

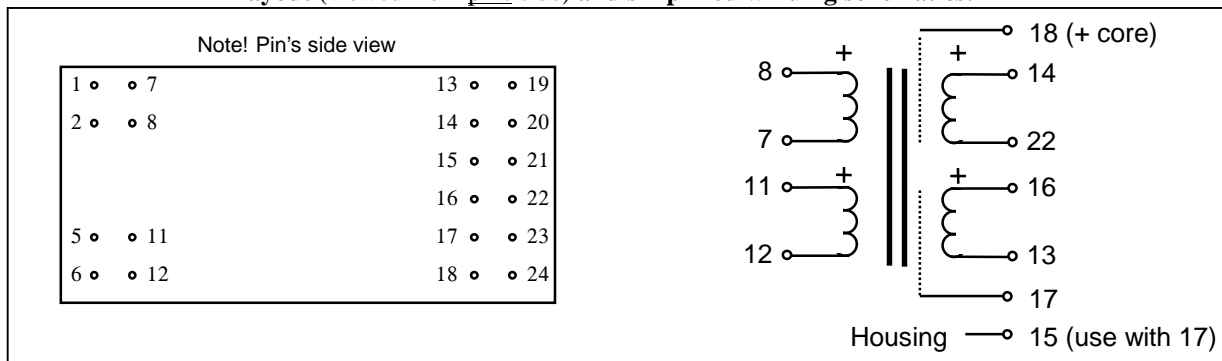
LL7904 High Level Splitting Transformer

In many splitting applications, the splitting transformer must have a high immunity to input common mode signals, to stray magnetic fields from e.g. power transformers and to large ground potential differences in receiving systems. The LL7904 is developed to handle those types of problems. When designing the LL7904, we have used our well-established two-coil structure to create a transformer with a high degree of symmetry. The transformer is built up from two primary windings (which should be used in parallel) and two secondary windings. Each secondary winding is built up from two sections, one from each coil and is surrounded by its own electrostatic shields. The symmetric structure results in an internal cancellation of noise signals caused by external magnetic field (humbucking). It also increases immunity to ground noise between secondary systems and reduces the effects of input common mode signals. The transformer is housed in a mu-metal can and is impregnated in solventless epoxy resin.

Turns ratio:

$$1 + 1 : 1 + 1$$

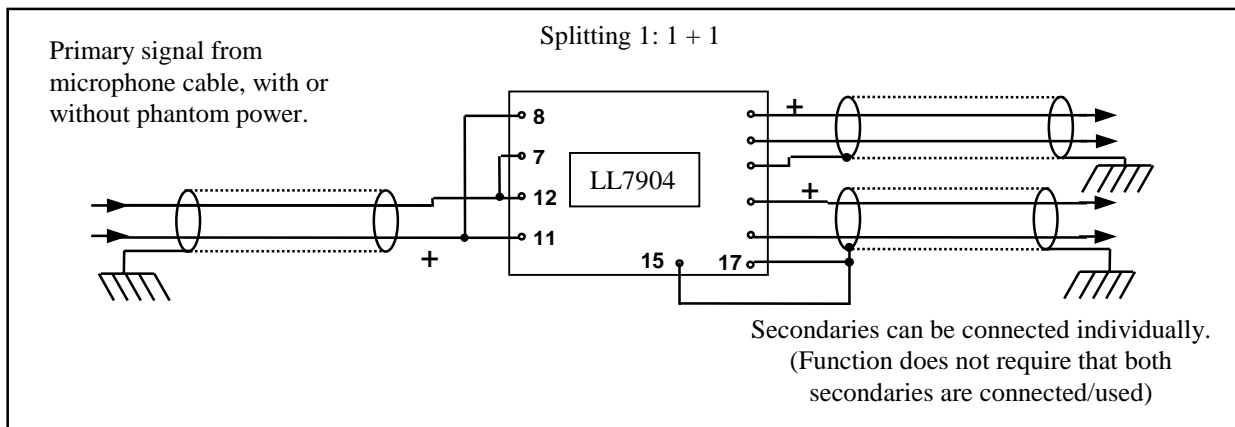
Pin layout (viewed from pins side) and simplified winding schematics:



Spacing between pins	Spacing between rows of pins	Recommended PCB hole diameter:
5.08 mm (0.2")	5.08 / 45.72 mm (0.2 / 1.8")	1.7 mm

Dimensions (Max. L x W x H above PCB(mm))	66 x 32 x 21
Weight:	155 g
Static resistance of each primary:	55 Ω
Static resistance of each secondary (Pins 14 - 22 and pins 16 - 13 resp.):	43 Ω and 66 Ω
Distortion	0.1% @ +16 dBu, 50 Hz < 1% @ +23 dBu, 50 Hz
Frequency response (Ref : 0 dBu, 1kHz)	10 Hz -- 80 kHz +/- 0.5 dB
Test arrangement: Parallel input - parallel output . Source 150Ω , load 10 kΩ	
CMRR at 20 kHz (Source 600 ohms, load 2 x 10k)	> 60 dB
CMRR at 20 kHz from sec. to sec. (Source 600 ohms, load 2 x 10k)	> 40 dB
Isolation test primary - secondary / secondary - secondary / 18 - (15+17)	4 kV / 2 kV / 1 kV RMS

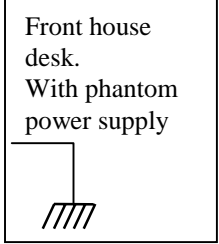
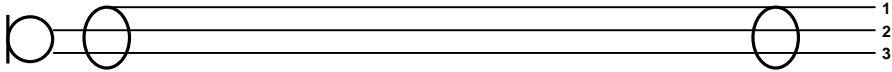
Application example.



R001110

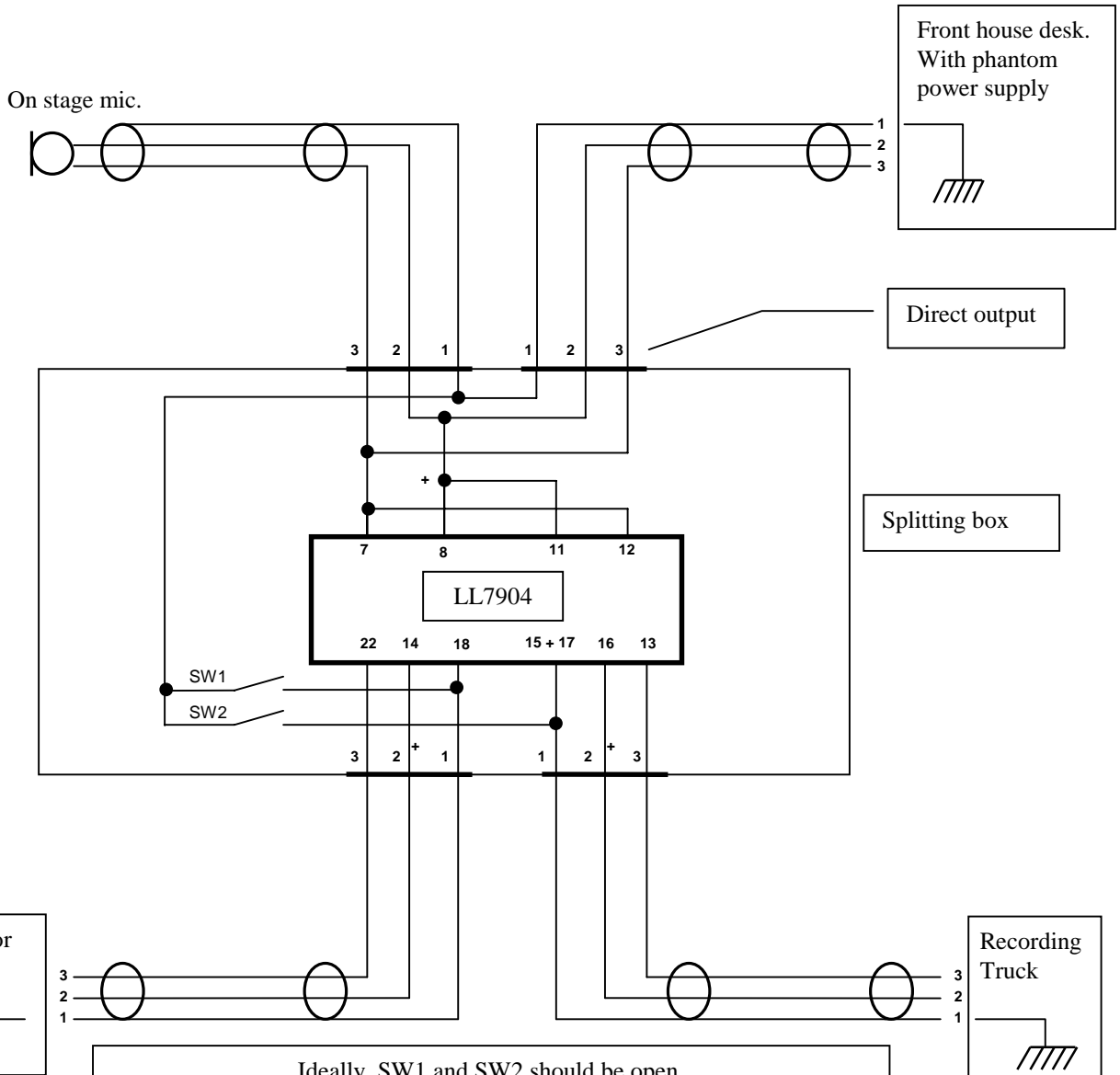
LL7904 application example.
1 + 2 Out Splitting box

On stage mic.



Before connecting splitting box

With splitting box



Ideally, SW1 and SW2 should be open.
Close SW1 and / or SW2 when E1 and / or E2 do not receive ground reference from Monitor desk or from Recording truck respectively.