SPECIALISTS IN PRACTICAL PRECISION ENGINEERING™

TWISTED PAIR FORMAT-A

AF-TPR1A   D-TPR1A   DS-TPR1A   EM-TPR1A

Models AF-TPR1A, D-TPR1A, DS-TPR1A & EM-TPR1A
Format-A Single-Pair Receivers

• Balanced Mic or Line Level XLR Output
• Switch-Selectable Output Level on Rear Panel
• Switch Selects which Pair (A, B or C) Feeds the Output
• Signal and Power Pair Pass-through on RJ45s
• 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 Additional Format-A Receivers
• Studio-Quality Precision Active Balanced Circuitry

The -TPR1A modules are single-pair audio receiving 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 external equipment. The D- and DS- models mount in RDL WB-1U and WB-2U wall boxes, or in standard U.S. electrical boxes. The D-TPR1A features a white front-panel laminate with gray lettering that matches RDL Decora©-style remote controls. The DS-TPR1A is constructed of stainless steel to coordinate with RDL Decora-style stainless steel remote controls in commercial/industrial installations. The AF-TPR1A is an APPFLEX™ series product that is compatible with various APPFLEX wall-mount, cabinet-mount and tabletop enclosures. The EM-TPR1A 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 -TPR1A modules feature an XLR output jack. A rear-panel switch set during installation determines which of the three FORMAT-A pairs is buffered to feed the module output. The audio signal received from the selected pair of the RJ45 INPUT jack feeds the XLR audio output jack. The output level from the XLR jack is set to either MIC or LINE level during installation using a rear-panel switch. This module receives signal from only one cable pair, so the D-, DS-, and AF modules have a second RJ45 jack to connect cables to additional receiver modules. Installers simply connect the conductors of two cables in parallel on the EM- model terminal block. Two other single-pair receivers may be chained to the second RJ45 jack, or a single two-pair receiver may be connected. In addition to completing the reception of signals from all three FORMAT-A pairs, additional receivers may be connected to the same twisted pair feed. The bridging input circuits used in all FORMAT-A twisted pair receivers allow connection of up to 10 receiver outputs for each cable pair. The possibility of multiple receiver locations adds enormous flexibility in the design of audio routing systems using RDL FORMAT-A products. The power pair and all three audio pairs are fed through both rear-panel RJ45 jacks. The -TPR1A may be powered directly from a 24 Vdc power supply using the rear-panel detachable terminal block. Local power connected to the module is also fed to all connected remote modules. The -TPR1A 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.

TWISTED PAIR FORMAT-A
Models AF-TPR1A, D-TPR1A, DS-TPR1A, EM-TPR1A
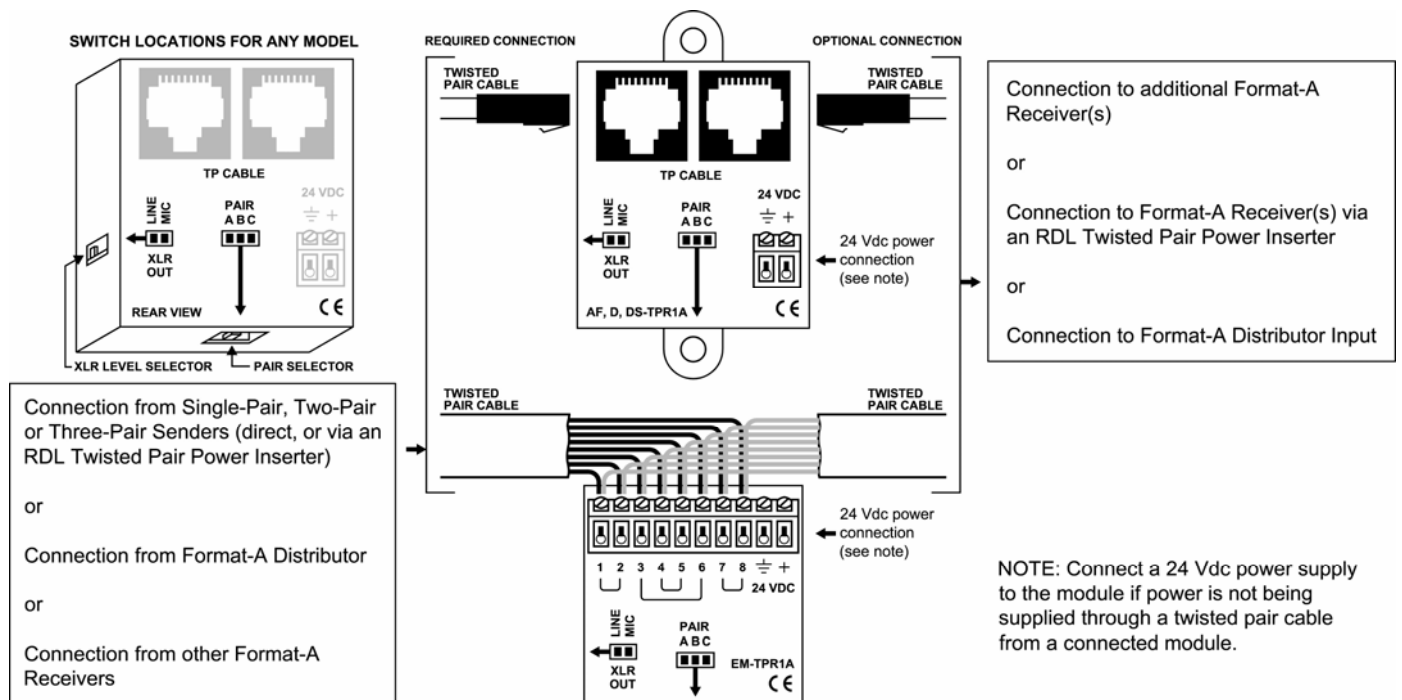## Format-A Single-Pair Receivers

Installation/Operation

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.
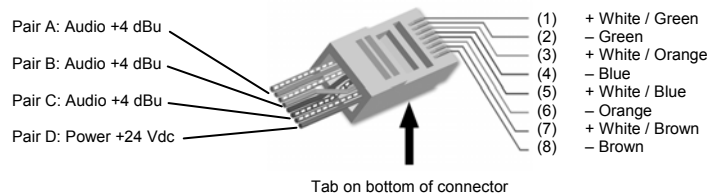
STEP 2: Set the PAIR selector so the module is receiving signal from the desired pair A, B or C of the Format-A cable.

STEP 3: Connect the twisted pair cable coming from Format-A senders or distributors.

STEP 4: Connect the twisted pair cable feeding additional Format-A receiver(s), if any, and fasten the module in its mounting box.
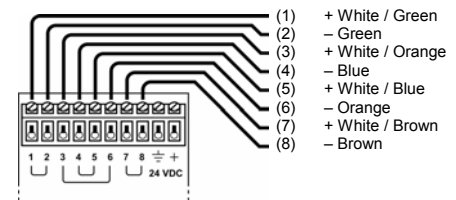

RJ45 Standard wiring

Pair A: Audio +4 dBu
Pair B: Audio +4 dBu
Pair C: Audio +4 dBu
Pair D: Power +24 Vdc

(1) + White / Green
(2) – Green
(3) + White / Orange
(4) – Blue
(5) + White / Blue
(6) – Orange
(7) + White / Brown
(8) – Brown

Tab on bottom of connector

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

(1) + White / Green
(2) – Green
(3) + White / Orange
(4) – Blue
(5) + White / Blue
(6) – Orange
(7) + White / Brown
(8) – Brown

TYPICAL PERFORMANCE

Input:	RDL Format-A
Input Connection:	RJ45 (Models D-, DS-, AF-); Detachable Terminal Block (Model EM-)
Format-A Signal Pair Used:	Switch-selectable A, B, or C
Format-A Output:	RJ45 (not applicable to EM-)
Output:	150 Ω balanced
Output Connection:	XLR
Output Level:	-45 dBu Mic or +4 dBu Line Level, Switch-selectable on rear panel
Frequency Response:	10 Hz to 50 kHz (+/- 0.1 dB)
THD+N:	< 0.005%
Noise below +4 dBu:	< -90 dB
Headroom above +4 dBu:	> 18 dB
CMRR:	> 80 dB (50 Hz to 150 Hz)
Indicator:	Power In
Power Connections (2):	Detachable terminal block; RJ45
Power Requirement:	24 Vdc @ 45 mA plus connected loads
Maximum Load Current:	155mA
Dimensions:	EM-TPR1A: 1.77" (45 mm) W and H; 1.93" (4.9 cm) D
	D-, DS-TPR1A: 1.6" (4.06 cm) W; 4.11" (10.45 cm) H; 1.89" (4.8 cm) D
	AF-TPR1A: 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-)