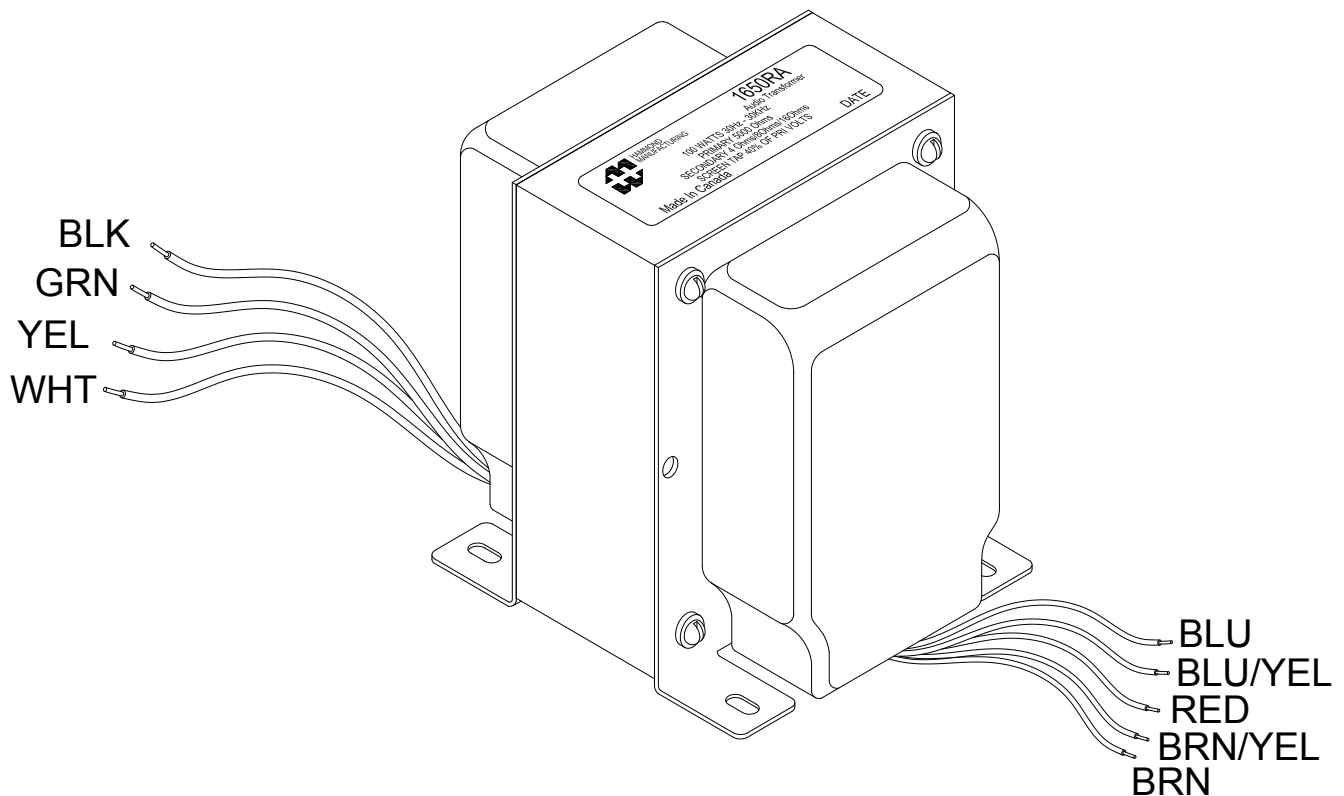


1650RA

HI-FI AUDIO OUTPUT MULTIPLE SECONDARY TRANSFORMER

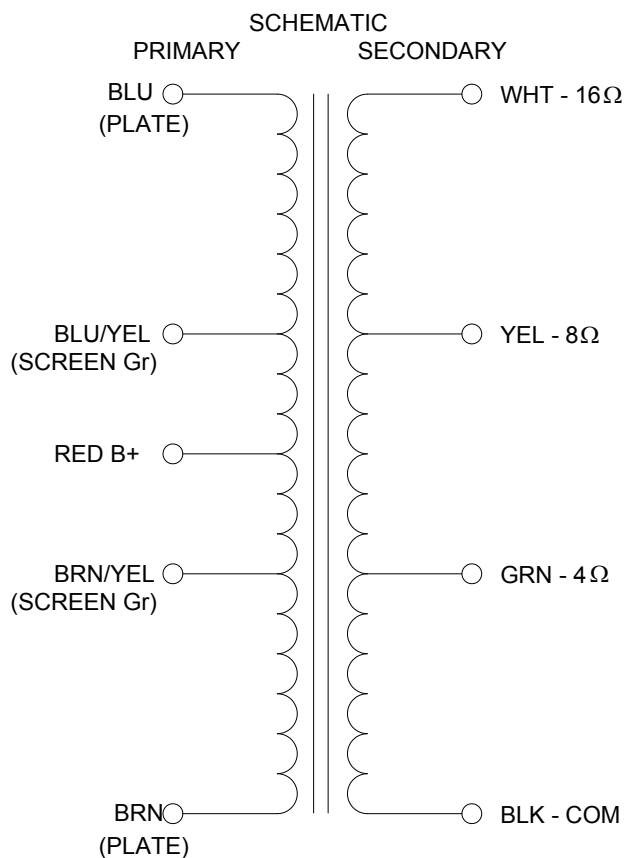
- NEW & improved version of our 1608-1650 Series multiple secondary output transformers (Re-designed secondaries for easy hook-up of secondary loads).
- Designed for push-pull tube output circuits.
- Units are designed to provide ample "headroom" at bass frequencies (Note the weight of each transformer).
- All models have a secondary tapped for 4, 8 or 16 ohm outputs.
- Enclosed (shielded), 4 slot, above chassis Type "X" mounting.
- Manufactured with plastic coil forms for coil support and insulation.
- Frequency response 30Hz. to 30Khz. at full rated power (+/- 1db max. - ref. 1Khz) minimum.
- Insulated flexible leads 8" min.
- Included 40% screen taps for Ultra-Linear operation (if desired).
- Typical applications - Push-Pull: triode, Ultra-Linear pentode, pentode and tetrode connected audio output.



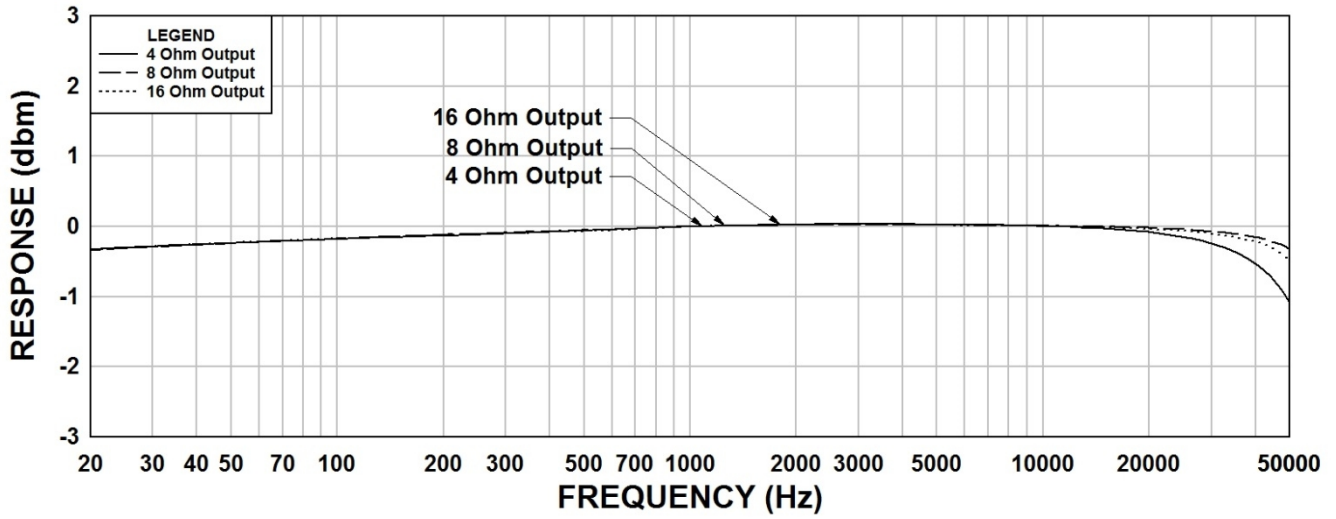
*For Full Dimensional Details see page 4

1650RA ELECTRICAL SPECIFICATIONS****Schematic and Hook Up Data**

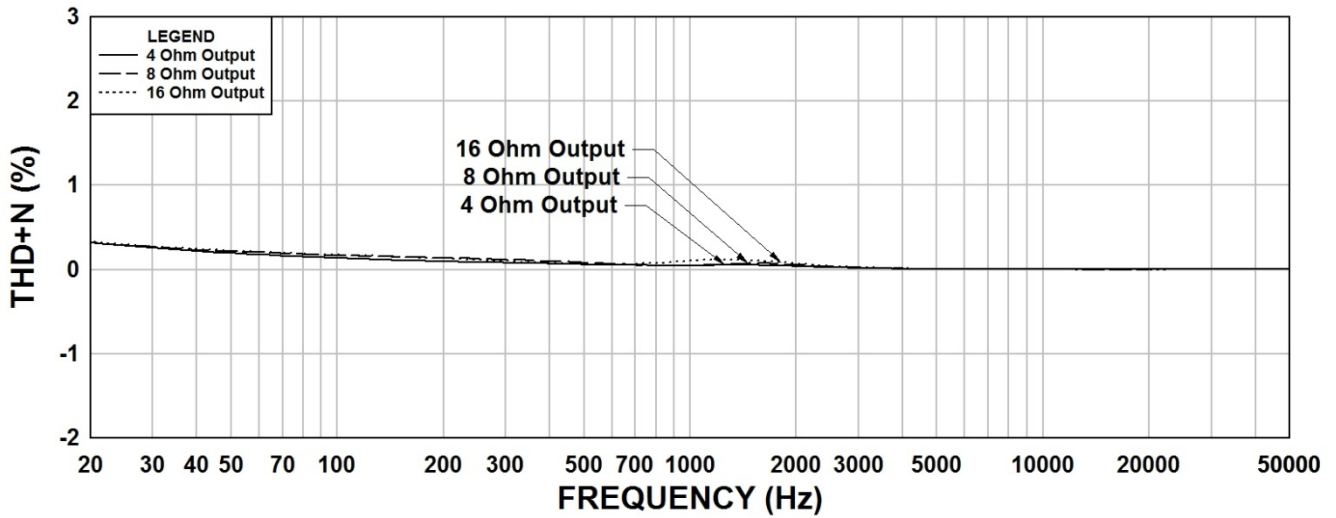
Characteristic	Typical
Input Impedance	5000Ω
Output Impedance	4Ω/8Ω/16Ω
Output Power	100Watts
Primary - DCR	
Blue – Brown	105.6Ω
Secondary DCR	
Black – Green	224mΩ
Black – Yellow	294mΩ
Black – White	384mΩ
Leakage Inductance	@ 1.0kHz, 1.0V SC
Primary – Blue – Brown	170.4mH
Inductance	@ 1.0kHz, 1.0V OC
Primary – Blue – Brown	14.6Hy
Black – Green	162.2mH
Black – Yellow	182.4mH
Black – White	208.6mH
Impedance	@ 1.0kHz, 1.0V OC
Primary – Blue – Brown	91KΩ
Black – Green	309.9Ω
Black – Yellow	561.4Ω
Black – White	897.4Ω
Frequency Response	See graphs for specific response, Typ. ±1.0db from 30Hz to 30KHz
Dielectric Strength	2500Vrms
Temperature Range	-40 To 105°C



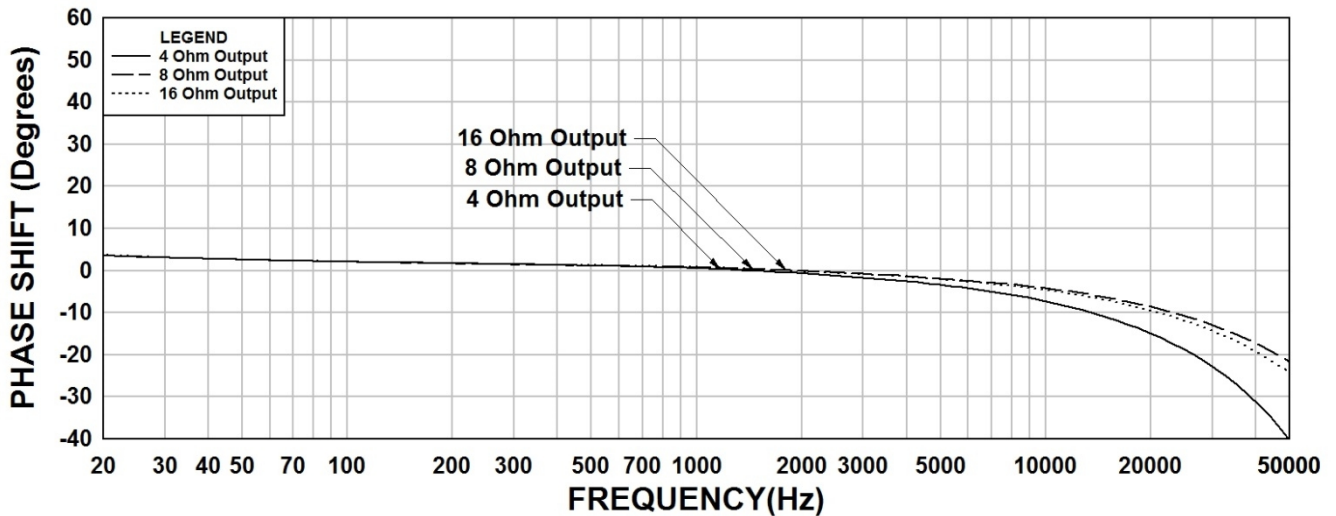
1650RA FREQUENCY RESPONSE $R_s = 5K$ Ohms



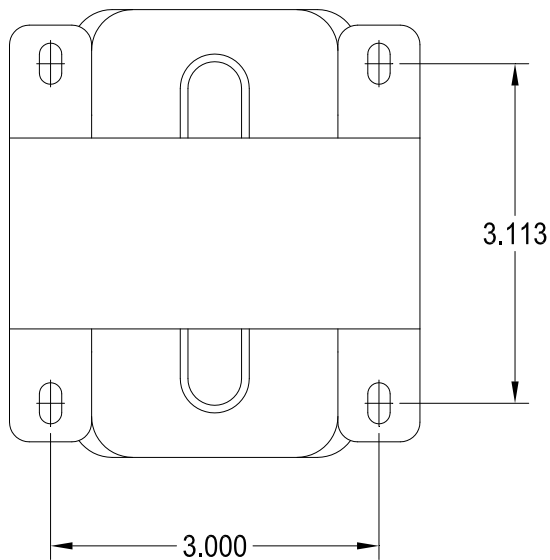
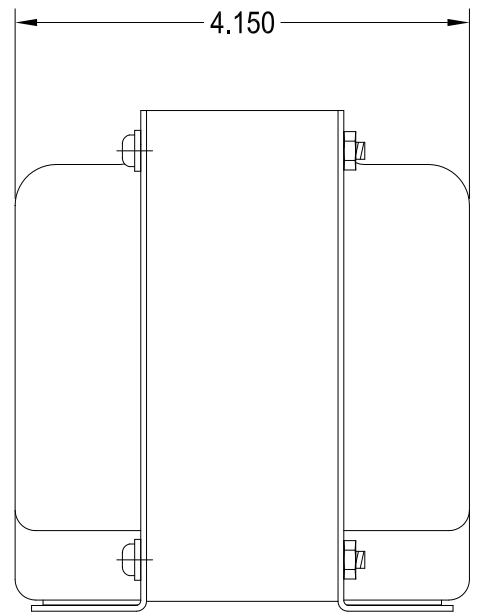
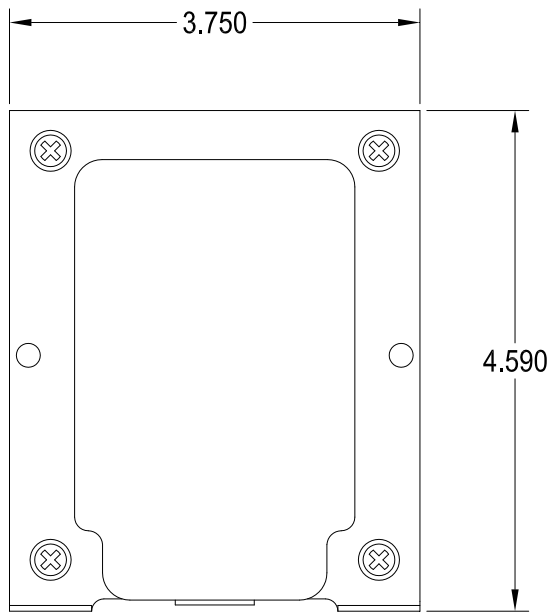
1650RA THD+N $R_s = 5K$ Ohms



1650RA Phase Shift $R_s = 5K$ Ohms



Dimensional Details:

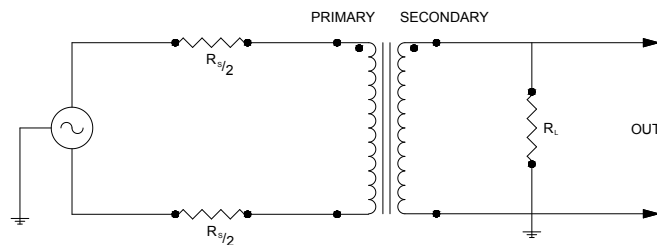


Label:

	HAMMOND MANUFACTURING.	1650RA
		100WATTS 30Hz - 30KHz
	BLK - GRN - YEL - WHT	
	COM - 4OHM - 8OHM - 16OHM	
	BLU - RED - BRN: 5000 OHMS CT	
	BRN/YEL & BLU/YEL	
	SCREEN TAPS 40% OF PRI VOLTS	
Made In Canada		DATE

TYPICAL TEST CIRCUIT

Measurement instruments
 Hp4192a impedance analyzer
 Hp3456a DVM
 Keithley 2002 DVM
 D scope series iii audio analyzer
 Wayne Kerr 3255B with a 3265B



* All graphs input level 20dbu.
 ** The results are typical and are subject to normal manufacturing and electrical tolerances.