

Using Line Matching Transformers As Drivers For Class B Triodes And Other High Voltage Signal Applications

Many triodes and other loads need from 50-400V peak audio voltage for proper drive. The many sizes of matching transformers can be used to drive these devices. A wide range of turns ratios is available and the 4 or 8 Ohm low impedance windings seem to work with most audio amplifiers. Where full power is not required of the transformer, the 4 or 8 Ohm winding can be driven by the 16 or 32 Ohm output tap on the amplifier, within reason. The prudent voltage limit is the peak secondary voltage, that is, what would normally be found on the secondary during full power use of the transformer in the audio reinforcement application.

Low frequency response 'rule of thumb':

Specification of unit power bandwidth is generally 40-10000Hz (see data sheets).

For $F \times 0.7071$, double the transformer power rating over the required drive power.

For $F \times 0.5$, quadruple the transformer power rating over the required drive power.

e.g. for a set of grids requiring 30W drive, a 30W transformer will work at 40Hz.

A 60W transformer will handle 30W at 29Hz, and a 120W transformer will handle 30W at 20Hz.

The chart on the next page shows a selection of Edcor matching transformers, Several of them are immediately useful as class B grid drivers. They also include 140V line windings, where most manufacturers often have carried only 25, 70, or maybe 100V types.

"WA" 4 Ohm series:

Order the "4-140" version with 140V Secondary (line-side) winding tapped at 70V. Comes with 4 Ohm Primary (amplifier-side) winding.

"WA" 8 Ohm series:

Order the "8-140" version with 140V Secondary (line-side) winding tapped at 70V. Comes with 8 Ohm Primary (amplifier-side) winding.

"WS" series:

Order the 140V version. Primary (line-side) center tap is the 25% power tap. Includes 4 and 8 Ohm Secondary. The entire secondary is able to produce 280V RMS (396V peak).

EDCOR model (140V)	RMS SEC A (3)	SEC Ohm (4)	Peak line side V (1)	RMS line side V	XFMR Rating WATTS	Impedance Ratio (2)	Turns Ratio (2)	PRI Tap or Rating, Ohm	PRI V	PRI A
WA15	0.11	1307	198	140	15	327 to 1	18.1 to 1	4	7.75	1.94
WA15	0.11	1307	198	140	15	163 to 1	12.8 to 1	8	10.95	1.37
WA30	0.21	653	198	140	30	163 to 1	12.8 to 1	4	10.95	2.74
WA30	0.21	653	198	140	30	81.7 to 1	9.04 to 1	8	15.49	1.94
WA60	0.43	327	198	140	60	81.7 to 1	9.04 to 1	4	15.49	3.87
WA60	0.43	327	198	140	60	40.8 to 1	6.39 to 1	8	21.91	2.74
WA120	0.86	163	198	140	120	40.8 to 1	6.39 to 1	4	21.91	5.48
WA120	0.86	163	198	140	120	20.4 to 1	4.52 to 1	8	30.98	3.87
WA150	1.07	131	198	140	150	32.7 to 1	5.72 to 1	4	24.49	6.12
WA150	1.07	131	198	140	150	16.3 to 1	4.04 to 1	8	34.64	4.33
WA240	1.71	82	198	140	240	20.4 to 1	4.52 to 1	4	30.98	7.75
WA240	1.71	82	198	140	240	10.2 to 1	3.20 to 1	8	43.82	5.48
WA400	2.86	49	198	140	400	12.3 to 1	3.50 to 1	4	40.00	10.00
WA400	2.86	49	198	140	400	6.13 to 1	2.47 to 1	8	56.57	7.07
WS8	0.03	9800	396	280	8	2450 to 1	49.5 to 1	4	5.66	1.41
WS8	0.03	9800	396	280	8	1225 to 1	35.0 to 1	8	8.00	1.00
WS100	0.36	784	396	280	100	196 to 1	14.0 to 1	4	20.00	5.00
WS100	0.36	784	396	280	100	98.0 to 1	9.90 to 1	8	28.28	3.54
WS120	0.43	653	396	280	120	163 to 1	12.8 to 1	4	21.91	5.48
WS120	0.43	653	396	280	120	81.7 to 1	9.04 to 1	8	30.98	3.87
WS200	0.71	392	396	280	200	98.0 to 1	9.90 to 1	4	28.28	7.07
WS200	0.71	392	396	280	200	49.0 to 1	7.00 to 1	8	40.00	5.00
WS400	1.43	196	396	280	400	49.0 to 1	7.00 to 1	4	40.00	10.00
WS400	1.43	196	396	280	400	24.5 to 1	4.95 to 1	8	56.57	7.07
WS600	2.14	131	396	280	600	32.7 to 1	5.72 to 1	4	48.99	12.25
WS600	2.14	131	396	280	600	16.3 to 1	4.04 to 1	8	69.28	8.66

- (1) Maximum peak grid to grid Volts available within published transformer ratings.
- (2) Full "line" side to specified 4 or 8 Ohm section.
- (3) Figure should be at least equal to average full-signal grid current.
Average Grid-to-Grid load impedance should not be less than this
- (4) figure