



**RDL**<sup>®</sup>  
Radio Design Labs

SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

## TWISTED PAIR FORMAT-A



### Models AF-TPS2A, D-TPS2A, DS-TPS2A & EM-TPS2A Format-A Two-Pair Senders

- Two Unbalanced -10 dBV Phono Jack Audio Inputs
- Left (L) Input Feeds Pair B; Right (R) Feeds Pair C
- Signal and Power Pair Pass-Through on RJ45 Jacks
- Remote Powering through Twisted Pair Cable
- Fused Local Power Feeds all Connected Modules
- Local Power Input on Terminal Block
- Blue LED Indicates Module is Powered
- Daisy-Chain with Single-Pair or Two-Pair Senders
- Studio-Quality Precision Active Balanced Circuitry

The -TPS2A modules are two-pair audio sending modules compatible with RDL Format-A twisted pair products. These modules are designed to be mounted in wall boxes, cabinets or other enclosures that allow users to connect audio sources. The D- and DS- models mount in RDL WB-1U and WB-2U wall boxes, or in standard U.S. electrical boxes. The D-TPS2A features a white front-panel laminate with gray lettering that matches RDL Decora®-style remote controls. The DS-TPS2A is constructed of stainless steel to coordinate with RDL Decora-style stainless steel remote controls in commercial/industrial installations. The AF-TPS2A is an APPFLEX™ series product that is compatible with various APPFLEX wall-mount, cabinet-mount and tabletop enclosures. The EM-TPS2A is a 45mm square module that fits the European Modular mounting frames and cover plates. European electrical boxes are not sufficiently deep to accommodate RJ45 jacks and plugs, therefore the EM- products connect to the twisted pair cable through a detachable terminal block.

**APPLICATION:** The -TPS2A modules feature two RCA phono jack inputs, one for the left channel source and one for the right channel source. These inputs are designed to receive standard -10 dBV consumer level signals. The input signals are amplified using studio-quality preamplifiers optimized for normal operating levels. The buffered left and right inputs are routed to output cable pairs B and C. These modules drive only two cable pairs, therefore they accept a signal and power from one mic-level or line-level Format-A single-pair sender. The D-, DS-, and AF- modules have a second RJ45 jack for an input cable. Installers simply connect the conductors of two cables in parallel on the EM- model terminal block. One single-pair sender may be chained with the -TPS2A. A single-pair sender must be set to feed pair A if it is connected together with the -TPS2A. The power pair and all three audio pairs are fed through both rear-panel RJ45 jacks. The -TPS2A may be powered directly from a 24 Vdc power supply using the detachable terminal block. Local power connected to the module is also fed to all connected remote modules. The -TPS2A may be remotely powered through the twisted pair cable from any other module, signal distributor or RDL power inserter connected to the same twisted pair cable. Module power is indicated by a front-panel LED.

RDL FORMAT-A features superior audio performance that rivals or exceeds shielded wiring. Design simplicity, ease of installation, unsurpassed flexibility, automatic fused power, exceptional hum rejection, low noise, and low distortion provide designers and installers the optimum choice in economical twisted pair products.

# FORMAT-A TWISTED PAIR

## Models AF-TPS2A, D-TPS2A, DS-TPS2A & EM-TPS2A

### Format-A Two-Pair Senders

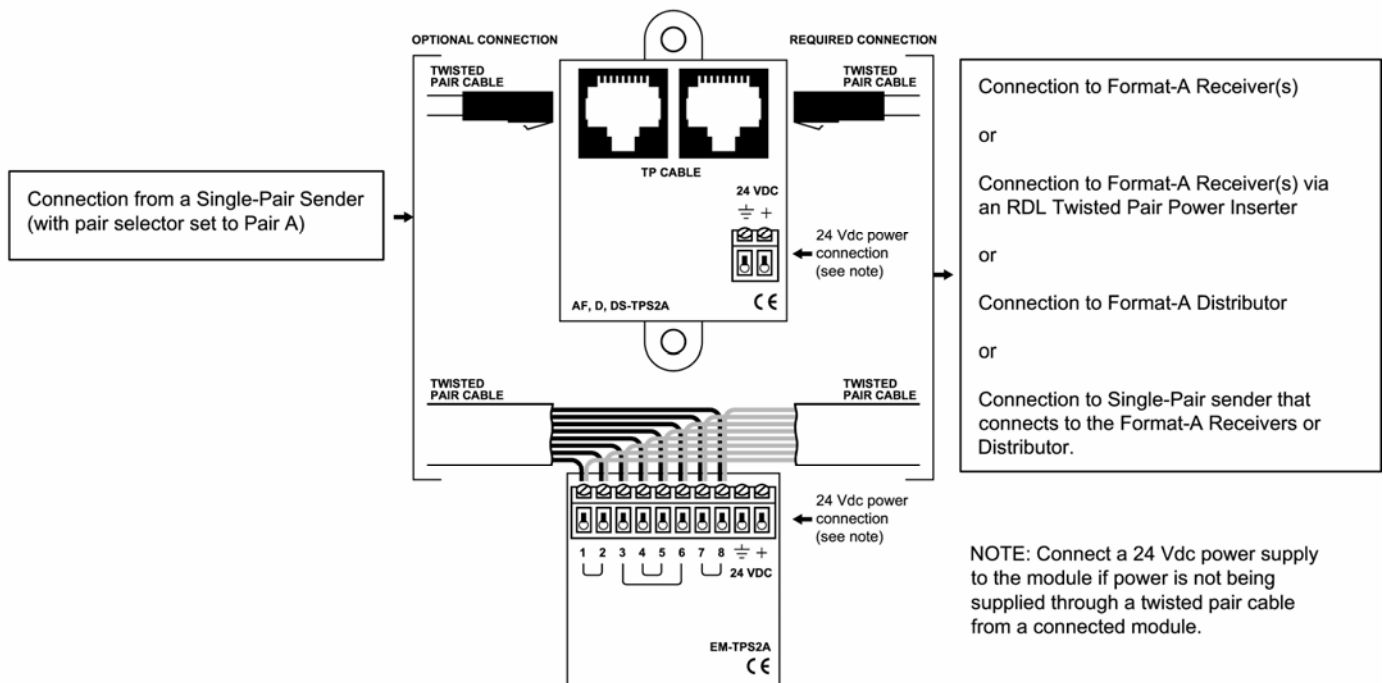
## Installation/Operation



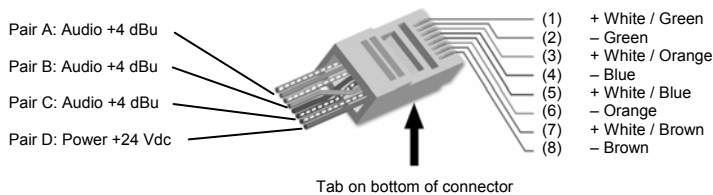
EN55103-1 E1-E5; EN55103-2 E1-E4  
Typical Performance reflects product at publication time exclusive of EMC data, if any, supplied with product. Specifications are subject to change without notice.

**STEP 1:** Connect 24 Vdc to the power input terminals if this module is not being powered through the twisted pair cable from another module, or if this module is located an excessive distance from the next powered module on the cable. Note: The front-panel power LED will be illuminated if this module is powered. If this module is powering other modules through the cable and if there is a wiring short, the short must be cleared then power must be turned off to this module for 10 seconds to reset the internal protection circuit.

**STEP 2:** Connect the twisted pair cable(s) and fasten the module in its mounting box.

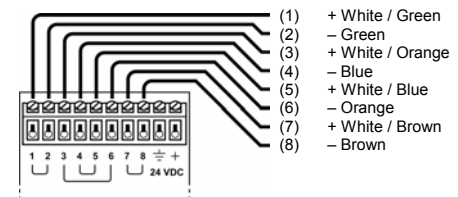


### RJ45 Standard wiring



RJ45 conductor colors shown are for 568A standard. The 568B standard may be used if the connectors at both ends of the cable are wired identically.

### EM Terminal Block Standard wiring



#### TYPICAL PERFORMANCE

Inputs (2): 10 kΩ Unbalanced  
Input Connection: RCA Phono  
Input Level: -10 dBV Unbalanced; +10 dBV Maximum  
Format-A Signal Pairs Used (2): B (Left); C (Right)  
Gain: 12 dB  
Format-A Input: RJ45 (not applicable to EM-)  
Output: RDL TP Format-A  
Output Connection: RJ45 (Models D-, DS-, AF-); Detachable Terminal Block (Model EM-)  
Frequency Response: 20 Hz to 50 kHz (+/- 0.5 dB)  
THD+N: < 0.05% (20 Hz to 50 kHz); < 0.005% (1 kHz)

Noise below +4 dBu: < -95 dB  
Crosstalk: < 90 dB (1 kHz); < 75 dB (20 Hz to 20 kHz)  
Headroom above +4 dBu: > 18 dB  
Indicator: Power In  
Power Connections (2): Detachable Terminal Block; RJ45  
Power Requirement: 24 Vdc @ 65 mA plus connected loads  
Maximum Load Current: 135 mA  
Dimensions: EM-TPS2A: 1.77" (45 mm) W and H; 1.93" (4.9 cm) D  
D-, DS-TPS2A: 1.6" (4.06 cm) W; 4.11" (10.45 cm) H; 1.89" (4.8 cm) D  
AF-TPS2A: 2.22" (5.64 cm) W; 2.77" (7.04 cm) H; 1.89" (4.8 cm) D  
Mounting Box Minimum Depth: 2.4" (Models D-, DS-, AF-); 39 mm (Model EM-)