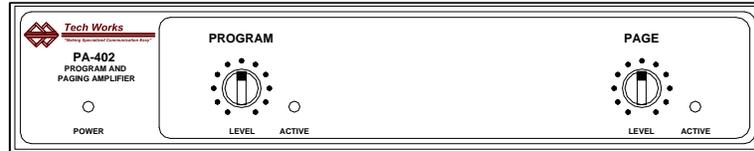# PA-402 QUICK REFERENCE GUIDE

The PA-402 is designed especially for **Background Music, and Paging** Applications.
The PA-402 has a **Program Audio Input**, and a **Paging Audio Input**. A **Control signal select** which **Audio inputs** are **directed to the Speaker**. These inputs are transformer balanced allowing several PA-402's to be connected in tandem, at various locations, for large distributed systems. There is also an unbalanced Stereo Input for "Local" Music insertion

Front Controls and Indicators:

Power:

        Off, when no power
        Red, when voltage is too low
        Green, when operating normally

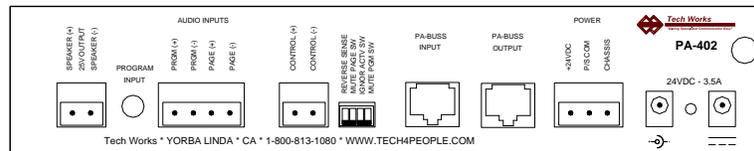**Program 'Level':** Sets 'Program/Music' audio level

Program Active: Green, when 'Program' is Output

Page 'Level': Sets 'Paging/Communications' audio level

Page Active: Green, when 'Page' is Output

Rear Panel Connectors:

Audio Output Connector - 2 positions, Euro-Style Connector, 5mm Spacing**:** Speaker (+), Speaker (-)

'Program' Stereo Audio Connector:

        3.5mm Phone Jack
        Internally summed to a Monaural Signal
        Un-Balanced (Earth Isolated)
        Tip (+) and Ring (+), Sleeve is (-, Common)
        Tip and Ring are summed

       When the plug is inserted the other Program inputs are disconnected

Audio Input Connector (Four positions, Euro-Style Connector, 5mm Spacing)**:**
        Transformer Balanced (Ground Isolated)
        Program input (+)
        Program input (-)
        Paging input (+)
        Paging input (-)

Logic Control Inputs:
        Switch Common: Sensing for Switches, or PLC
        Page Switch: Active Low, momentary or sustained

Tech Works ®

"Making Specialized Communication Easy"

PA-BUSS, Amplifier Buss, Connectors (Two RJ-45 Connectors):
        Power Output (Jumper) Option, Input Connector Only,
        Pins 1(+) & 2(-) Current Limited
        Program Buss, Input and Output, pins 3(+) & 6(-), Transformer Balanced
        Paging Audio Input & Output, pins 4(+) & 5(-), Transformer Balanced
        BUSS Active, Paging Logic Input, & Output, pins 7(+) & 8(-), Optically Isolated
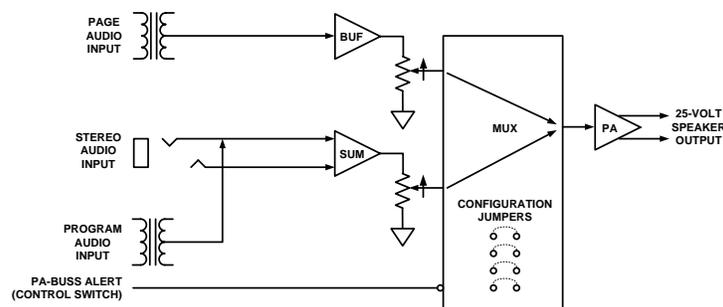
Power Connectors:
        Three position, Euro-Style Connector, 5mm Spacing
        +24 VDC,   Positive P/S input
        P/S Common,   Negative P/S input
        Chassis
        Two, 'Barrel' type, connected in Parallel
        Outside (-), Center pin (+), 24 Volts, DC
        Outside Diameter 6.5mm ; Center Pin, 2mm

Chassis: Hex nut, Earth Ground
The Chassis is connected to Circuit Common through a 1-Meg-Ohm resistor

PA-402 SIMPLIFIED BLOCK DIAGRAM

Setup Adjustments:
The **PA-402** has **two Level adjustments** for the audio, one for each source. Once they are setup, these settings should never need to be adjusted by the user.

Program Input:
The Audio source is usually from a Non-Tech Work source *See '...Other Audio sources' above.* The Program level is usually set to an audio level below the Paging level (the definition of 'Background' Music).

If the **Source has Headphone Output, c**onnect a TRS patch cord to the Stereo Jack on PA-402. The 'Program Level' of the PA-402 should be set to maximum. Set the desired Audio Output level with the level control on the sound source.

PA-BUSS Interface Applications:
The PA-BUSS allows easy connection to other Tech Works Products
Standard CAT-6 wiring is used to connect units

The **listening level is determined by both the "Level Control" and the Power Tap on the Speaker.** If the Listening level is too low with the "Level" control fully clockwise, change to a higher power tap on the speaker. *The total power of all the attached speaker must be less than 40-Watts.* Conversely, if the control must be set very low, to achieve a suitable listening level, the Power tap is set too high.

Paging Input:
When the **PA-402 is used with a PA-BUSS Monitor output**, the PA-402 'Page" control should be set fully clockwise, and the Monitor output "Level" control should be used to set the listening level.

When **used with Tech Works ICA-202D**, the PA-402 Paging Input would connect to the Paging, line output, of the ICA-202D.   The ICA-202D output is 0dBm, so the "Page" control of the PA-402 should be used to set the desired Audio Output level. The Audio Control should not be set into the last three red dots.