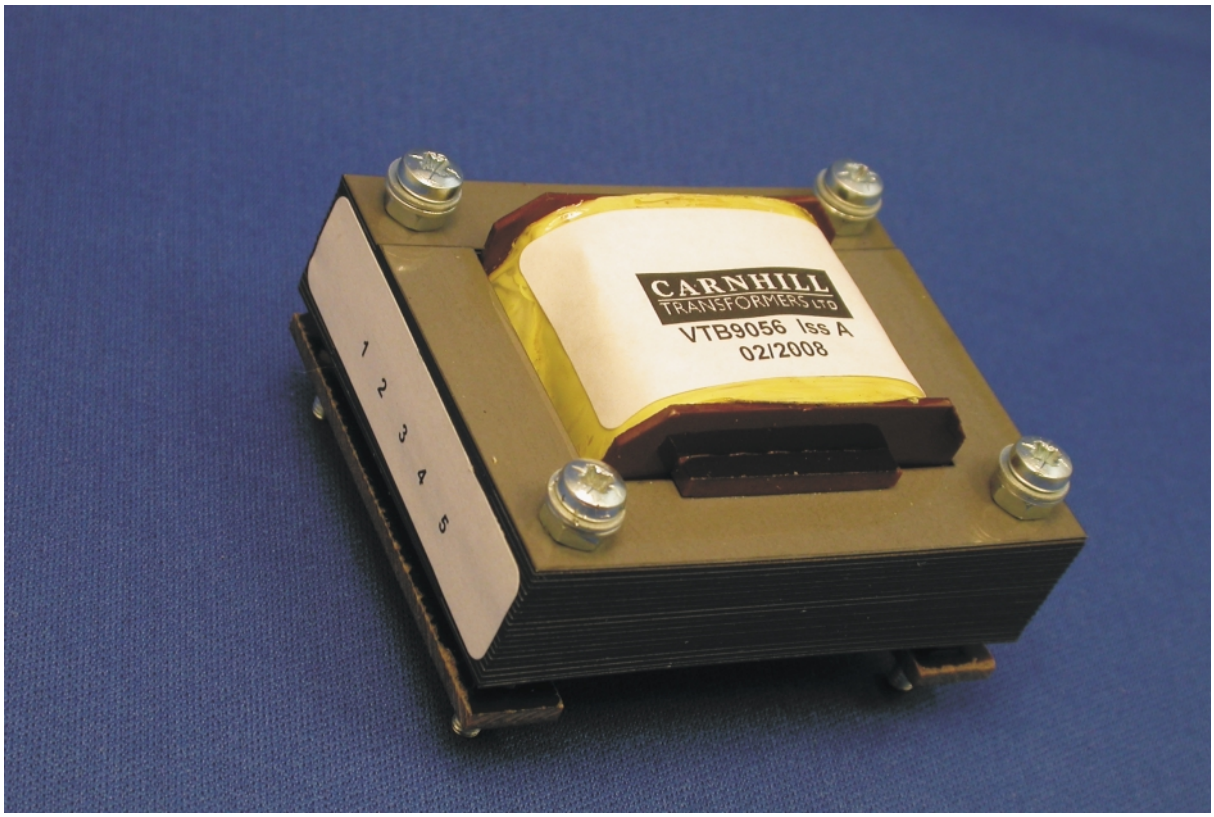
Carnhill Transformers

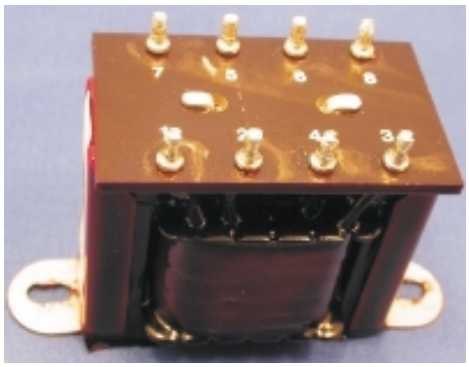
Design Guide (preliminary) - Issue 1e



Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 1148 - High Level Output Transformer

[for Professional Audio Applications]



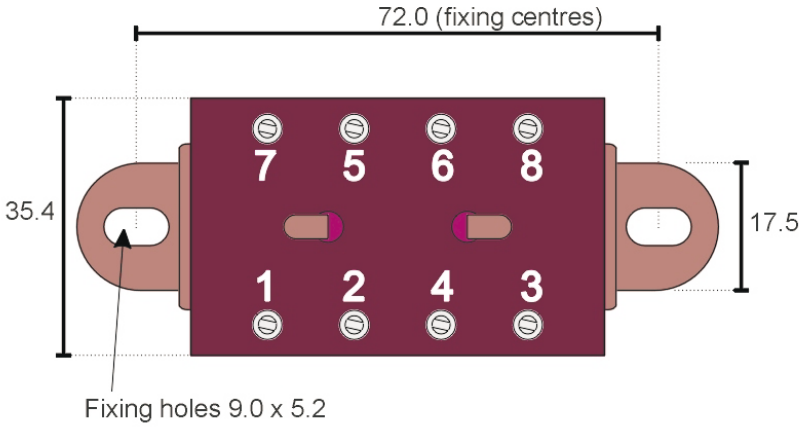
A high performance, gapped, professional audio signal transformer primarily intended for high level balanced line output applications.

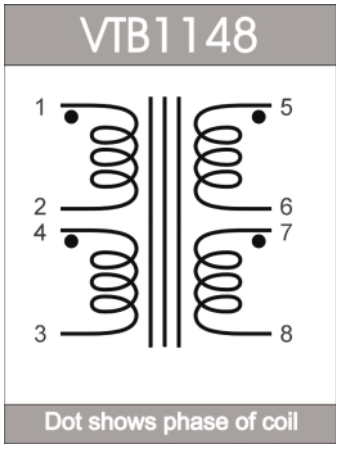
Fitted with a narrower (35mm) wide connector board for use in "1U" rackmount applications.

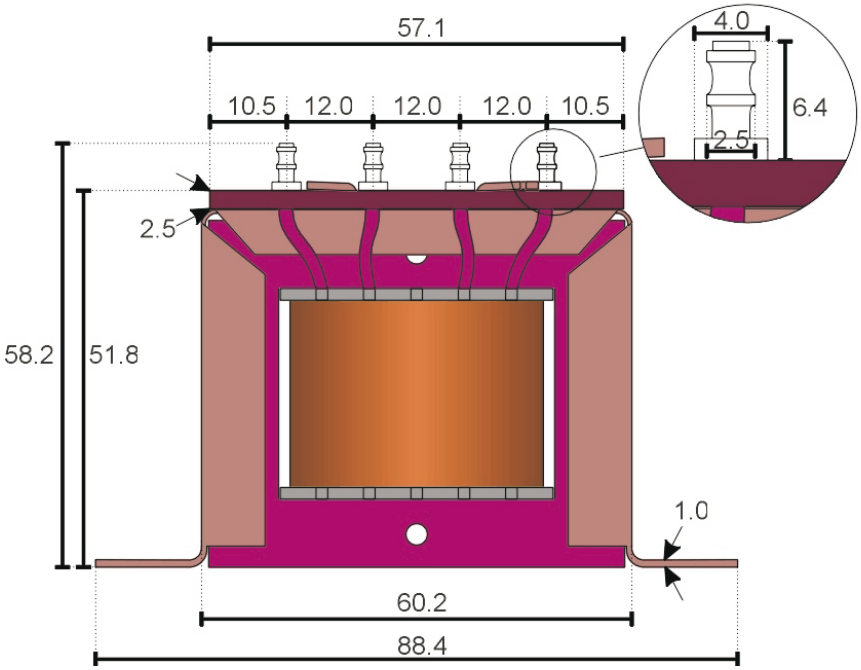
Optimum Source / Load Impedances

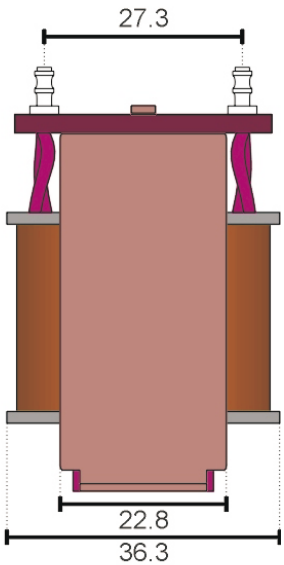
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
200Ω		600Ω		+4
200Ω			150Ω	-2
	50Ω	600Ω		+10
	50Ω		150Ω	+4

Turns Ratio; N1:N2 = 1+1:1.7+1.7
DC Coil Resistances: P1:P2:S1:S2 = 6:6:20:20 (Ohms)









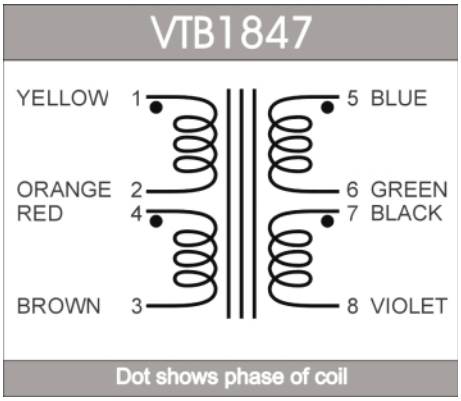
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 1847 - High Level Output Transformer

[for Professional Audio Applications]

A high performance, gapped, professional audio signal transformer primarily intended for high level balanced line output applications.

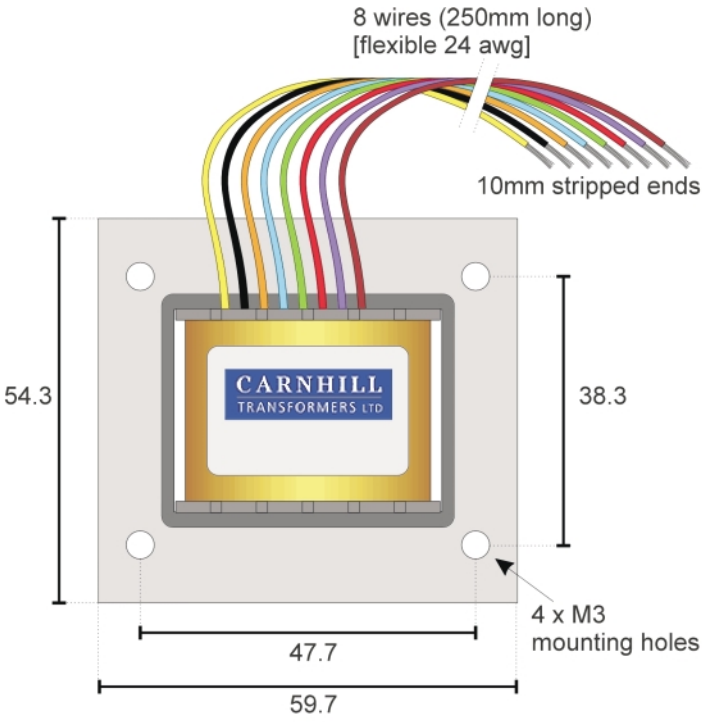
Fitted with 250 mm flying leads.

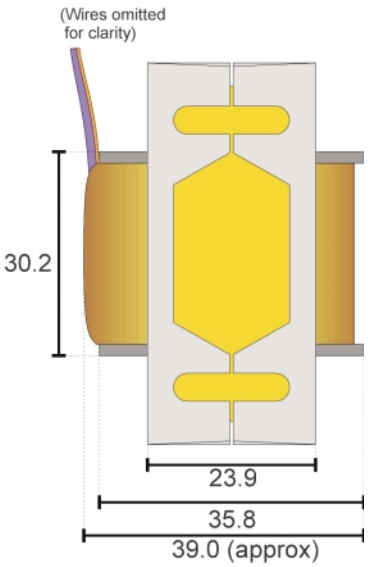


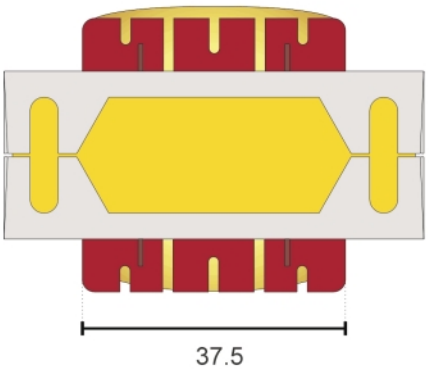
Optimum Source / Load Impedances

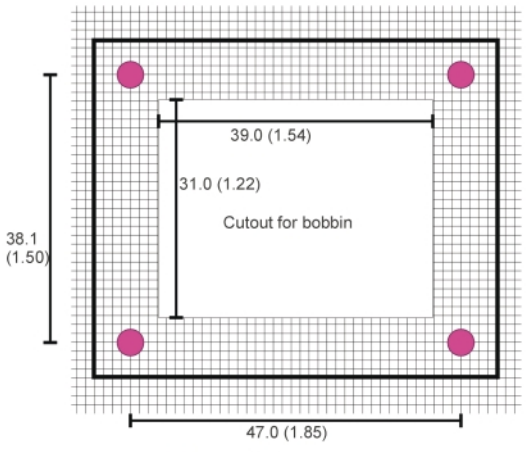
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
200Ω		600Ω		+4
200Ω			150Ω	-2
	50Ω	600Ω		+10
	50Ω		150Ω	+4

Turns Ratio; N1:N2 = 1+1:1.7+1.7
DC Coil Resistances: P1:P2:S1:S2 = 6:6:20:20 (Ohms)
All values are approximate









Dimensions in mm (inches)
All dimensions are approximate

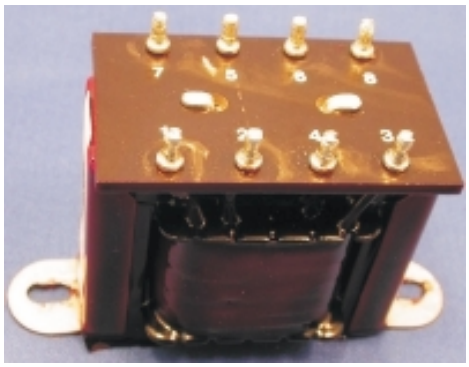
1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

4 holes at 3.8 mm(0.15 in) diameter
[recommended PCB thickness 1.6 mm]

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 2280 - High Level Output Transformer

[for Professional Audio Applications]



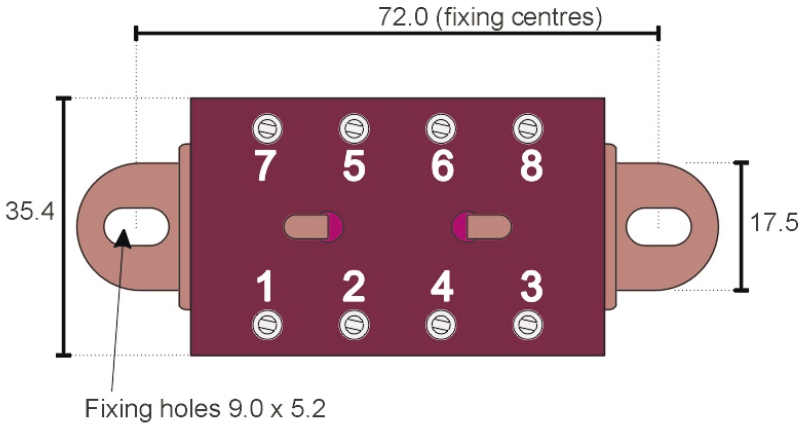
A high performance, GAPPED, professional audio signal transformer primarily intended for high level balanced line output applications.

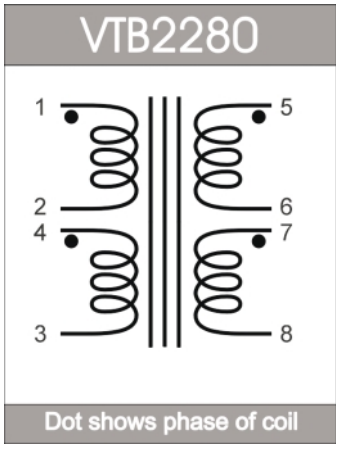
Fitted with a narrower (35mm) wide connector board for use in "1U" rackmount applications.

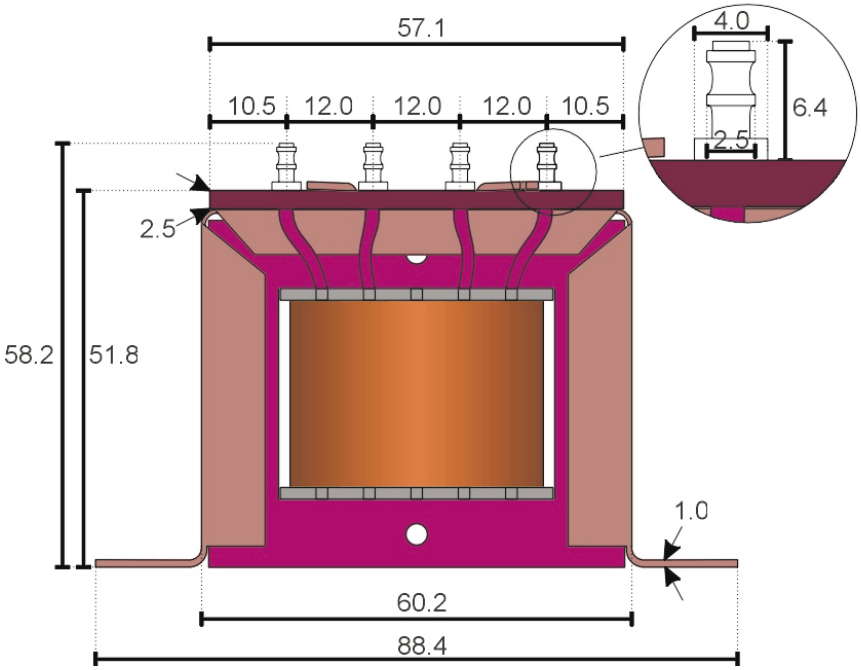
Optimum Source / Load Impedances

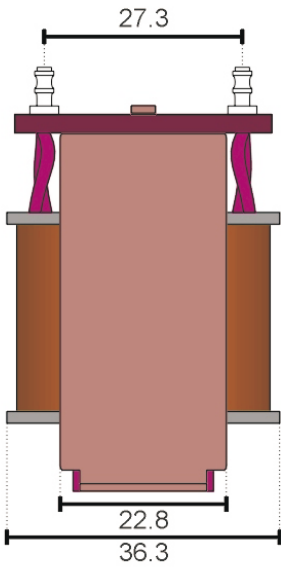
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
600Ω		600Ω		0
600Ω			150Ω	-6
	150Ω	600Ω		+6
	150Ω		150Ω	0

Turns Ratio; N1:N2 = 1+1:1+1
DC Coil Resistances: P1:P2:S1:S2 = 21:21:21:21 (Ohms)





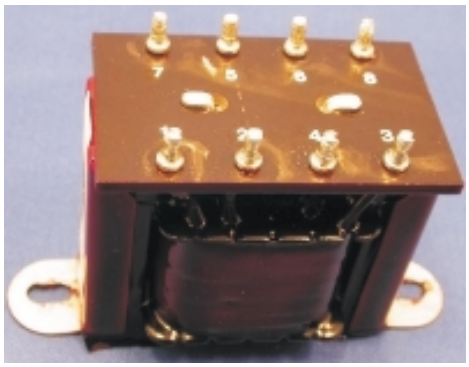




Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 2281 - High Level Output Transformer

[for Professional Audio Applications]



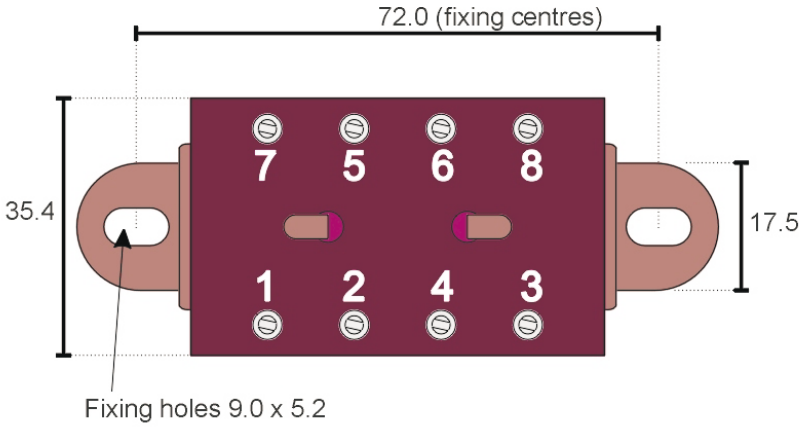
A high performance, UNGAPPED, professional audio signal transformer primarily intended for high level balanced line output applications.

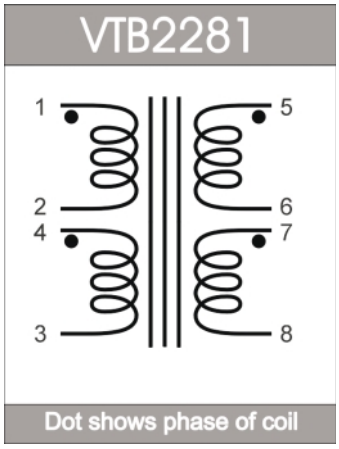
Fitted with a narrower (35mm) wide connector board for use in “1U” rackmount applications.

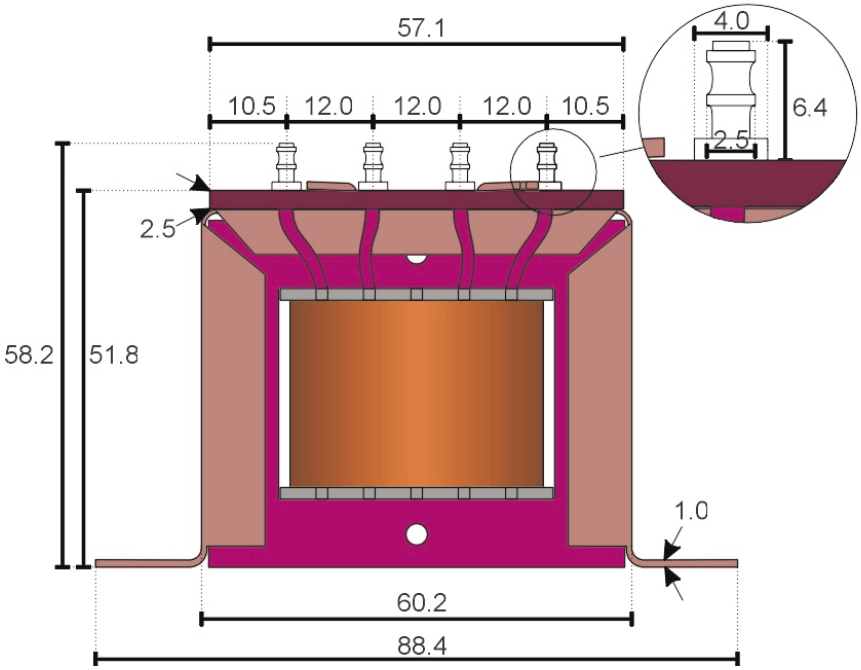
Optimum Source / Load Impedances

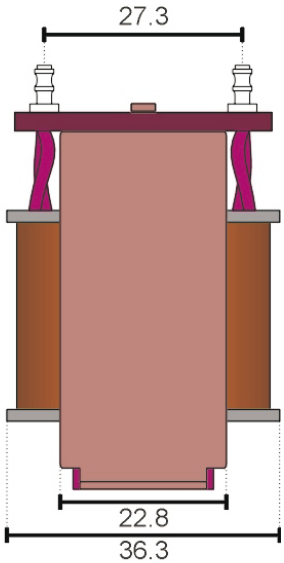
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
600Ω		600Ω		0
600Ω			150Ω	-6
	150Ω	600Ω		+6
	150Ω		150Ω	0

Turns Ratio; N1:N2 = 1+1:1+1
DC Coil Resistances: P1:P2:S1:S2 = 21:21:21:21 (Ohms)





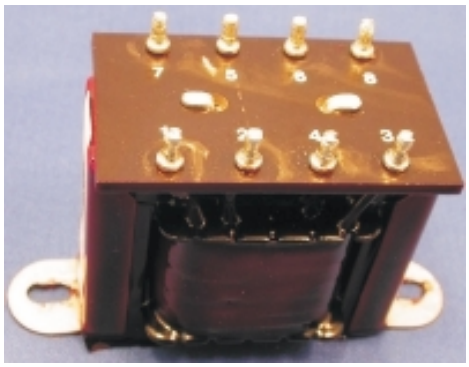




Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 2290 - High Level Output Transformer

[for Professional Audio Applications]



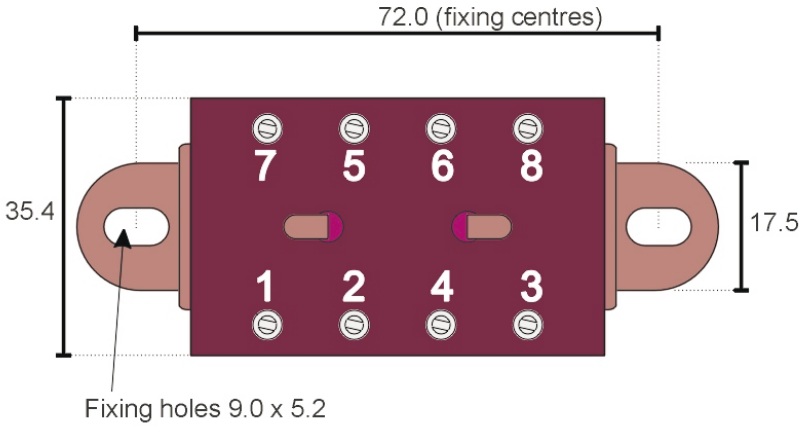
A high performance, GAPPED, professional audio signal transformer primarily intended for high level balanced line valve output applications.

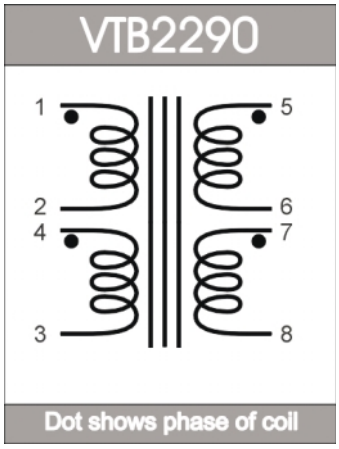
Fitted with a narrower (35mm) wide connector board for use in "1U" rackmount applications.

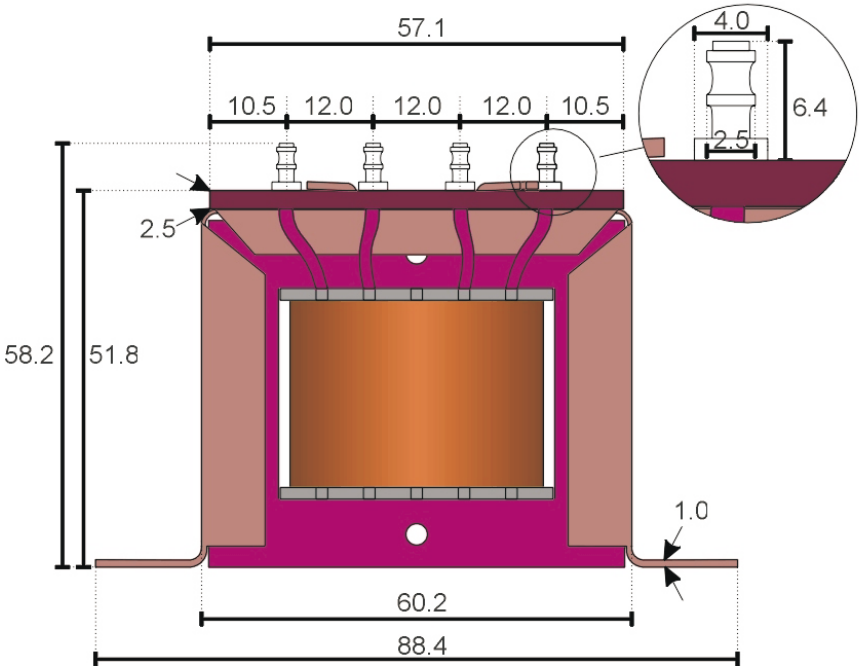
Optimum Source / Load Impedances

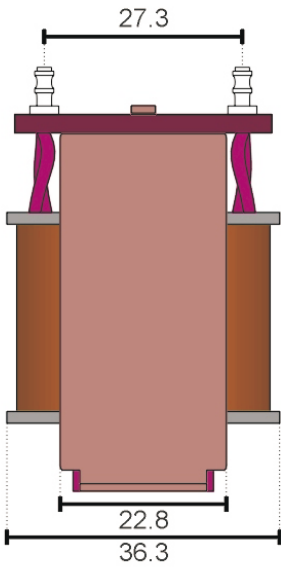
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
9600Ω		600Ω		-12
9600Ω			150Ω	-18
	2400Ω	600Ω		-6
	2400Ω		150Ω	-12

Turns Ratio; N1:N2 = 1+1:1+1
DC Coil Resistances: P1:P2:S1:S2 = 350:350:22:22 (Ohms)





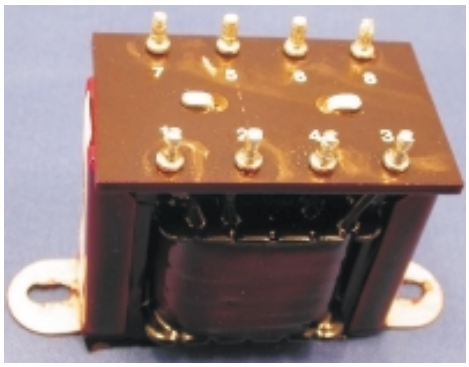




Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 2291 - High Level Output Transformer

[for Professional Audio Applications]



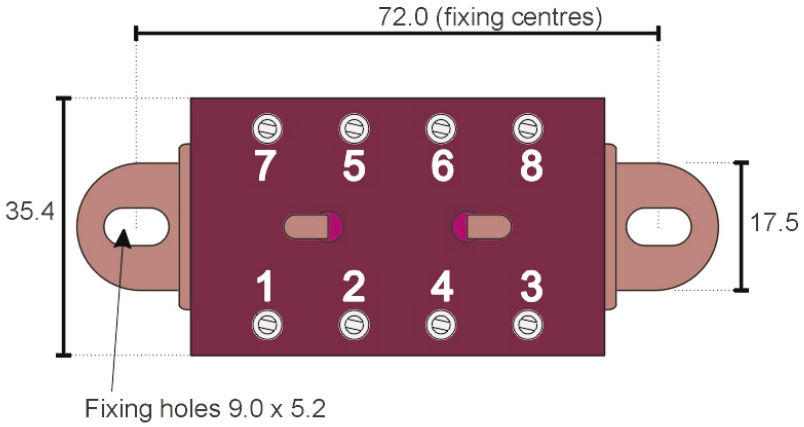
A high performance, UNGAPPED, professional audio signal transformer primarily intended for high level balanced line valve output applications.

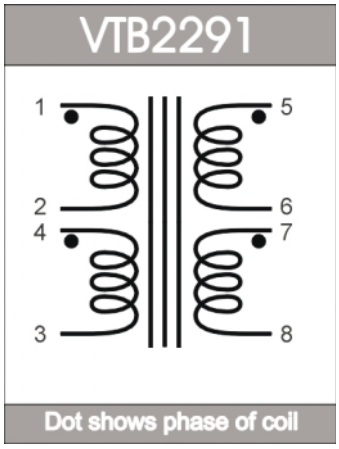
Fitted with a narrower (35mm) wide connector board for use in “1U” rackmount applications.

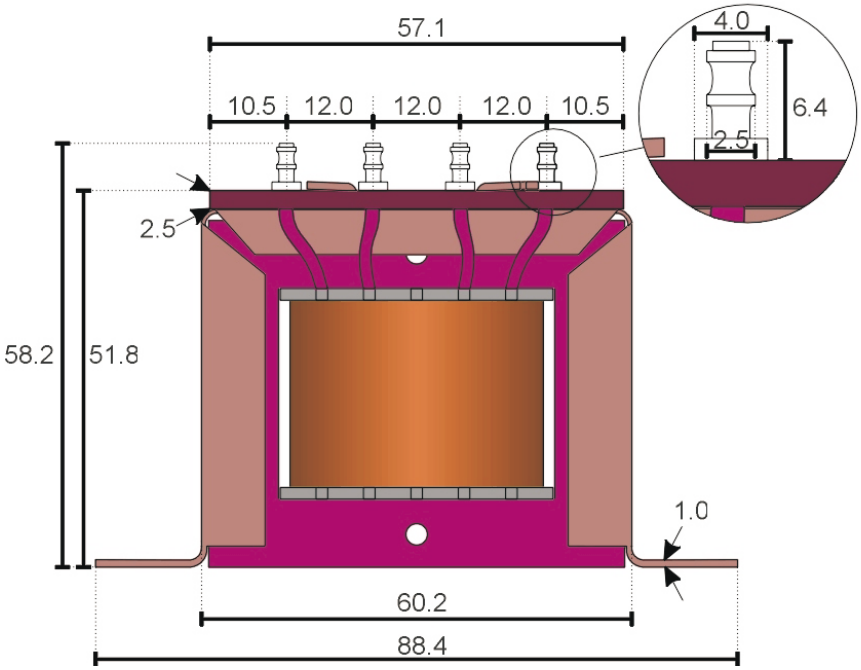
Optimum Source / Load Impedances

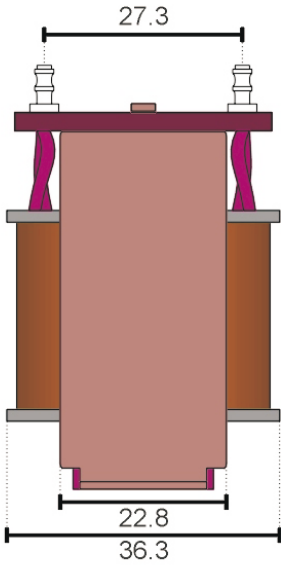
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
9600Ω		600Ω		-12
9600Ω			150Ω	-18
	2400Ω	600Ω		-6
	2400Ω		150Ω	-12

Turns Ratio; N1:N2 = 1+1:1+1
DC Coil Resistances: P1:P2:S1:S2 = 315:315:22:22 (Ohms)









Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9045 - Low Level Audio Signal Transformer

[for Professional Audio Applications]

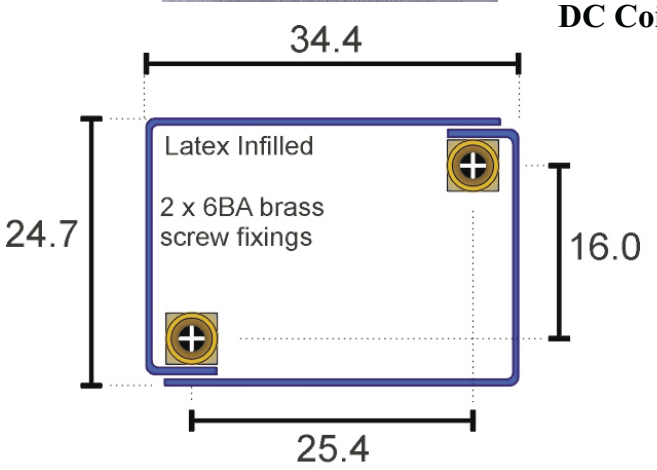
A high performance, no compromise, professional audio signal transformer primarily intended for low level microphone input applications

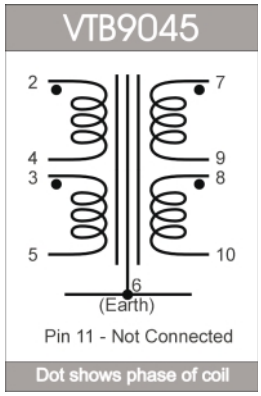
Optimum Source / Load Impedances

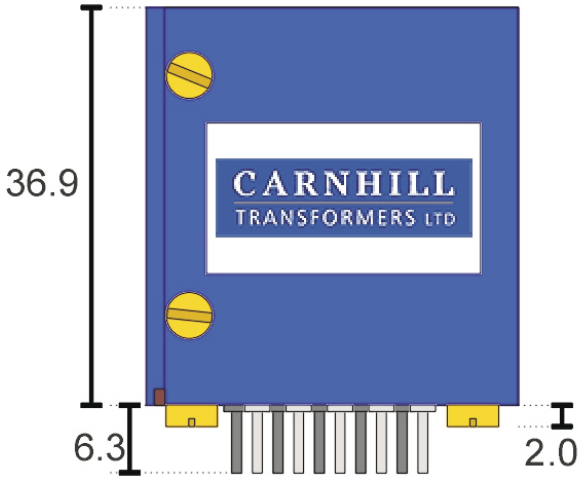
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
1k2Ω		4k8Ω		+6
1k2Ω			1k2Ω	0
	300Ω	4k8Ω		+12
	300Ω		1k2Ω	+6

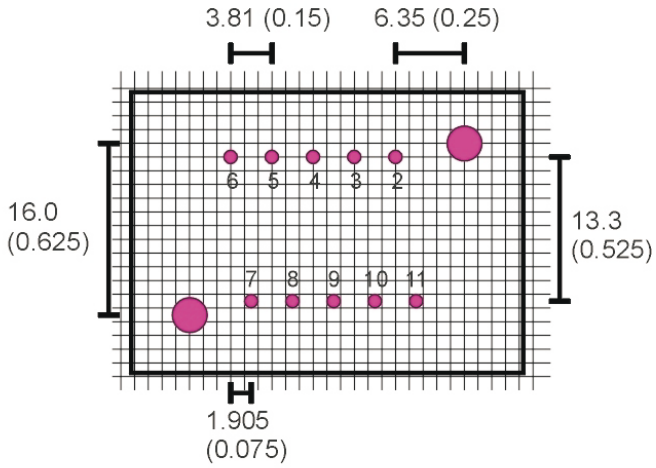
Turns Ratio; N1:N2 = 1+1:2+2

DC Coil Resistances: P1+P2:S1+S2 = 24+24:130+130 (Ohms)

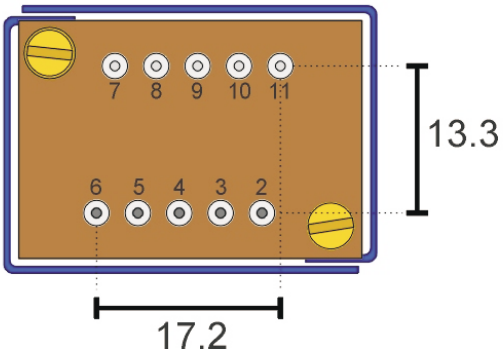








10 holes at 1.2 mm (0.05 in) diameter
2 holes at 3.2 mm(0.125 in) diameter
[recommended PCB thickness 1.6 mm]



1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9045M - Low Level Audio Signal Transformer

[for Professional Audio Applications]

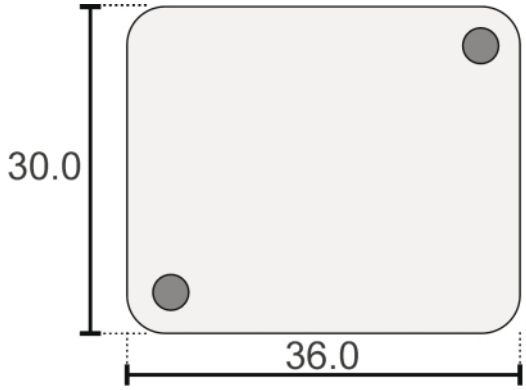
A high performance, no compromise, Mu-Metal enclosure professional audio signal transformer primarily intended for low level microphone input

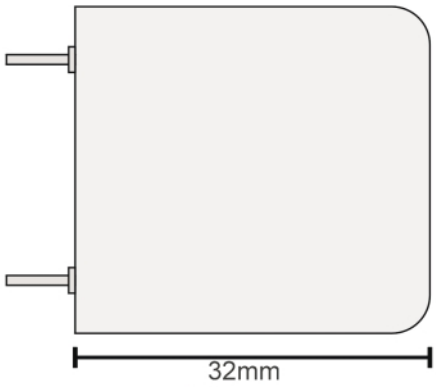
Optimum Source / Load Impedances

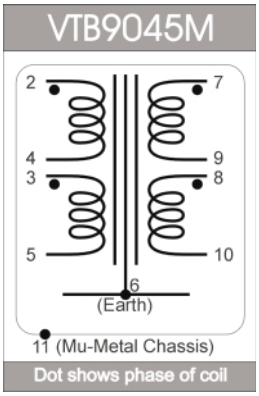
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
1k2Ω		4k8Ω		+6
1k2Ω			1k2Ω	0
	300Ω	4k8Ω		+12
	300Ω		1k2Ω	+6

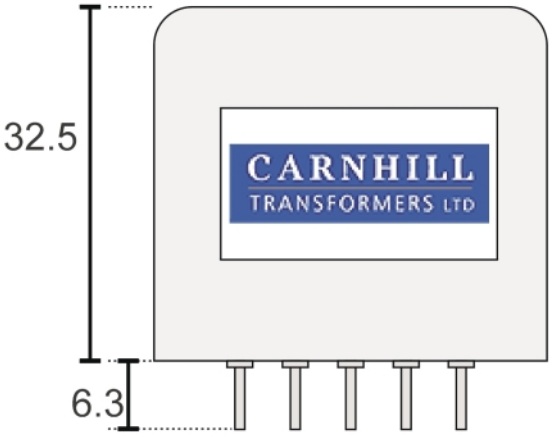
Turns Ratio; N1:N2 = 1+1:2+2

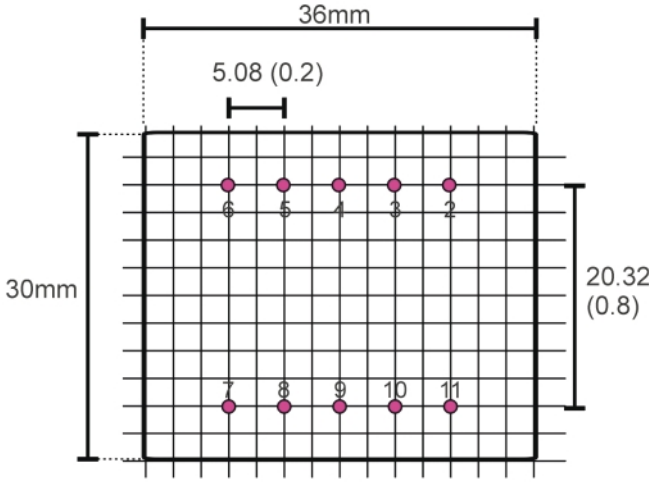
DC Coil Resistances: P1+P2:S1+S2 = 24+24:130+130 (Ohms)

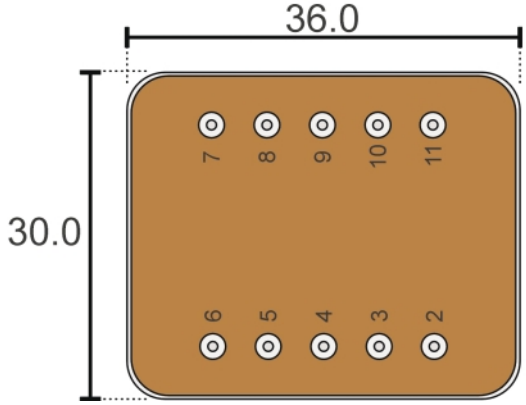












10 holes at 1.2 mm (0.05 in) diameter
[recommended PCB thickness 1.6 mm]

2.54 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9046 - High Level Audio Signal Transformer

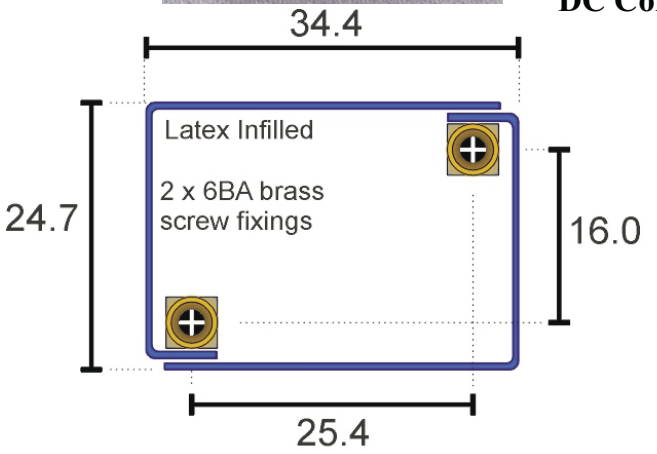
[for Professional Audio Applications]

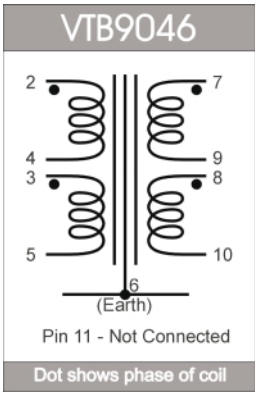
A high performance, no compromise, professional audio signal transformer primarily intended for line level input applications

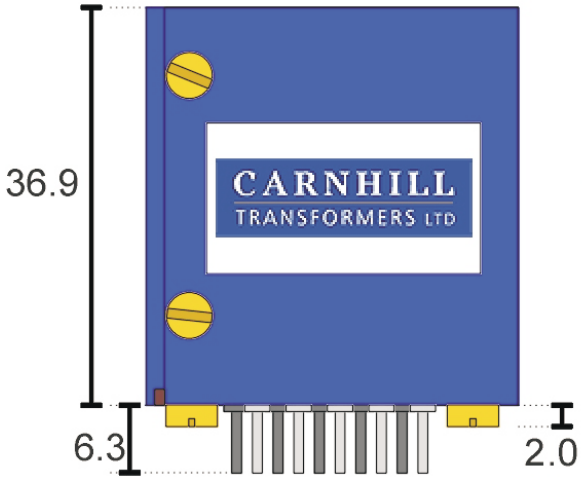
Optimum Source / Load Impedances

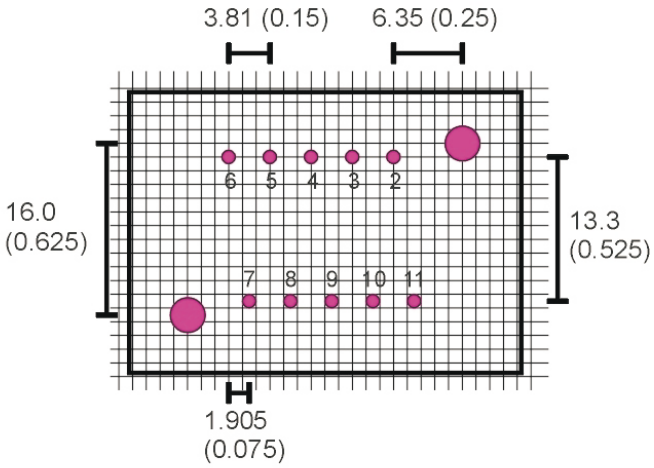
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
10kΩ		2k4Ω		-6
10kΩ			600Ω	-13
	2k4Ω	2k4Ω		0
	2k4Ω		600Ω	-6

Turns Ratio; N1:N2 = 2+2:1+1
DC Coil Resistances: P1:P2:S1:S2 = 175:175:56:56 (Ohms)

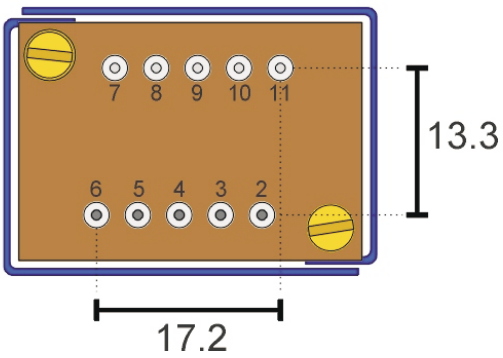








10 holes at 1.2 mm (0.05 in) diameter
2 holes at 3.2 mm(0.125 in) diameter
[recommended PCB thickness 1.6 mm]



1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9046M - High Level Audio Signal Transformer

[for Professional Audio Applications]

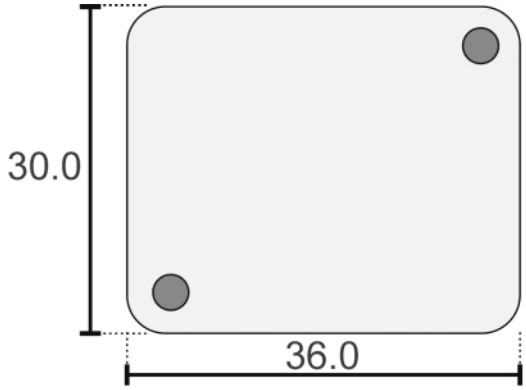
A high performance, no compromise, Mu-Metal enclosure professional audio signal transformer primarily intended for line level input applications

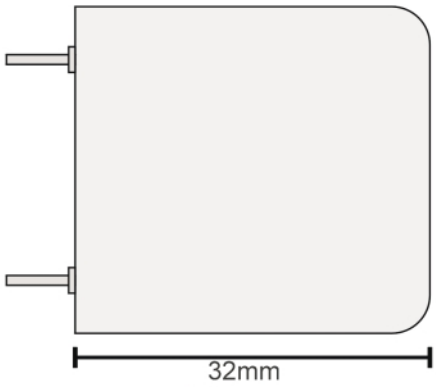
Optimum Source / Load Impedances

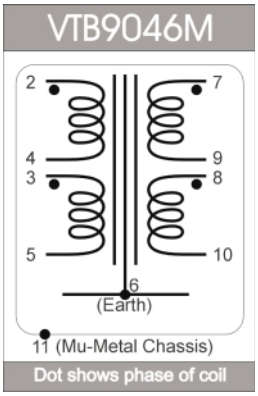
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
10kΩ		2k4Ω		-6
10kΩ			600Ω	-13
	2k4Ω	2k4Ω		0
	2k4Ω		600Ω	-6

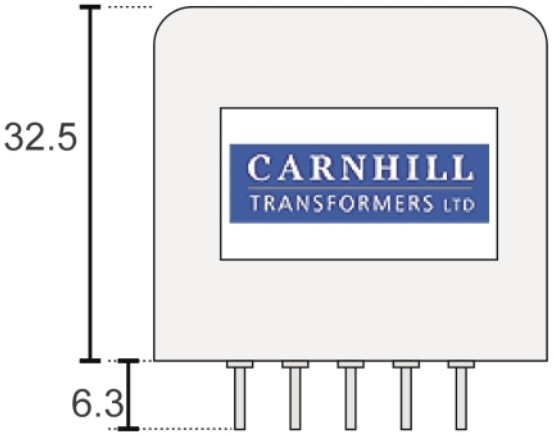
Turns Ratio; N1:N2 = 2+2:1+1

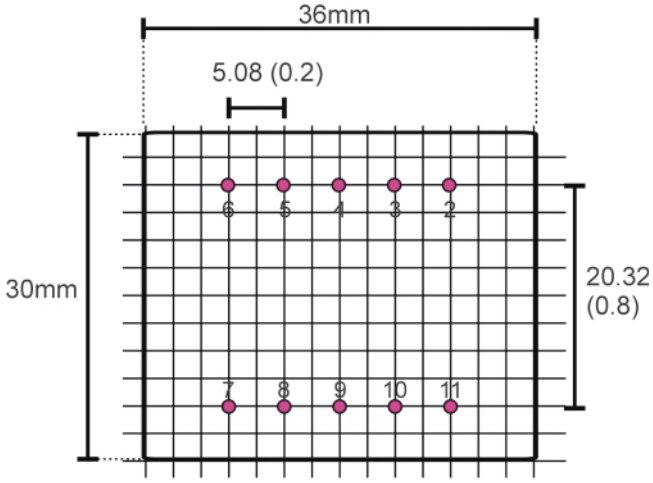
DC Coil Resistances: P1:P2:S1:S2 = 175:175:56:56 (Ohms)

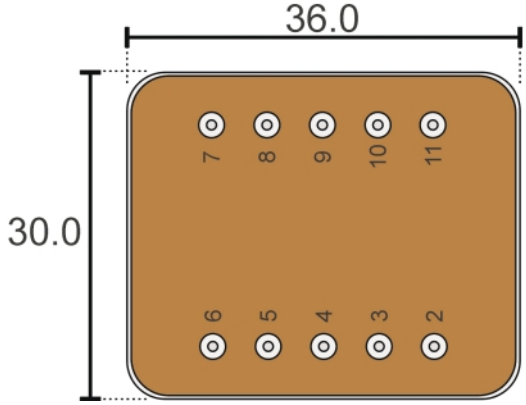












10 holes at 1.2 mm (0.05 in) diameter
[recommended PCB thickness 1.6 mm]

2.54 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9071 - High Level Audio Signal Transformer

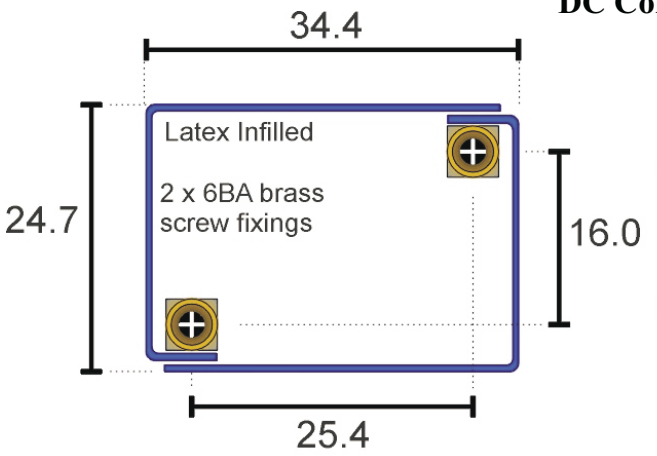
[for Professional Audio Applications]

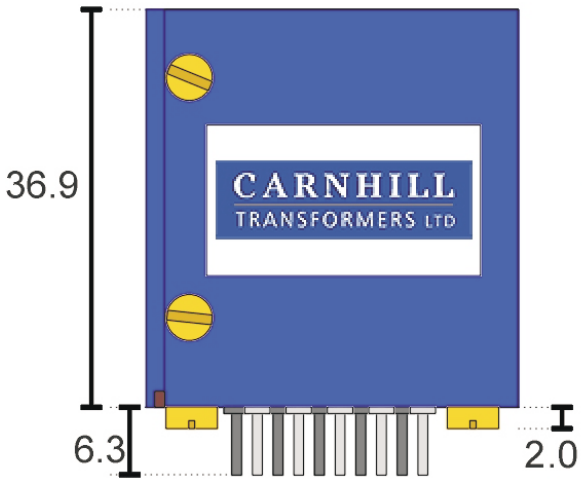
A high performance, no compromise, professional audio signal transformer primarily intended for line level input applications

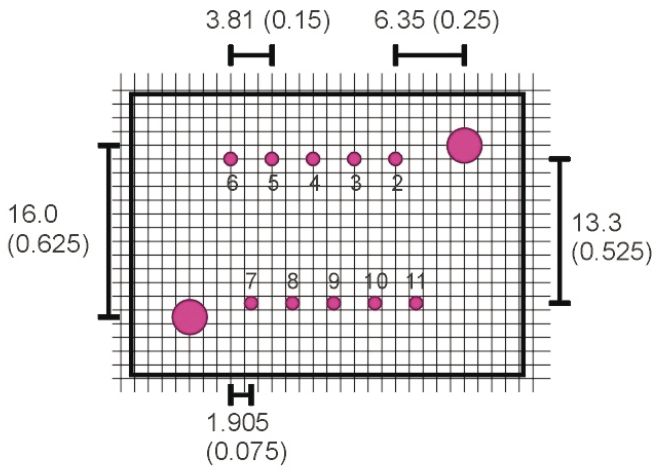
Optimum Source / Load Impedances

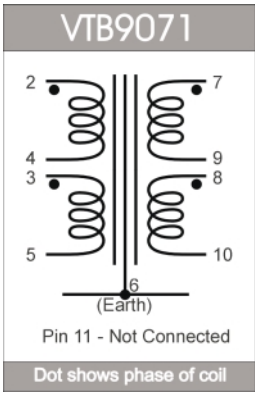
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
10kΩ		10kΩ		0
10kΩ			2k5Ω	-12
	2k5Ω	10kΩ		12
	2k5Ω		2k5Ω	0

Turns Ratio; N1:N2 = 2+2:1+1
DC Coil Resistances: P1:P2:S1:S2 = 175:175:230:230 (Ohms)

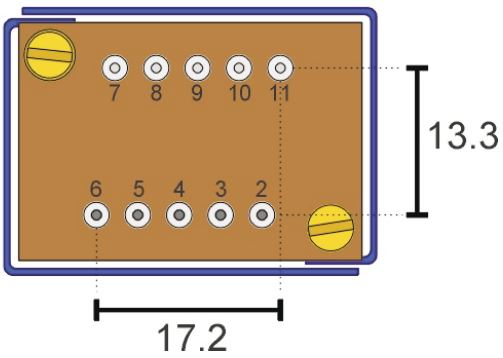








10 holes at 1.2 mm (0.05 in) diameter
2 holes at 3.2 mm(0.125 in) diameter
[recommended PCB thickness 1.6 mm]



1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9072 - High Level Audio Signal DI Transformer

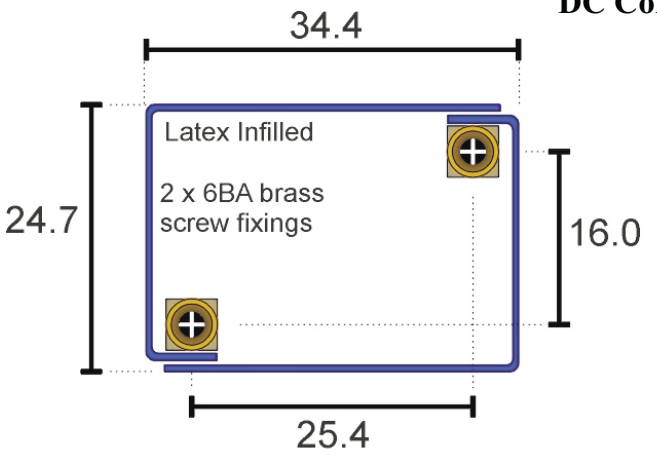
[for Professional Audio Applications]

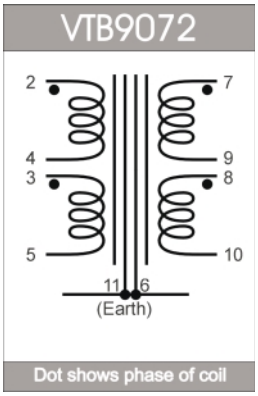
A high performance, no compromise, professional audio signal transformer primarily intended for DI level input applications

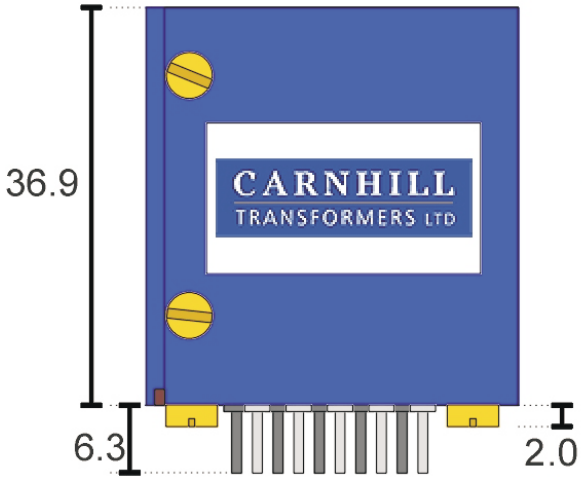
Optimum Source / Load Impedances

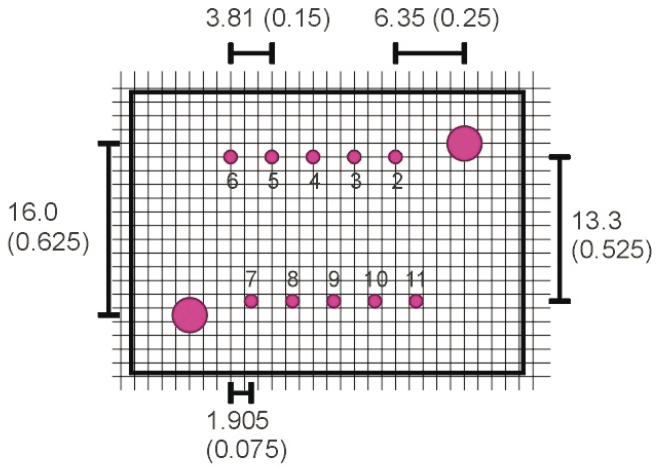
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
144kΩ		1kΩ		-21
144kΩ			250Ω	-27
	36kΩ	1kΩ		-15
	36kΩ		250Ω	-21

Turns Ratio; N1:N2 = 2+2:1+1
DC Coil Resistances: P1:P2:S1:S2 = 1k3:1k3:19:19 (Ohms)

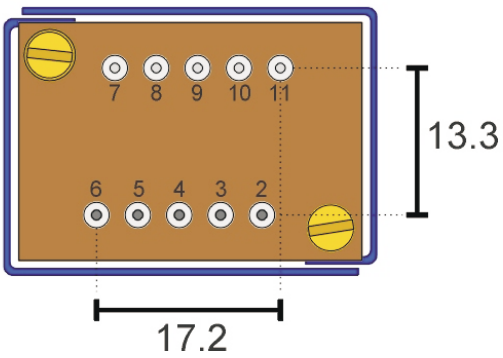








10 holes at 1.2 mm (0.05 in) diameter
2 holes at 3.2 mm(0.125 in) diameter
[recommended PCB thickness 1.6 mm]



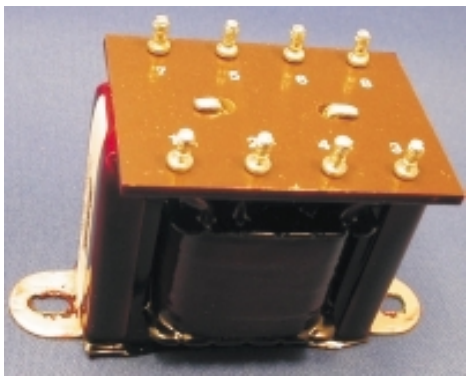
1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

Dimensions in mm (inches)
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9049 - High Level Output Transformer

[for Professional Audio Applications]



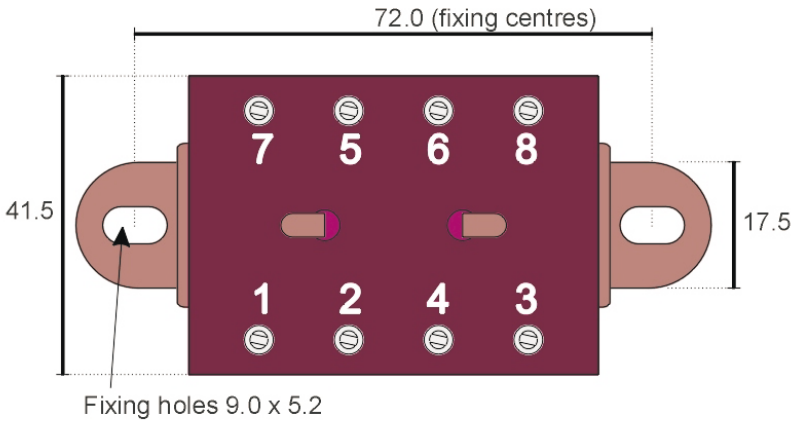
A high performance, gapped, professional audio signal transformer primarily intended for high level balanced line output applications.

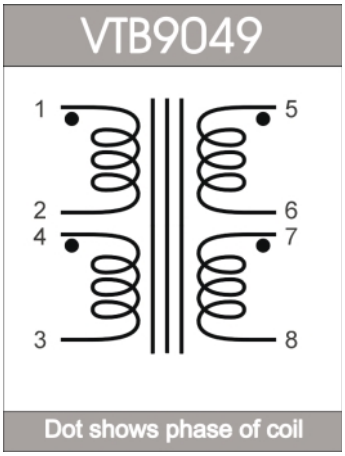
Fitted with a standard (42mm) wide connector board for use in “2U” rackmount applications.

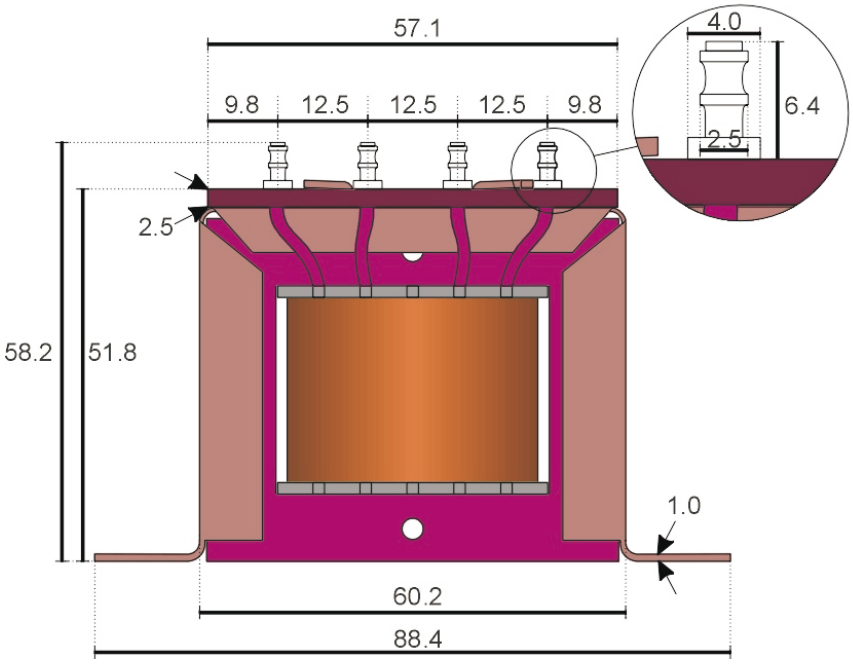
Optimum Source / Load Impedances

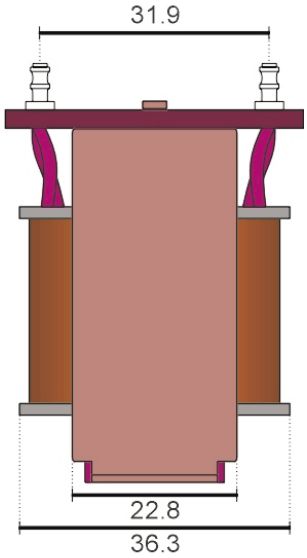
Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
200Ω		600Ω		+4
200Ω			150Ω	-2
	50Ω	600Ω		+10
	50Ω		150Ω	+4

Turns Ratio; N1:N2 = 1+1:1.7+1.7
DC Coil Resistances: P1:P2:S1:S2 = 6:6:20:20 (Ohms)





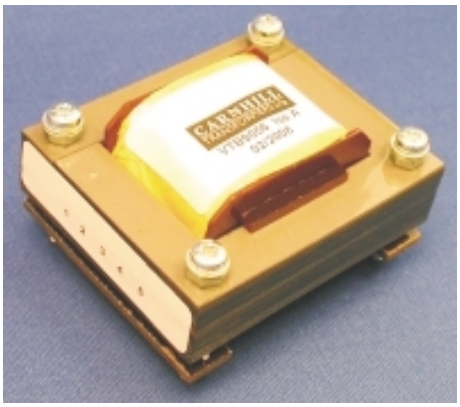




Tel/Fax +44 (0)161 654 0748

VTB 9056 - High Level Output Transformer

[for Professional Audio Applications]



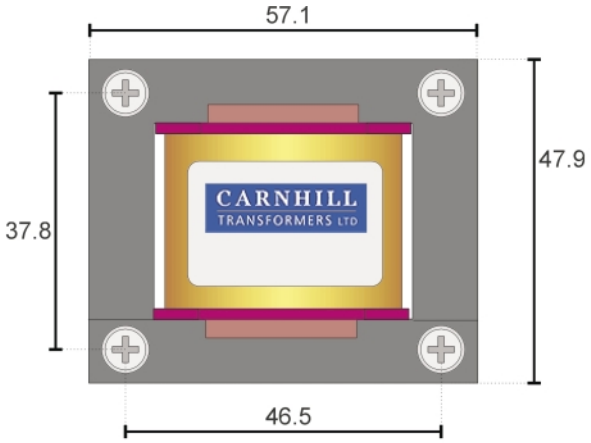
A high performance, ungapped, professional audio signal transformer primarily intended for high level balanced line output applications.

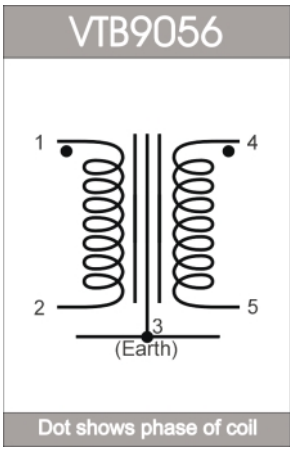
Primarily intended for use in PCB mount applications applications.

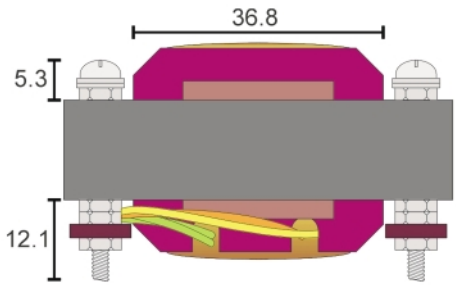
Optimum Source / Load Impedances

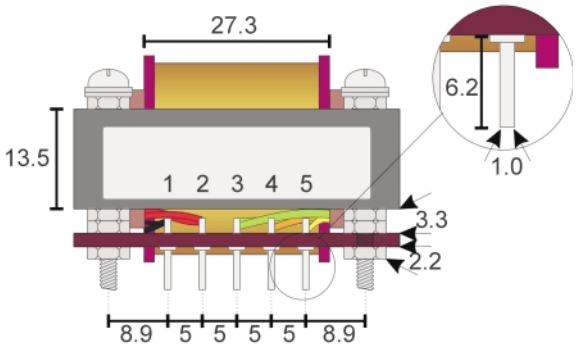
Primary	Secondary	Voltage Gain dB
70Ω	600Ω	+8

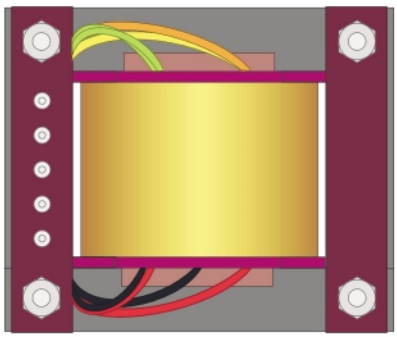
Turns Ratio; N1:N2 = 1:xxxx
DC Coil Resistances: P1:S1 = 3:30 (Ohms)





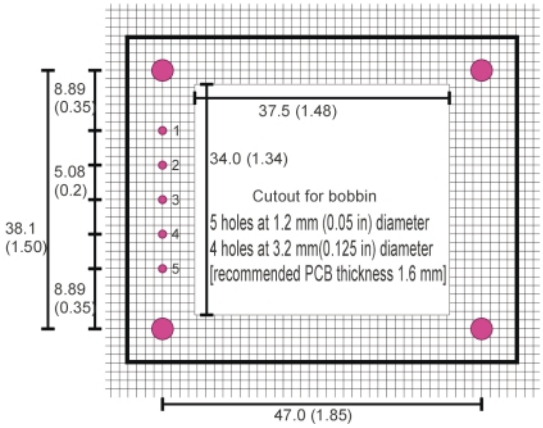






1.27 mm Grid
PCB Layout (Component Side)
[viewed from above]

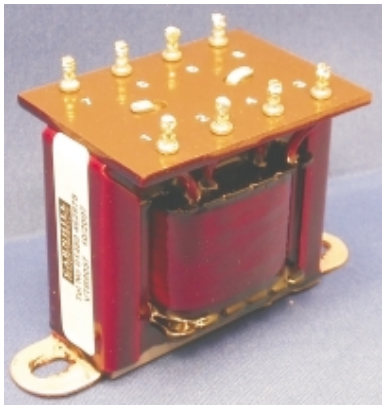
Dimensions in mm (inches)
All dimensions are approximate



Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9057 - High Level Output Transformer

[for Professional Audio Applications]



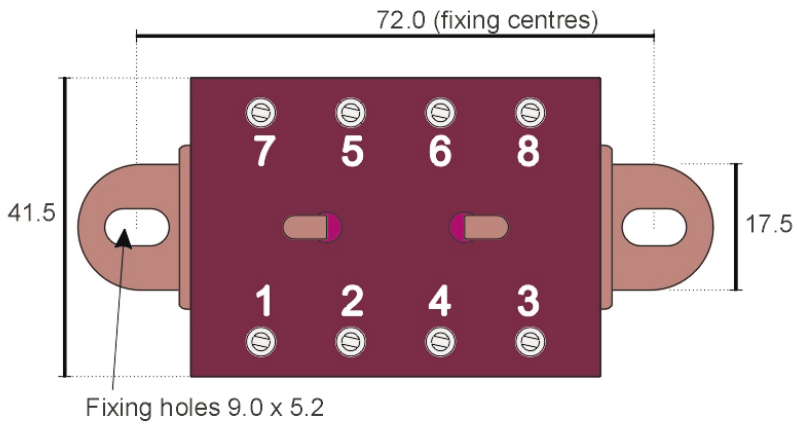
A high performance, ungapped, professional audio signal transformer primarily intended for high level balanced line output applications.

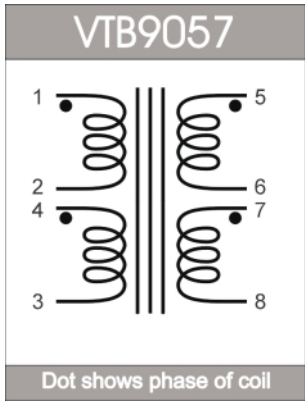
Fitted with a standard (42mm) wide connector board for use in “2U” rackmount applications.

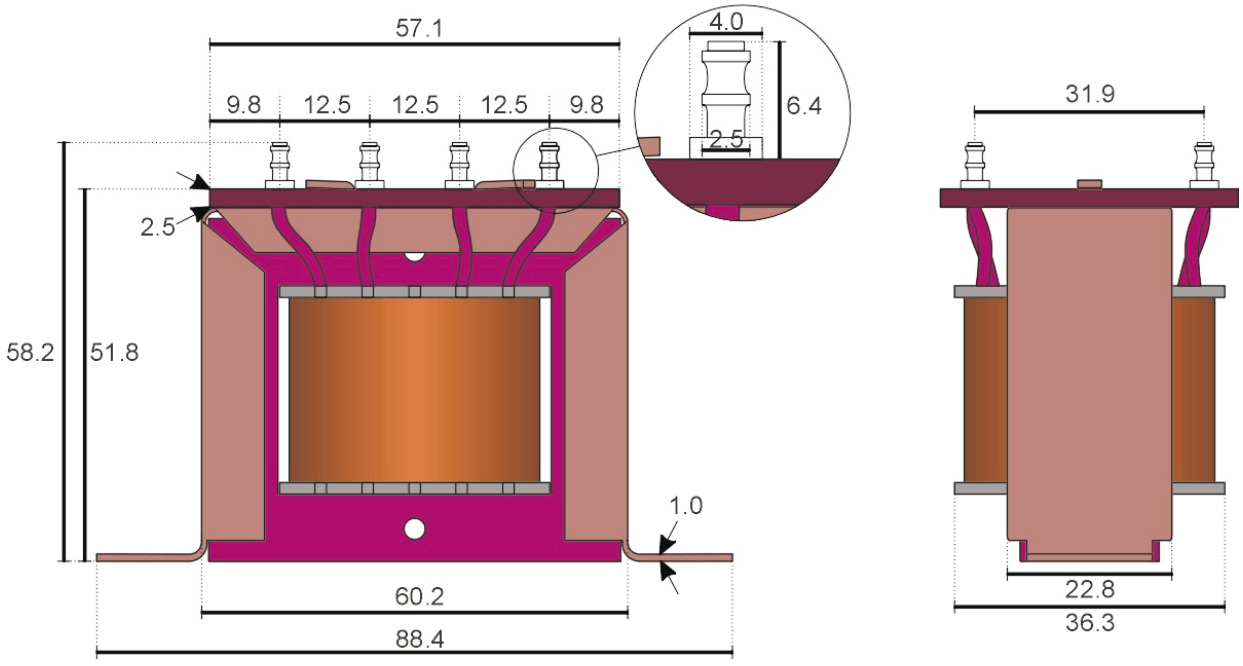
Optimum Source / Load Impedances

Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
200Ω		600Ω		+4
200Ω			150Ω	-2
	50Ω	600Ω		+10
	50Ω		150Ω	+4

Turns Ratio; N1:N2 = 1+1:1.7+1.7
DC Coil Resistances: P1:P2:S1:S2 = 6:6:20:20 (Ohms)



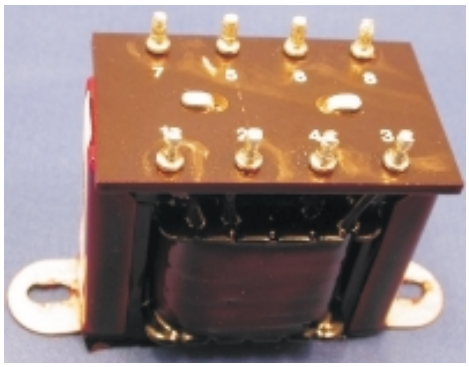




Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9070 - High Level Output Transformer

[for Professional Audio Applications]



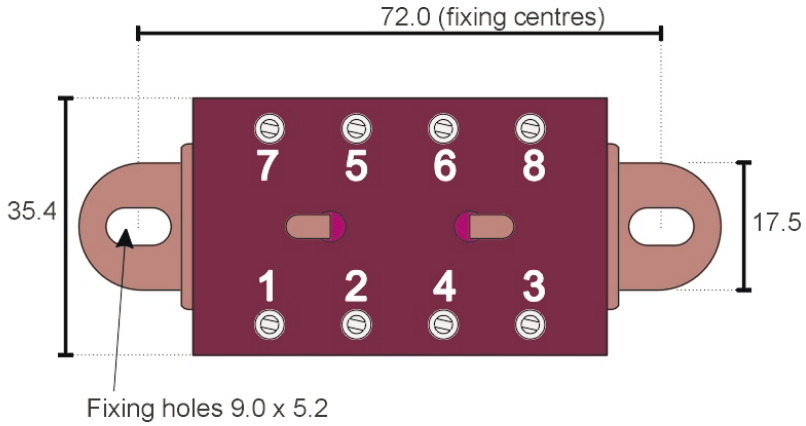
A high performance, ungapped, professional audio signal transformer primarily intended for high level balanced line output applications.

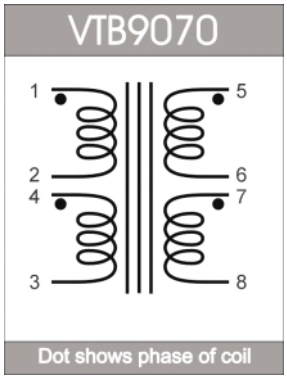
Fitted with a narrower (35mm) wide connector board for use in "1U" rackmount applications.

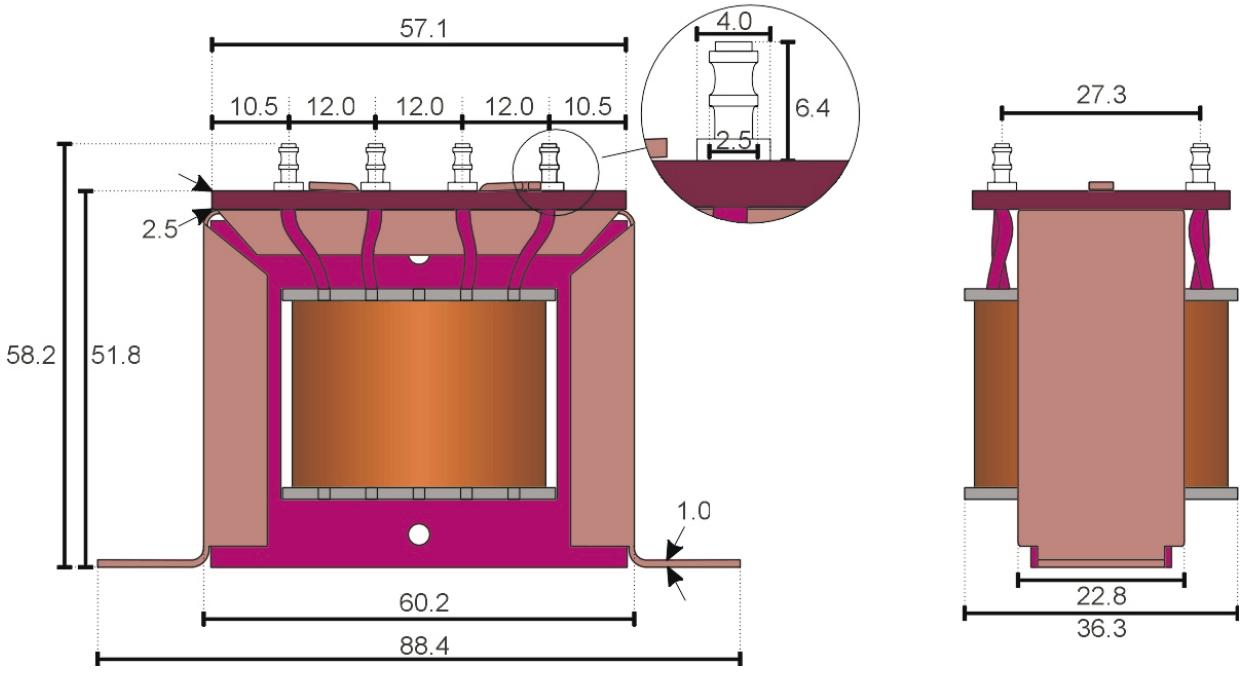
Optimum Source / Load Impedances

Series wired primaries	Parallel wired primaries	Series wired secondaries	Parallel wired secondaries	Voltage Gain dB
200Ω		600Ω		+4
200Ω			150Ω	-2
	50Ω	600Ω		+10
	50Ω		150Ω	+4

Turns Ratio; N1:N2 = 1+1:1.7+1.7
DC Coil Resistances: P1:P2:S1:S2 = 6:6:20:20 (Ohms)



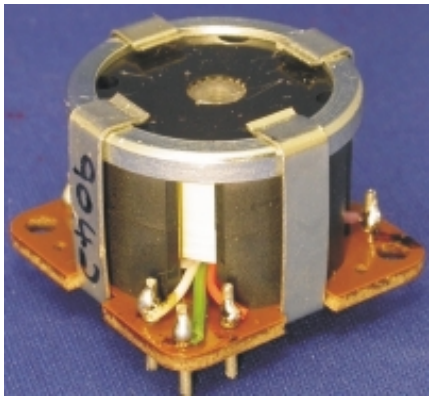




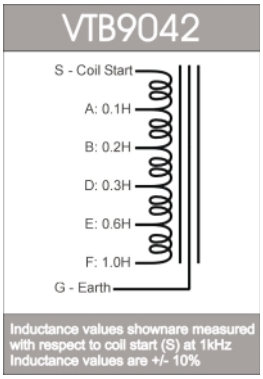
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

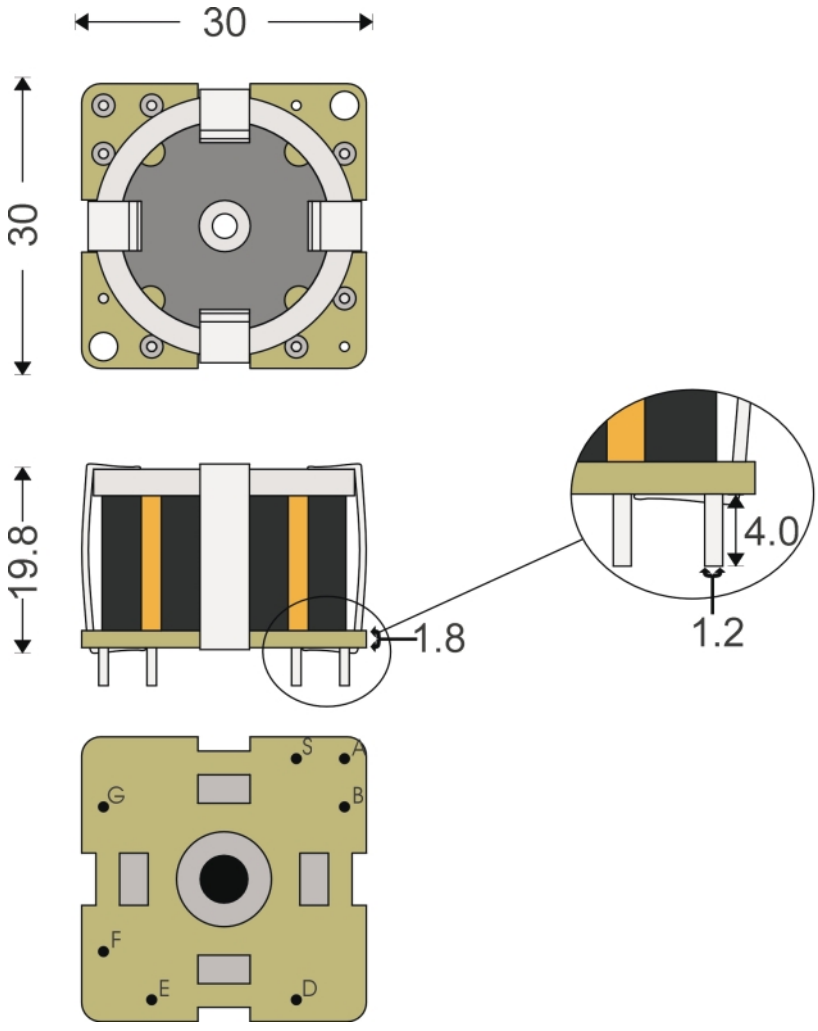
VTB 9042 - Multi-Tapped Inductor

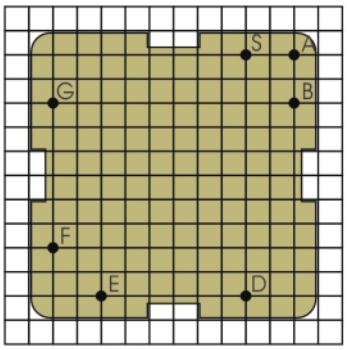
[for Professional Audio Applications]



A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.







Underside view
2.54mm grid
(0.1 inch)

7 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

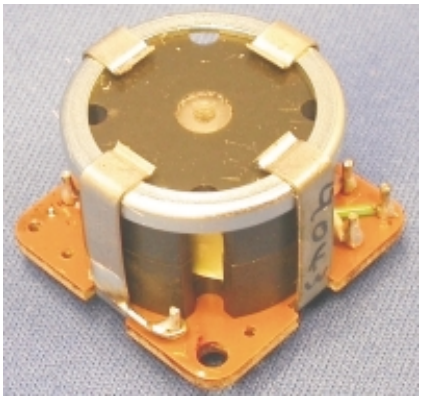
2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

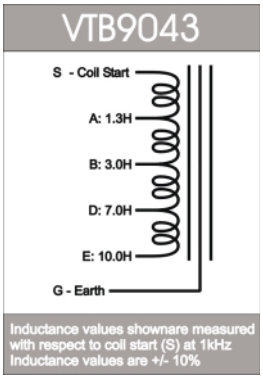
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

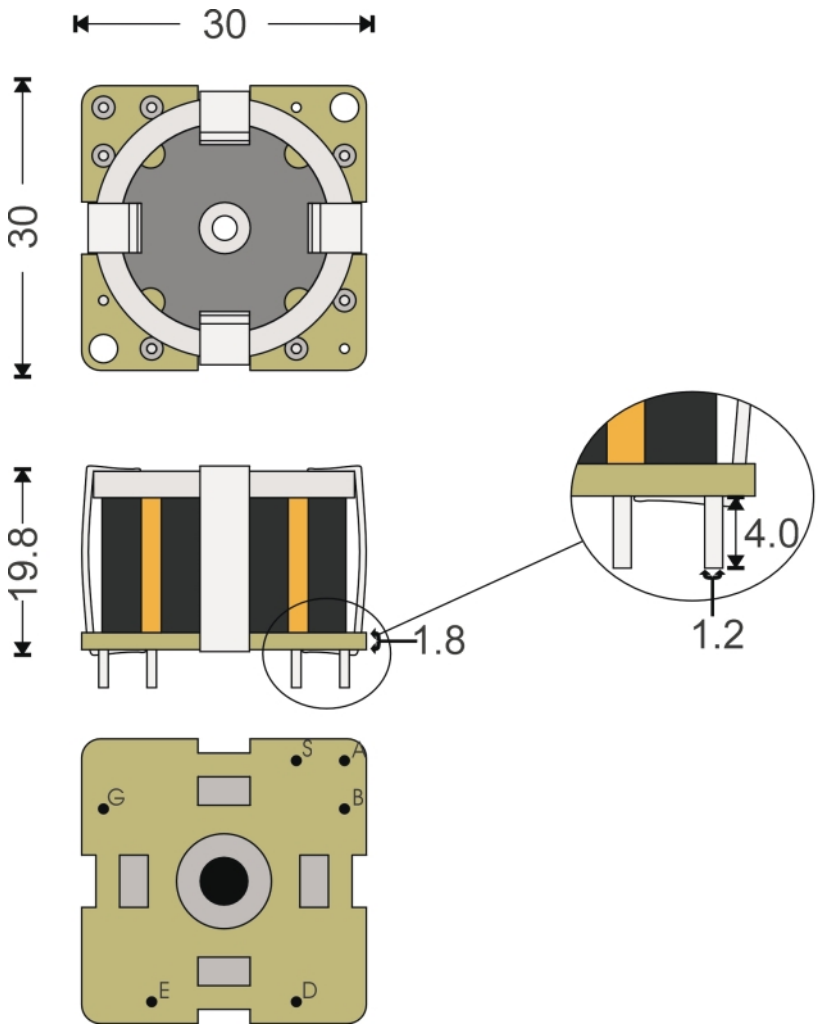
VTB 9043 - Multi-Tapped Inductor

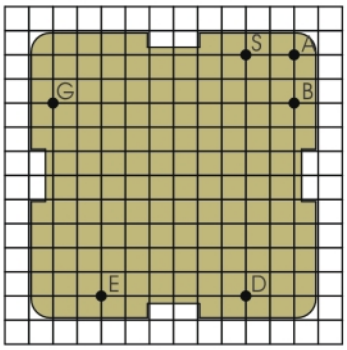
[for Professional Audio Applications]



A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.







Underside view
2.54mm grid
(0.1 inch)

6 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

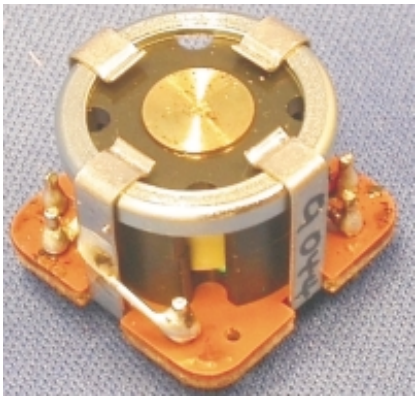
2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

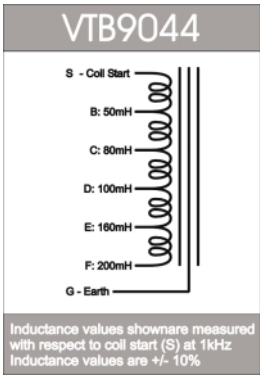
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

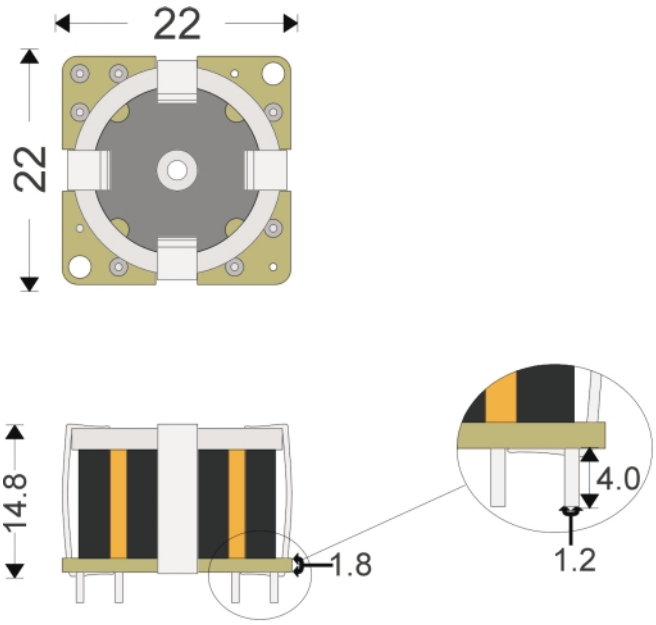
VTB 9044 - Multi-Tapped Inductor

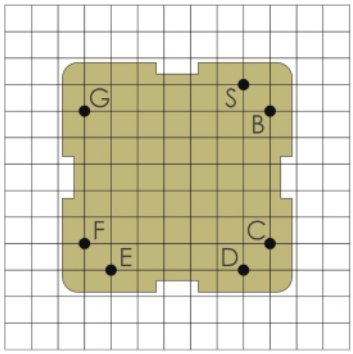
[for Professional Audio Applications]



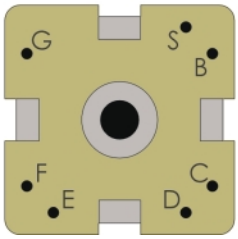
A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.







Underside view



7 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

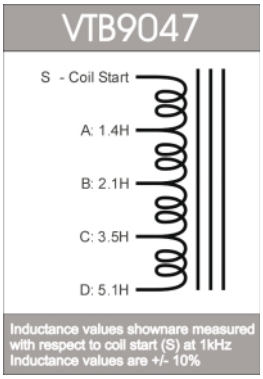
Dimensions in mm
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

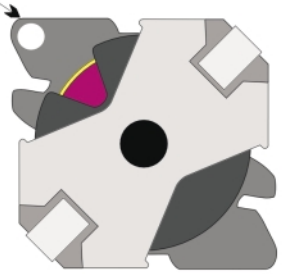
VTB 9047 - Multi-Tapped Inductor

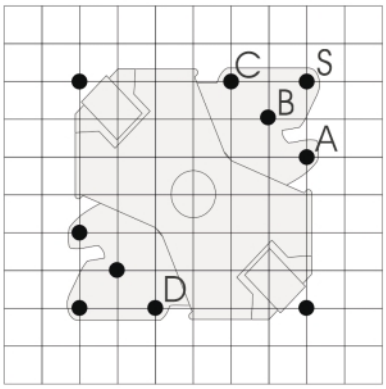
[for Professional Audio Applications]

A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.



Coil start is indicated by dot on upper side





Underside view
2.54mm grid
(0.1 inch)

10 holes at 1.2 mm diameter
[recommended PCB thickness 1.6 mm]

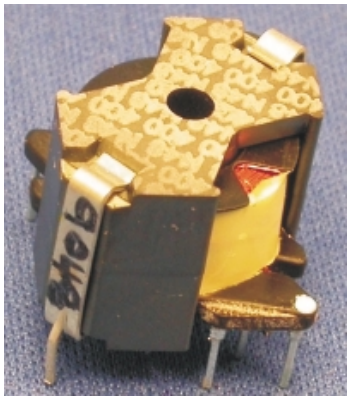
2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

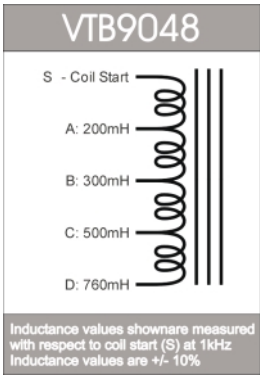
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTB 9048 - Multi-Tapped Inductor

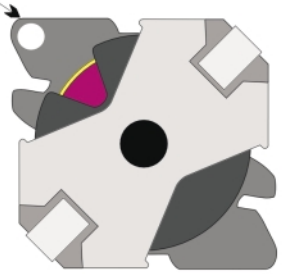
[for Professional Audio Applications]

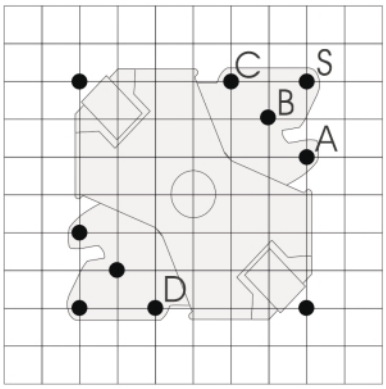


A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.



Coil start is indicated by dot on upper side





Underside view
2.54mm grid
(0.1 inch)

10 holes at 1.2 mm diameter
[recommended PCB thickness 1.6 mm]

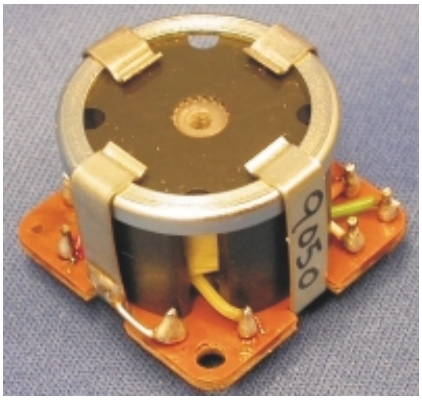
2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

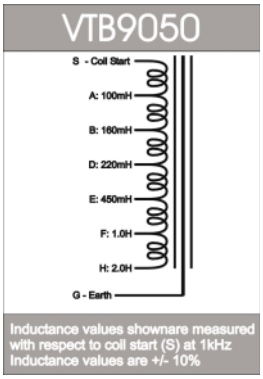
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

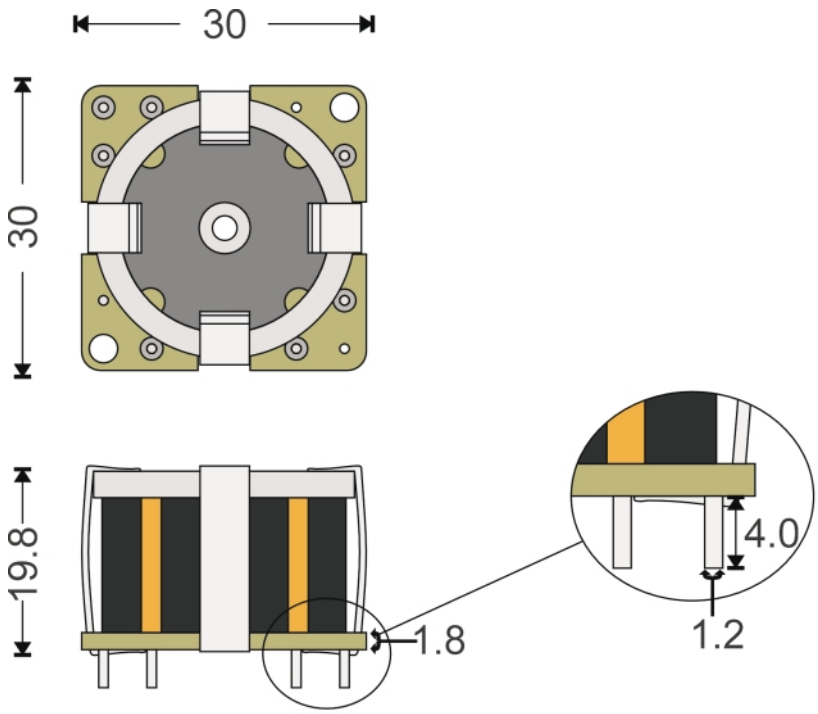
VTB 9050 - Multi-Tapped Inductor

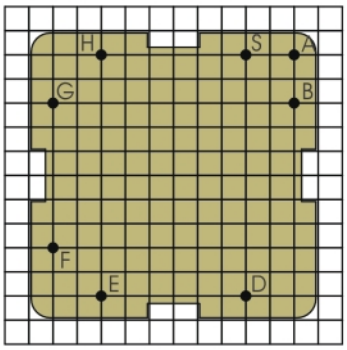
[for Professional Audio Applications]



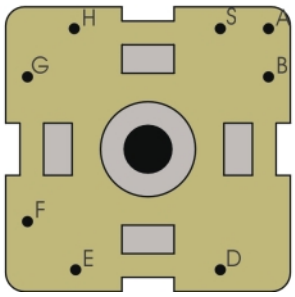
A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.







Underside view
2.54mm grid
(0.1 inch)



8 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

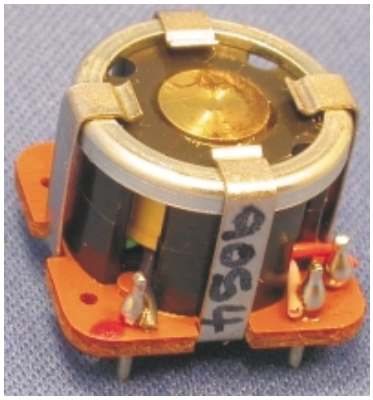
2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

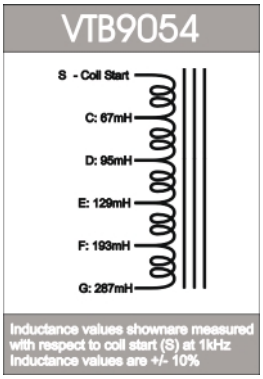
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

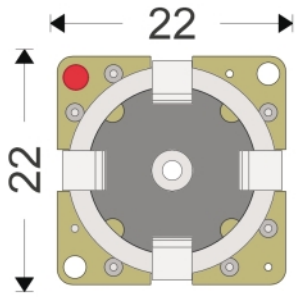
VTB 9054 - Multi-Tapped Inductor

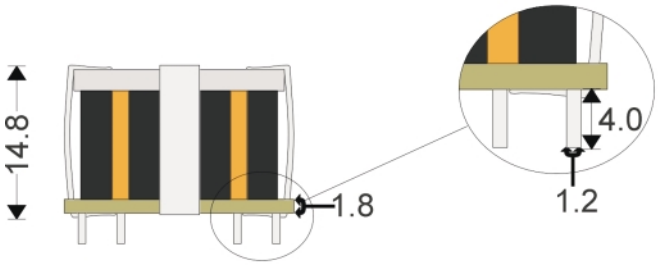
[for Professional Audio Applications]

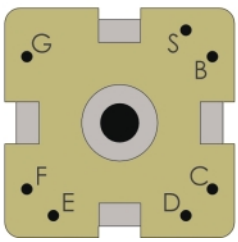


A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.

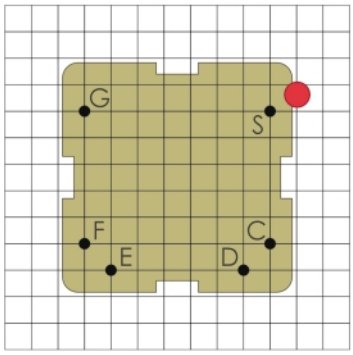








Red Dot indicates coil start



Underside view

6 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

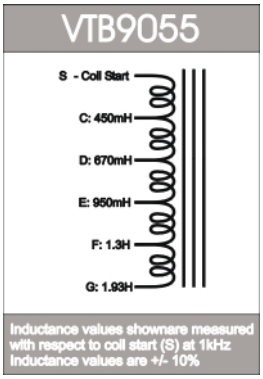
Dimensions in mm
All dimensions are approximate

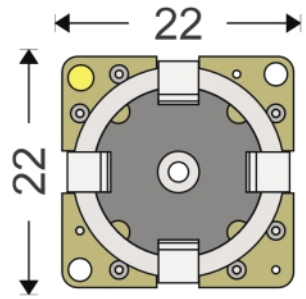
Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

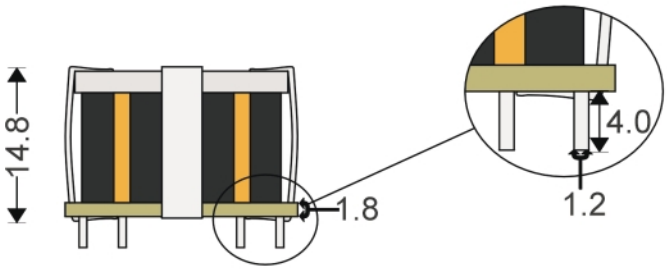
VTB 9055 - Multi-Tapped Inductor

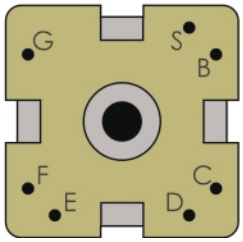
[for Professional Audio Applications]

A high performance, professional audio, multi-tapped inductor, intended for line level inductor based equalisation applications.

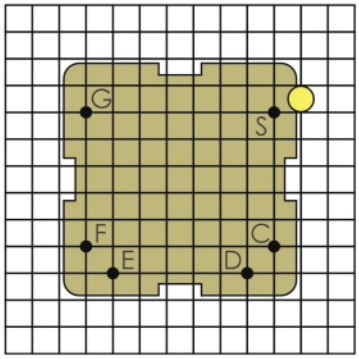








Yellow Dot indicates coil start



Underside view

6 holes at 1.6 mm diameter
[recommended PCB thickness 1.6 mm]

2.54 mm Grid
PCB Layout (Solder Side)
[viewed from below]

Dimensions in mm
All dimensions are approximate

Tel/Fax +44 (0)161 654 0748
Email: service@audiomaintenance.com

VTT2326 - Power Transformer (Screened)

[for Professional Audio Applications]

A high performance, no compromise, professional audio power transformer - primarily intended for 24v applications which also require a phantom (+48v) voltage. Fits in a 1U rack enclosure. Dual Primary for 110/120v and 220v/240v usage.

Ratings:

24.5v @ 0.5A and 38.5v @ 0.023A