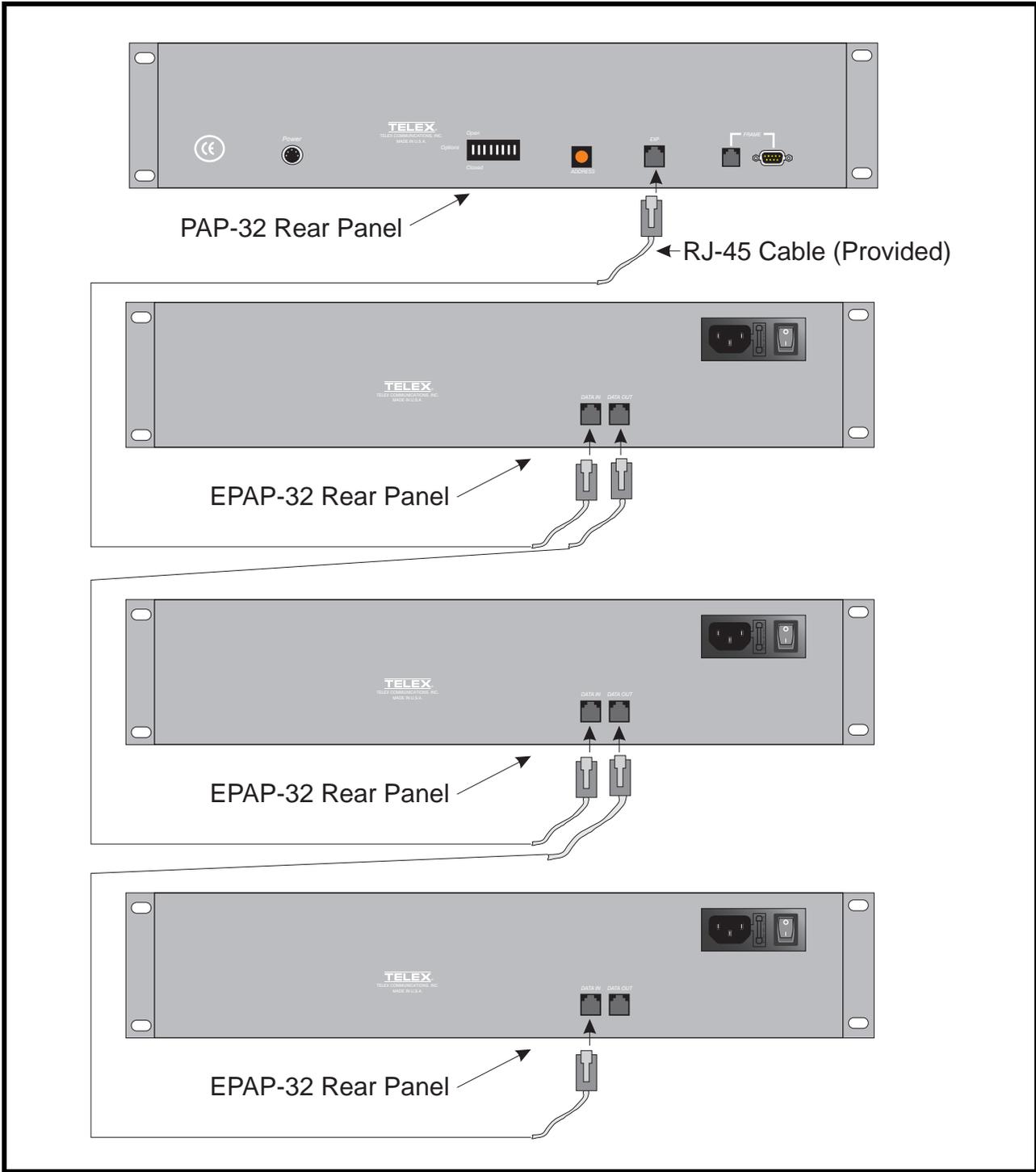


FIGURE 6. PAP and EPAP connection diagram

*Notes*

