

L M ERICSSON PTY. LTD.

(TRIMAX DIVISION)

MELBOURNE • AUSTRALIA

TECHNICAL CATALOGUE



This aerial view shows the modern factory and sales office of the Trimax Division of L M Ericsson Pty. Ltd. The "Trimax" story goes back almost three decades when the manufacture of electrical transformers, associated equipment and parts was commenced. The trading name of Trimax Transformers was selected and "TRIMAX" registered as a trade mark. Late in 1949 "Trimax" moved to its present new, modern factory, where improved facilities enabled increased production as well as the continuous development of new products. In 1961, L M Ericsson Telephone Co. Pty. Ltd. of Melbourne, a subsidiary of the L M Ericsson Group of Stockholm, Sweden, purchased a major interest in the Company and "Trimax" then became actively associated with a world pioneer in telecommunication, whose products range from the production of subminiature components to the design, manufacture and installation of complete telecommunication systems.

From its inception an outstanding factor in the rapid growth of our organisation has been our policy of complete customer co-operation. Our experienced and highly-skilled engineers have been able to design and manufacture special units as well as a full range of standard types of small transformers. Another basic policy which has proved highly successful was the decision that "Trimax" should be as self-contained as possible so that maximum control could be exercised over all manufacturing operations. As a direct result a comparatively elaborate sheet metal plant was installed which also enables us to manufacture a wide range of standard and custombuilt sheet metal goods.

Through the use of fine materials, skilled design, and painstaking workmanship, the "TRIMAX" BRAND is famous today as identifying parts and equipment of the highest grade—incorporated by many manufacturers in intricate and expensive apparatus.

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(TRIMAX DIVISION)

CNR. CHARLES STREET AND WILLIAMS ROAD, NORTH COBURG, VIC. TELEGRAMS AND CABLES: "TRIMAX, MELBOURNE." 'PHONE: 35 1203.

Registered Trade Marks: "Trimax" and "Meltran".

DESIGN

The ability of a transformer or item of electronic equipment to function satisfactorily depends firstly on design. Our wide experience in almost every application of small transformers enables us to design efficient economical units. This also applies particularly to amplifiers and electronic equipment which are included in our range of manufactures.







RESEARCH

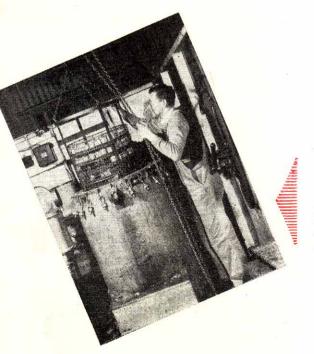
Necessary adjuncts to good design are facilities for research and development. Our laboratory is fully equipped for this work with precision test equipment necessary to carry out all tests required on the full range of Trimax manufactures. Tests are possible from DC to 1 Megacycle. In addition, because of our well stocked library covering both text books and magazines, we seldom have need to turn to outside sources for information. Additions are regularly made of instruments and books to keep the laboratory right up to date.

COIL WINDING and TERMINATING

Special machines have been installed to cover the full range of wire gauges and coils. Winding can be done from singles to "sticks" of 20. Some of these machines have been designed and manufactured by ourselves, and one of our winding methods is covered by patents. Whether one coil only is being made or whether we use multihead fully automatic machines, to ensure complete reliability, only the highest grade materials are used.







IMPREGNATION

The enemy of electrical apparatus — moisture — is defeated right at the beginning by our scrupulous attention to thorough drying and impregnation of all coils. This is a photograph of our heated vacuum-pressure impregnating vat. Impregnations are of either micro-crystalline wax or high grade insulating varnish, depending upon the working conditions of the transformer.



SHEET METAL DEPT.



To give the best co-ordination of production, laminations, metal clamps and cases, if not held in stock, are made in our well equipped sheet metal department while coils are being wound. Because of our wide range of facilities, many other lines as well as custom built units are made. These range from Mumetal shields to cabinets and cases in aluminium to $^{3}/_{16}$ in. thickness, or steel to $\frac{1}{8}$ in.

ASSEMBLY

Assembly commences immediately parts are in the store. Special transformers are assembled by hand but where possible the coils are laminated in an automatic laminating machine. After laminating, any special casings — such as hermetic sealing — are fitted. When resin casting is used the laminated coils pass through the test laboratory for initial test and then to the resin casting department.







SPECIAL ASSEMBLY

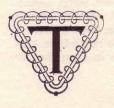
This section specialises in the assembly of components such as attenuators, as well as amplifiers and other electronic equipment. Many intricate pieces of equipment are assembled in this section including our standard range of Ionisation testers, Flash testers and Voltage Regulating transformers. Incorporated in this department is a special equipment testing section completely set up for full electronic testing.



TESTING LABORATORY

After completion all products are thoroughly tested. This view shows the transformer production test room which handles most of the transformers produced. In special cases such as high voltage tests over 5KV and carrier frequency transformers the testing is performed in a section of our main laboratory.









This is a view of the store which is centrally located and receives and distributes the many component parts used in Trimax Products. Packaging and despatch are also carried out in the store where care in packing means that you receive your order in perfect condition.

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CONDITIONS OF SALE



- 1. All prices are subject to alteration without notice.
- 2. Cancellation of orders placed and accepted can be made only with our written consent, and upon such terms as will indemnify us against loss.
- 3. Prices quoted cover delivery F.I.S. in the city area of Melbourne, Sydney and Adelaide. This also applies to Brisbane, Perth, Launceston and Hobart providing the order is for a minimum of £20, one delivery. If a method of transport is specified which, in our opinion, is not the most economical, the freight would be to the buyer's account.
- 4. Due to causes outside our control, we are not always in a position to guarantee delivery by any fixed date, and although every endeavour is made to effect delivery on time, under no circumstances is the Company to be liable for any delay in delivery.
- 5. The acceptance of returned goods by the Company does not necessarily entitle a credit for them. Credit will only be allowed:—
 - (a) Where the goods are returned through the supplier within ten days, and
 - (b) When the claim has been examined and found correct.
- 6. Any Trimax products proved to the satisfaction of a representative of the Company to have failed to correspond with the description or to have been defective in material or workmanship whilst being used under normal working conditions as defined by the Company will be made good or replaced at the factory if the claim is made within BOTH ninety days from the date of sale and twelve months from the date of manufacture.

No other warranty is expressed or implied, and the liability of the Company under all circumstances is expressly limited to repair or replacement of the defective unit.

No representative or other person is authorized by the Company to assume for it any other obligation or liability in connection with the sale of any goods manufactured by it.

- 7. Any variation in cost due to departure from the design or specification as quoted, will be to your account. Any request for such changes will not be considered firm unless in writing.
- 8. We reserve the right to change the design, withdraw and alter prices and/or specifications of any articles in catalogues without notice or liability. Improvement in design from time to time may slightly alter the present illustration and/or description.



SPECIAL ORDER

- 1. From our files which contain thousands of individual designs of transformers and chokes for units weighing 1 oz. up to 5 cwt. and embracing the whole field of frequencies from 0.5 c/s to 1,000,000 c/s we have selected the most generally used types for our standards. These types are manufactured in large quantities and production costs are therefore kept to a minimum. If, however, a standard type does not meet requirements, either electrically or physically, we are willing to co-operate fully in supplying a special unit.
- 2. If a "special" is unavoidable, there would be no increase in price compared with the nearest catalogue type providing the order allows a normal manufacturing quantity. In cases where this is not so, a surcharge would be applied.
- 3. When ordering a special component, full details of the usage should be given to enable us to design and supply the most suitable, economical units. If a special circuit is used, it would be helpful to enclose a copy of the circuit concerning the component with the order. Physical details covering maximum dimensions, preferred type of case and method of termination, whether panel or leads, should also be given. In the case of Power, Audio and Instrument transformers when D.C. isolation is not necessary between Primary and Secondary, and the winding ratios are comparatively low, consideration should be given to the use of an "Auto" type with the consequent saving in size and cost.
- 4. REMEMBER THAT YOU CANNOT GIVE US TOO MUCH INFORMATION.
- 5. Details needed for the accurate design of "Specials" are as follows:

POWER TRANSFORMERS

Normal range of manufacture up to 10 kVA Single Phase and 20 kVA Three Phase.

- A. Primary voltages and frequencies.
- B. Between which windings, if any, electrostatic shields are required.
- C. High tension secondary voltage under loaded conditions and if special requirements of regulation apply, these should be stated. An indication of loading with filter details should be given to allow power factor considerations (e.g. capacitor or choke input filter type of rectifier circuit).
- D. Each filament voltage and current should be given, and the working voltage of that particular filament winding with respect to earth and other winding.
- E. Application of Transformer. Since some types of extra-low voltage transformers are subject to the approval of Electric Supply Authorities, the application should be stated at the time of ordering.

AUDIO TRANSFORMERS

Normal range of manufacture up to 5 kW

- A. Impedance ratios required.
- B. Exact frequency range required and variation therein.
- C. Maximum operating level. If in db specify reference level.
- D. Details of valves or transistors preceding and following the transformer, or alternatively, source and load impedances.
- E. Primary inductance and leakage inductance, if critical.
- F. Details of unbalanced D.C. in any of the windings.
- G. Maximum acceptable insertion loss.
- H. Where more than one load is applied simultaneously the exact power required in each load.

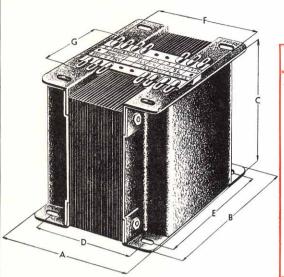
INDUCTORS

- A. Inductance, or impedance at specified frequency and A.C. voltage.
- B. D.C. present in winding and working voltage to earth.
- C. Accuracy required.
- D. Minimum "Q" of component where critical.

INSTRUMENT TRANSFORMERS

- A. Ratio/s, instrument burden and current or voltage.
- B. Preferred lead arrangements and mounting.
- C. Maximum ratio error and phase angle difference or preferably specify to relevant Standard Specification.
- D. Working voltage between windings.



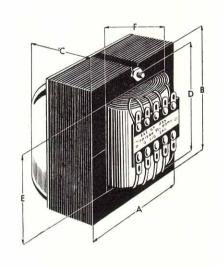


"V.B.A." MOUNTING (Reversible Mounting)

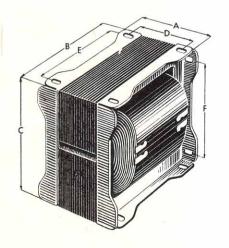
	Lam.	Stack.	A	В	C	D	Е	F	-G	Wt.
	EI-12	1 in.	3¼ in.	4½ in.	41 in.	21 in.	34 in.	23 in.	2½ in.	6 lb.
	,,	1½ in.	3½ in.	",,	,,	23 in.	,,	31 in.	,,	7 lb.
	,,	1½ in.	3¾ in.	,,	"	2§ in.	,,	3½ in.	,,	8 lb.
	"	2 in.	41 in.	,,	,,	3½ in.	,,	3% in.	"	10 lb.
	"	$2\frac{1}{2}$ in.	43 in.	,,	,,	3§ in.	"	4½ in.	,,	12 lb.
	,,	3 in.	51 in.	,,	,,	41 in.	"	4% in.	"	13½ lb.
>	EI-16	2 in.	4¾ in.	5 in.	$6\frac{1}{8}$ in.	4 in.	4¼ in.	44 in.	3 in.	16½ lb.
	,,	3 in.	5¾ in.	,,	"	5 in.	,,	54 in.	"	24½ lb.
	,,	4 in.	63 in.	"	"	6 in.	"	$6\frac{1}{4}$ in.	"	32½ lb.
	EI-18	2 in.	5¼ in.	5§ in.	6§ in.	41 in.	5 in.	5 in.	3 in.	
	,,	3 in.	64 in.	,,	,,	5½ in.	,,	6 in.	,,	
1	,,	4 in.	71 in.	,,	"	6½ in.	"	7 in.	"	
	,,	5 in.	8¼ in.	,,	22:	7₺ in.	"	8 in.	222	

"H." MOUNTING (Horizontal Mounting)

Lam.	Stack	A	В	C	D	Е	F	Wt.
EI-8	3 in.	3 in.	2½ in.	1½ in.	2½ in.	1§ in.	21/16 in.	2 lb.
,,	1 in.	,,	,,	13 in.	,,	,,	"	2½ lb.
,,	1¼ in.	,,	,,	2 in.	,,	,,	"	2½ lb.
,,	1½ in.	,,	,,	2¼ in.	,,	,,	,,	2¾ lb
,,	2 in.	,,	,,	2¾ in.	,,	"	,,	3 lb.
EIS-8	₫ in.	33 in.	3½ in.	1§ in.	2¾ in.	$2^{3}/_{16}$ in.	$2^{7}/_{16}$ in.	23 lb.
,,	1 in.	,,	,,	1% in.	,,	,,	"	31 lb
,,	14 in.	,,	,,	2½ in.	,,	,,	:27	3¾ lb.
,,	1½ in.	,,	"	23 in.	"	,,	"	41 lb
,,	2 in.	,,	,,	2% in.	,,	,,	"	54 lb.



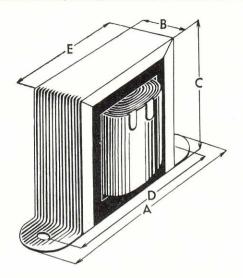
"O.C." MOUNTING (Open Clamp Mounting)



Lam.	Stack	A	В	C	D	Е	F	Wt.
EI-8	₹ in.	1% in.	2§ in.	3½ in.	13 in.	115/16 in.	28 in.	2 lb.
"	1 in.	2½ in.	,,	"	1§ in.	,,	"	24 lb.
,,	1¼ in.	2% in.	,,	"	15 in.	,,	,,	2½ lb.
,,	$1\frac{1}{2}$ in.	25 in.	"	"	2½ in.	,,	,,	2¾ lb.
	2 in.	3½ in.	27.27.		2§ in.	71.5	2000	3½ lb.
EÏS-8	3 in.	2½ in.	$3^{3}/_{16}$ in.	3½ in.	1½ in.	$2^{7}/_{16}^{"}$ in.	2¾ in.	
"	1 in.	23 in.	"	,,	13 in.	,,	"	3¼ lb.
,,	14 in.	25 in.	"	,,	2 in.	,,	"	3¾ lb.
"	1½ in.	27 in.	,,	"	24 in.	,,	"	4½ lb.
1.0	2 in.	3∰ in.	,,		2¾ in.	,,		5 lb.
EÏ-12	1 in.	21 in.	3% in.	4§ in.	1§ in.	$2\frac{1}{4}$ in.	24 in.	6 lb.
,,	1½ in.	2g in.	,,	,,	2½ in.	,,	,,	8 lb.
,,	2 in.	3½ in.	,,	,,	2§ in.	,,	,,	10 lb.
"	2½ in.	3§ in.	,,	,,	3₺ in.	,,	,,	12 lb.
,,	3 in.	4½ in.	"	,,	35 in.	"	"	14½ lb.



ILLUSTRATIONS



"S.C." (Strap Clamp Mounting)

Lam.	Stack	A	В	С	D	E	\mathbf{F}	Wt.
EI-5	§ in.	3 in.	å in.	13 in.	2½ in,	2 in.	1% in.	½ lb.
EI-6	₹ in.	3½ in.	$\frac{7}{8}$ in.	2 in.	$2\frac{7}{8}$ in.	23 in.	1¾ in.	1 lb.
"	1 in.	,,	1½ in.	,,	,,	,,	2 in.	1¼ lb
EI-7	₹ in.	3₹ in.	1 in.	$2\frac{1}{4}$ in.	3§ in.	2¾ in.	1% in.	1⅓ lb
,,	1³/22 in.	,,	1% in.	,,	,,	,,	21 in.	14 lb

"M 122" CASE

Portable. Waterproof construction. One, two or three waterproof gland nuts as outlets. Dimensions $5\frac{1}{8}$ in. x $6\frac{1}{4}$ in. x $7\frac{1}{4}$ in. H.



"M 717" COVERS

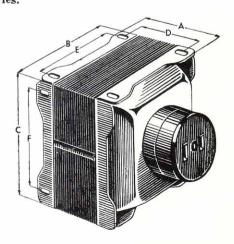
For major dimensions refer to "OC" mounting for EIS-8 or EI-12 Lamination.



"M 381" CASE

EIS-8 Lamination 51 in. x 31 in. x 37 in. H. EI-12 Lamination $6\frac{1}{8}$ in. x $4\frac{7}{8}$ in. x $6\frac{1}{8}$ in. H.

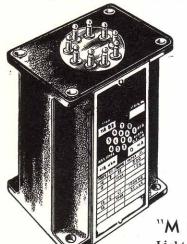
Either type can be fitted with socket, grommets or conduit entries.







STANDARD CASES FOR AUDIO AND CARRIER TRANSFORMERS

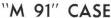




"M 66" CASE

Reversible mounting, die-cast in high conductivity non-ferrous metal.

Base, $2\frac{3}{4}$ in. x $2\frac{1}{8}$ in. Mounting, $2\frac{1}{4}$ in. x $1\frac{5}{8}$ in. Overall Height, 3½ in.



Light steel case. Base, 2½ in. x 113/16 in. Mounting, 115/16 in. x 14 in. Overall Height, 3½ in.

"M 214" CASE

Hermetically sealed, details as for "M 91".

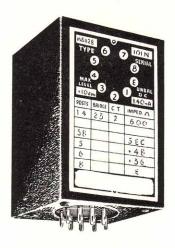
"M 143" CASE

Light steel case. Base, 2 in. x 15 in. Mounting 1½ in. x 1¼ in. Overall Height, 3¼ in.

"M 215" CASE

Hermetically sealed, details as for "M143".









"M 17" CASE

Drawn-steel case.

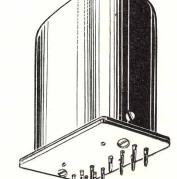
Base, 44 in. x 25 in. Mounting, 32/16 x 23/16. Overall Height, 45 in.

"M 8" CASE

Drawn-steel case.

Base, $2^{9}/_{16} \times 1^{15}/_{16}$ in. Mounting, $2\frac{1}{4}$ in. $\times 1\frac{5}{8}$ in.

Overall Height, 35 in.

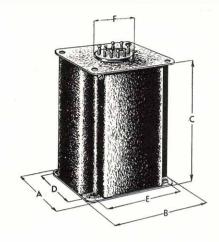


"M 455" CASE

Modified "M8" case with panel to suit Relay Set mounting P.M.G. drwg. CE534.







"M 53" CASE

(Reversible Steel Mounting)

Туре	Lam.	A	В	С	D	Е	F	Wt.
M53-1	EI-8 etc.	2% in.	3 in.	3§ in.	25/16 in.	$2^{7}/_{16}$ in.	1½ in.	3½ lb.
M53-2	EIS-8	3 in.	3 ⁷ /16 in.	41 in.	$2^7/_{16}$ in.	2 % in.	"	4½ lb.
M5 3-3	,,	$3^7/_{16}$ in.	3¾ in.	4⅓ in.	$2\frac{7}{8}$ in.	$3^3/_{16}$ in.	,,	5 lh.
M53-4	L-6 etc.	3 in.	$3^7/_{16}$ in.	5½ in.	2 ⁷ /18 in.	25 in.	,,	4½ lb.

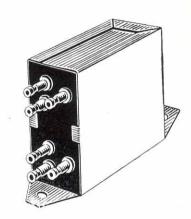
"M 294" CASE

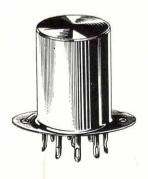
Body size $^{15}/_{16}$ in. x $2\frac{1}{4}$ in. x $1\frac{3}{4}$ in. Mounting centres $2^{11}/_{16}$ in.

"M 511" CASE

Body size $1^5/_{32}$ in, x $2\frac{1}{4}$ in, x $1\frac{3}{4}$ in. Mounting centres $2^{11}/_{16}$ in.





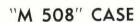


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"M 257" CASE

(Hermetically sealed)

Diameter 1 in. Height $1\frac{1}{4}$ in. + lugs Mounting centres $1^{5}/_{16}$ in.



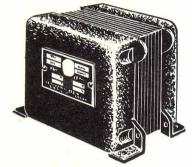
Single Hole-mounting Mu-Metal case. For Microphone or Pickup transformers

Diam, 11 in. Height 11 in. above chassis.









DIMENSIONS

A. - Overall Across Stack

B. - Overall Length

C. - Height

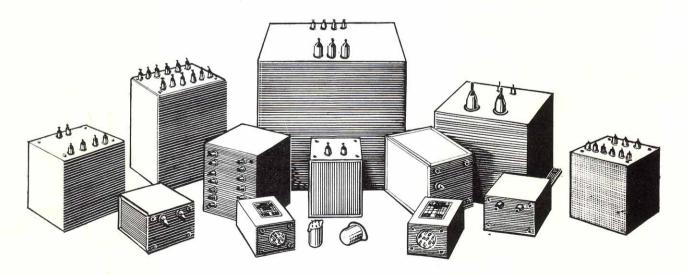
D. & E. — Mounting Dimensions F. & G. — Panel Opening

CAST IRON COVER

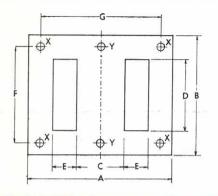
Lam.	Stack	A	В	C	D	E	F	G
BUT-1	2 in.	6 in.	8½ in.	7½ in.	5¼ in.	711/16 in.	4 in.	2§ in.
BUT-1	2½ in.	6½ in.	8½ in.	71 in.	5¾ in.	711/16 in.	4 in.	2§ in.
BUT-1	3 in.	7 in.	8½ in.	71 in.	6½ in.	711/16 in.	4 in.	2§ in.
BUT-1	4 in.	8 in.	$8\frac{1}{2}$ in.	71 in.	7¼ in.	$7^{11}/_{16}$ in.	4 in.	2§ in.
BUT-2	2 in.	7å in.	10¹/16 in.	8% in.	64 in.	9 in.	4% in.	3½ in.
BUT-2	3 in.	8½ in.	$10^{1/18}$ in.	8% in.	74 in.	9 in.	4 % in.	3⅓ in.
BUT-2	4 in.	9 1 in.	10¹/16 in.	8% in.	8¼ in.	9 in.	47 in.	3½ in.
BUT-2	5 in.	101 in.	10¹/16 in.	8% in.	91 in.	9 in.	4% in.	3½ in.

HERMETICALLY SEALED TRANSFORMERS

For use in high humidity and special conditions, sealing in this manner gives complete reliability. For dimensions of standard cases refer to pages 9 and 10.







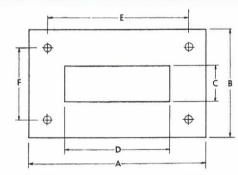


SHELL TYPE LAMINATIONS

	A		E	3	C		D		Е		F		G		Но	les
EIS-2	1.0	in.	.75	in.	.23	in.	.5	in.	.26	in.					No	ne
EI-4	1.5	in.	1.25	in.	.5	in.	.75	in.	.25	in.					Noi	ne
EI-%16	1.687	in.	1.407	in.	.562	in.	.843	in.	.281	l in.					Noi	ne
EI-5	1.878	5 in.	1.562	l in.	.625	5 in.	.937	7 in.	.312	2 in.					Noi	ne
EI-6	2.25	in.	1.875	in.	.75	in.	1.125	in.	.378	ő in.					Noi	ne
EI-7	2.628	5 in.	2.188	3 in.	.875	in.	1.31	in.	.43′	7 in.				П	Noi	1e
EI-8	3.0	in.	2.5	in.	1	in.	1.5	in.	.5	in.	2.12	5 in.			Y.218	3 in. slot
EIS-8	3.378	in.	3.063	3 in.	1	in.	2.063	3 in.	.687	7 in.	2.68	7 in.			,,	,, ,,
EI-9	3.378	in.	2.813	in.	1.125	in.	1.687	in.	.562	2 in.	2.25	in.	2.81	.3 in.	.218	in.
EI-12	4.5	in.	3.75	in.	1.5	in.	2.25	in.	.75	in.	3	in.	3.78	in.	X.218	in. D
EI-16	6	in.	5	in.	2	in.	3	in.	1	in.	4	in.	5	in.	X.22	in. D
EI-18	6.75	in.	5.63	in.	2.25	in.	3.375	in.	1.125	in.	5.625	in.	4.5	in.	X.31	in. D
BUT-1	7	in.	7	in.	2	in.	5	in.	1.5	in.					Nor	ie
BUT-2	8.5	in.	8.5	in.	2,5	in.	6	in.	1.75	in.					Nor	ne
BUT-5	10.5	in.	11.75	in.	3.5	in.	8.25	in.	1.75	in.				ļ.	Nor	ie

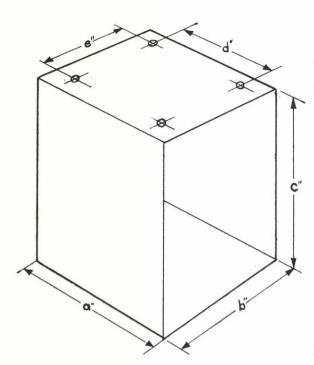
CORE TYPE





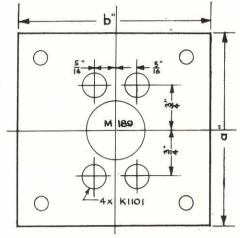
Туре	A		В		C		D		E		F	Holes
L-3	1.875	5 in.	1.125	in.	.378	5 in.	1.125	in.				None
L-4	2.5	in.	1.5	in.	.5	in.	1.5	in.	2 in.	1	in.	.14 in. D
L-6	3.75	in.	2.25	in.	.75	in.	2.25	in.	3 in.	1.5	ō in.	.22 in. D
LS-6	3.75	in.	2.75	in.	1.25	in.	2.25	in.	3 in.	2	in.	.22 in. D
U-8	5	ın,	3	in.	1	in.	3	in.	4 in.	2	in.	.22 in. D



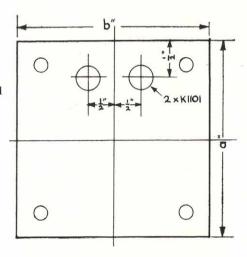


Hermetically Sealed, Insert Mounted Cases. Glass or Ceramic Seals.

Standard Terminal Arrangement Transformer

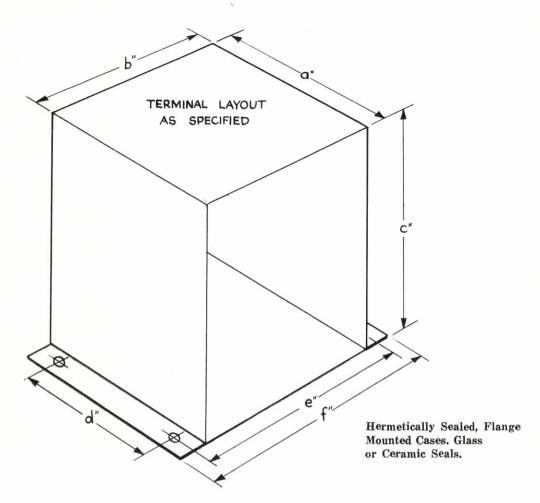


Standard Terminal Arrangement Choke



Туре	Lam. Size	Max. Stack	A	В	C	D	E	Materials	Inserts
A	EI-8	1¼ in.	2½ in.	2¾ in.	3¾ in.	14 in.	2 in.	Tinplate	5/32 in. W
В	EI-8	2 in.	31 in.	2¾ in.	3¾ in.	2½ in.	2 in.	Tinplate	5/32 in. W
C	EIS-8	1½ in.	2¾ in.	3¼ in.	$4\frac{1}{4}$ in.	2 in.	2½ in.	Tinplate	5/32 in. W
D	EIS-8	2 in.	34 in.	31 in.	44 in.	3 in.	2½ in.	Tinplate	⁵ / ₃₂ in. W
Е	EI-12	1½ in.	3½ in.	4 in.	$5\frac{1}{4}$ in.	2½ in.	3 in.	Terne 22G	5/32 in. W
F	EI-12	2 in.	4 in.	4 in.	$5\frac{1}{4}$ in.	3 in.	3 in.	Terne 22G	⁵ / ₃₂ in. W
G	EI-12	3 in,	5¼ in,	4 in.	5½ in.	44 in.	3 in.	Terne 22G	5/22 in. W





Туре	Lam. Size	Max. Stack	A	В	С	D	E	F	Holes	Case Material	Base Material
K	EI-16	2½ in.	5½ in.	5½ in.	7½ in.	3¼ in.	6¼ in.	7 in.	17/64 in.	20g MS	18g MS
L	EI-16	4 in.	7 in.	5½ in.	7½ in.	5 in.	64 in.	7 in.	17/64 in.	20g MS	18g MS
M	BUT-1	3½ in.	7½ in.	8¾ in.	7½ in.	$5\frac{1}{2}$ in.	9½ in.	101 in.	¹⁷ /64 in.	18g MS	16g MS
N	BUT-1	5 in.	9½ in.	8¾ in.	8½ in.	7½ in.	9½ in.	10¼ in.	17/64 in.	18g MS	16g MS
P	BUT-2	3½ in.	8½ in.	10½ in.	10 in.	$6\frac{1}{2}$ in.	11 in.	11¾ in.	17/64 in.	18g MS	16g MS
Q	BUT-2	5 in.	10 in.	10¼ in.	10 in.	8 in.	11 in.	11¾ in.	¹¹ / ₃₂ in.	18g MS	16g MS
R	BUT-5	4 in.	9 in.	13½ in.	13 in.	7 in.	15 in.	16½ in.	13/32 in.	16g MS	16g MS
S	BUT-5	6 in.	11 in.	13½ in.	13 in.	9 in.	15 in.	16½ in.	13/ ₃₂ in.	16g MS	16g MS
T	BUT-6	3½ in.	9 in.	9¾ in.	8 in.	7 in.	10¾ in.	11¾ in.	13/32 in.	18g MS	16g MS
U	BUT-6	5 in.	11 in.	9¾ in.	8 in.	9 in.	10¾ in.	11¾ in.	¹³ / ₃₂ in.	18g MS	16g MS

POWER TRANSFORMERS



Radio and Amplifier Types for 50-100 c/s operation

- 1. In general, the types listed have been designed for a capacitor input filter. If a choke filter is used the H.T. current may be increased by approximately 25%.
- 2. * Indicates that the design is for a choke input filter.
- 3. Ratings are based on a maximum ambient temperature of 40°C. If used with a higher ambient, the loading must be reduced.
- 4. 240V HAS BEEN ADOPTED AS THE STANDARD SUPPLY VOLTAGE IN MOST AREAS OF AUSTRALIA, AND ALL CATALOGUE TYPE TRANSFORMERS ARE DESIGNED FOR THIS VOLTAGE. Additional primary taps can, if required, be supplied at an extra cost. In such cases it is suggested that a similar tapping arrangement to that used with "Trimax" Tap-changing Fuse Holder be used, as this gives 10V variations from 200 250V with the minimum number of taps.
- 5. For physical details refer to the dimension sheets.
- 6. Numbers underlined indicate standard transformers normally carried in stock.

_			Second	laries		Mounting
Catalogue No.	Replaces Type	High	W. D.C.		Filaments	Lamination and Stack
15.000		Tension Volts A.C.	M.A. D.C.	5v	6.8v	and Stack
TP-4300		150/150	15		1a	SC-EI-6 ¾"
TP-2502		150/150	30		2a	SC-EI-7 ¾"
TP-4301	TP-1788	150/150	40		2a	H-EI-8 1"
TP-4302		240/240	40		1.5a, 1.5a	H-EI-8 14"
TP-4303	TP-2240	285/285	40		2a	H_EI_8 14'
TP-4304	TP-2241	265/265	50		2.5a	H-EI-8 14"
TP-4305	TP-1886	385/385	60	2a	2a	H_EIS_8 1
TP-4306	TP-1623	265/265	70		2a, 2a	H-EIS-8 1
TP-4307	1	310/310	70		2a, 2a	H-EIS-8 1
TP-4308	TP-2242	285/285	80	2a	2a	H-EIS-8 1
TP-4309	TP-2488	285/285	80	2a	2a, 2a	H-EIS-8 1-
TP-4310	TP-2489	325/325	80	2a	2a, 2a	H-EIS-8 1-
TP-4311	TP-2490	385/385	80	2a	1.5a, 1.5a	H-EIS-8 1-
TP-4312	TP-2377	285/285	100	2a	1.5a, 1.5a	H-EIS-8 1-
TP-4313	TP-2491	325/325	100	2a	2a, 2a	VBA-EI-12 1'
TP-4314	TP-2243	385/385	100	2a	2a, 2a	VBA-EI-12 1'
TP-4315	rawatan yancastan nasa	410/410	100	3a	3a, 3a	VBA-EI-12 1
TP-4316		285/285	125	3a	4a, 4a, ct	VBA-EI-12 1-
TP-4317	TP-2244	300/300	125	2a	2a, 2a	VBA-EI-12 1
TP-4318	TP-2245	385/385	125	2a	2a, 2a	VBA-EI-12 1:
TP-4319	TP-2246	325/325	150	2a	2a, 2a	VBA-EI-12 1:
TP-4320	TP-2247	385/385	150	2a	2a, 2a	VBA-EI-12 1-
TP-4321	TP-2249	310/310	175	2a	2a, 2a	VBA-EI-12 1
TP-4322	TP-2256	400/400	175	3a	3a, 3a	VBA-EI-12 2'
	3					



ER TRANSFORMERS Radio and Amplifier Types

			Secon	daries		Mounting
Catalogue No.	Replaces Type	High			Filaments	Lamination and Stack
210.	2,00	Tension Volts A.C.	M.A. D.C.	5v	6.3v	and Stack
TP-2077		425/425	175	3a	3a, 3a	VBA-EI-12 3"
		tapped	}	For Will		
		325/325	25	Amplifie	r	100
TP-4323	TP-1904A	700/700	175	3a		VBA-EI-12 3"
TP-2420		150/140/	200		₹	OC-EIS-8 1‡"
		130/130/				
		140/150				
TP-4324		325/325	200	3a	3a, 3a	VBA-EI-12 2"
TP-4325	TP-1901	400/400	200	3a	3a, 3 a	VBA-EI-12 2½"
TP-4326	TP-1902A	500/500	200	3a	3a, 3a	VBA-EI-12 3"
TP-4327	TP-1905A	400/400	250	3a	3a, 3a	VBA-EI-12 3"
TP-4328	TP-2435	450/450	250	3a	3a, 3a	VBA-EI-12 3"
TP-4329		600/500/	250★			VBA-EI-12 3"
		500/600				
TP-4330		565/565	250★	3a	3a, 3 a	VBA-EI-12 3"
TP-4331	TP-2258	565/565	250	4a	4a, 4a	VBA-EI-16 2"
TP-4332	TP-1913	1050/1050	250★	J.	× 50	VBA-EI-16 3"
	- 20	or		n	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- L
		750/750	300★		* n	
TP-4333		350/350	400	4a	4a, 4a, 2a	VBA-EI-16 2"
TP-4334		440/440	400★	4a	4a, 4a	VBA-EI-16 2"
TP-4335		650/650	400★		el.	VBA-EI-16 23"
TP-4336	TP-2857	1500/1500	400★		× _E	BUT-I 2"
		VOLTAGE	DOUBLER	TRAN	SFORMERS	
TP-3980		115, 125	100		2.5a	OC-EIS-8 1"
TP-3981		115, 125	150		3a	OC-EIS-8 1½"
TP-4407		115, 130	160		3a, 2.5a ct	VBA-EI-12 1"
TP-3982		115, 125	250		4a, 4 a ct	VBA-EI-12 1½"
					NSFORMER	
-	For use	with diodes h	naving a P.I	.V. ratin	g not less than	400V
TP-4337		240	200		3a, 3a	VBA-EI-12 1¼"
TP-4338		240	300		4a, 4a	VBA-EI-12 2"
	This type		CORDER Current Shi		FORMER educe the exter	nal field
TP-2171B	/	270/270	60		3a	H-EIS-8 1¼"

POWER TRANSFORMERS Filament Types for 50-100 c/s operation



- Ratings are based on a maximum ambient temperature of 40°C. If used with a higher ambient, the loading must be reduced.
- 2. 240V HAS BEEN ADOPTED AS THE STANDARD SUPPLY VOLTAGE IN MOST AREAS OF AUSTRALIA AND ALL CATALOGUE TYPE TRANSFORMERS ARE DESIGNED FOR THIS VOLTAGE. On most types additional primary taps can, if required, be supplied at an extra cost. In such cases it is suggested that a similar tapping arrangement to that used with the "Trimax" Tap-changing Fuse Holder be used, as this gives 10V variations from 200-250V with the minimum number of taps.
- 3. For physical details refer to the dimension sheets.
- 4. Numbers underlined indicate standard transformers normally carried in stock.

Type 2.5 5 6.3 10 Test TP-4339 TP-862 2a 1 TP-4340 TP-2653 3a 1.5 TP-4341 TP-2334 3a 1 TP-4342 TP-2655 5a 1.5 TP-4343 TP-2654 6a 1.5 TP-4344 TP-1684A 3a, 3a 1 TP-4345 TP-2856A 10a ct 5	Catalogue	Replaces		Seco	ndary Volts		KV	Mounting
TP-4340 TP-2653 3a 1.5 TP-4341 TP-2334 3a 1 TP-4342 TP-2655 5a 1.5 TP-4343 TP-2654 6a 1.5 TP-4344 TP-1684A 3a, 3a 1 TP-4345 TP-2856A 10a ct 5		Turno		10	Test	Lamination and and Stack		
TP-4347 TP-2596 6a, 4a 1.5 TP-4348 TP-2742 6.5a ct 1.5 TP-4349 TP-1550B 3a, 3a, 3a, 3a, 3a ct 1 TP-4350 TP-2643 3a, 3a, 3a, 3a 1.5 TP-4351 TP-2515 10a, 10a 2	TP-4339 TP-4340 TP-4341 TP-4342 TP-4343 TP-4344 TP-4345 TP-4346 TP-4347 TP-4348 TP-4349 TP-4350 TP-4351	TP-862 TP-2653 TP-2334 TP-2655 TP-2654 TP-1684A TP-2856A TP-2497 TP-2596 TP-2742 TP-1550B TP-2643 TP-2515		3a 6a 3a 3a, 3a,	2a 3a 5a 3a, 3a 3a, 3a, 6a, 4a 3a, 3a, 3a, 3a ct 3a, 3a, 3a	6.5a ct	1 1.5 1.5 1.5 1 5 3 1.5 1.5 1 1.5 2	SC-EI-6 \(\frac{2}{4}\)" SC-EI-6 \(\frac{1}{4}\)" SC-EI-6 \(1''\) H-EI-8 \(1''\) H-EI-8 \(1\)\" H-EI-8 \(1\)\" OC-EIS-8 \(1\)\" H-EIS-8 \(1\)\" VBA-EI-12 \(1''\) WBA-EI-12 \(1\)\" M336-EI-12 \(1\)\"

Low Voltage Adjustable Power Supply

TP-4358	Prim: 240V	Secondaries: 1V, 2V, 4V, 4V, 10V, 10V (Six separate windings with marked polarity.) All 1.8a.	OC_EIS_8 1‡"
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FILTER CHOKES

- The inductance figures given are for rated direct current, and used under conditions equivalent to a
 capacitor input filter. For choke input filters which have a higher ripple voltage, the inductance would
 increase by approximately 10%.
- 2. These chokes may be operated safely at the maximum D.C. current shown but the inductance will decrease by approximately 25%.
- 3. Numbers underlined indicate standard chokes normally carried in stock.

Catalogue	D.C.	MA	Inductance	D.C. Resistance	Maximum D.C.	Mounting Lamination
Catalogue No.	Rated	Maximum	Henries	Ohms	Working Volts	and Stack
TZ-460	10	15	50	2,200	300	SC_EI_5 §"
TZ-461	30	40	30	900	300	SC-EI-6 ¾"
TZ -5	40	50	10	500	300	SC-EI-55"
TZ-277	40	60	15	500	300	SC-EI-6 3"
TZ-56	60	100	20	350	500	OC-EI-8 1"
TZ-462	60	100	30	600	500	OC-EI-8 1"
TZ-3	100		20	300	500	OC-EIS-8 1"
TZ-46 3	100	150	20	400	500	OC-EI-8 1¼"
TZ-844	100	120	0.1	20	250	SC-EIS-2 ¼"
TZ-57	120		15	200	500	OC-EIS-8 1"
TZ-28	125		20	200	750	VBA-EI-12 1"
TZ-464	125	150	20	375	500	OC-EIS-8 1"
TZ-84	150		15	150	750	VBA–EI–12 1⅓"
TZ-465	150	200	15	210	500	OC-EIS-8 1¾"
TZ-466	200	250	10	100	750	VBA-EI-12 1"
TZ-673	240		1	43	1,000	SC-EI-6 ¾"
TZ-7	250		7.5	45	750	VBA-EI-12 1½"
TZ-469	250	300	15	100	750	VBA–EI–12 2"
TZ-1	250	-	12	65	750	VBA-EI-12 2"
TZ-840	250	300	1	15	500	SC-EI-7 ¾"
TZ-843	250	300	0.15	5	250	SC-EI-4 ½"
TZ-63	300	400	10	50	750	VBA-EI-12 3"
TZ-841	300		1	35	500	SC–EI–6 ¾"
TZ-842	500		0.1	5	250	SC-EI-5 §"
TZ-394	600	800	12	60	1,000	VBA-EI-16 2"
TZ-11	1A	2A	0.05	0.5	250	SC-EI-6 &"
TZ-344	5A	10A	$7\mathrm{mH}$	0.1	500	OC-EIS-8 14

SWINGING CHOKES

-				1	1			•
	TZ-467	250/25	300	3–15	40	7 50	OC-EIS-8 1¼"	
	TZ-47	250/25		5–25	40	750	VBA-EI-12 1"	
	TZ-610	375/100		5–15	92	2,500	VBA-EI-12 2"	
	TZ-550	1.5A/10mA		0.5–2	2.25	750	VBA-EI-16 4"	
	- ADVENT - MATERIAL AND			1000				

POWER TRANSFORMERS



"Auto" types for increasing/decreasing mains voltage 50-100 c/s

- 1. Auto type power transformers offer considerable economy in physical size and price as compared with their double wound equivalents. However their use is not permitted by Electrical Supply Authorities for certain conditions of operation, and this point should be checked before selecting this type in preference to the double wound.
- 2. Ratings are based on a maximum ambient temperature of 40 degrees C. with a temperature rise not exceeding 50 degrees C. If used with a higher ambient, the loading must be reduced.
- 3. In cases where the secondary is terminated in a two pin socket the primary is connected to an approved connector box.
- 4. For physical details refer to the dimension sheets.
- 5. Numbers underlined indicate standard transformers normally carried in stock.

Catalogue No.	Primary Voltage	Secondary Voltage	VA Rating	Mounting Lamination and Stack
TP-185A	240	115	100	WC-EIS-8 1"
TP-16A	240	115	200	VBA-EI-12 1" Sec. 2 Pin Socket
TP-17A	240	115	300	VBA-EI-12 $1\frac{1}{2}$ " Sec. 2 Pin Socket
TP-18A	240	115	400	VBA-EI-12 2" Sec. 2 Pin Socket
TP-69B	240	115	600	VBA-EI-12 3" Sec. 2 Pin Socket
TP-2499	240	115	1,000	VBA-EI-16 3" Sec. 2 Pin Socket
TP-1803	240	115	1,500	VBA-EI-16 4" Terminal Panel
TP-1724	200	240	500	VBA-EI-12 1¼" Sec. 2 Pin Socket
TP-2259	200	240	1,500	VBA-EI-12 3" Sec. 2 Pin Socket



POWER TRANSFORMERS Step-Down Double Wound Types for 50-100 c/s operation

- Transformers with suffix (App.) are approved by the State Electricity Commission for use as Extra Low Voltage Transformers and are manufactured to the relevant Specification, S.A.A. No. C.126-1958 Ap.
- Ratings are based on a maximum ambient temperature of 40 degrees C. If used with a higher ambient, the loading must be reduced.
- 3. For physical details refer to the dimension sheets.
- 4. In cases where the secondary is terminated in a two pin socket the primary is connected to an approved connector box.
- 5. Numbers underlined indicate standard transformers normally carried in stock.

Catalogue No.	Primary Voltage	Secondary Voltage	VA Rating	Mounting Lamination and Stack
TP-4355	240	12	50	OC-EIS-8 1¼"
TP-1454A (App.)	240	12	100	VBA-EI-12 1" Sec. 2 Pin Socket (polarised).
TP-2500 (App.)	240	12	200	VBA-EI-12 2" & M149 Terminal Box
TP-1780 (App.)	230	32	70	M381–EIS–8 1¼"
TP-400A (App.)	240	32	100	M122-EI-12 1"
TP-2501 (App.)	240	32 ct	200	M122–EI–12 2"
TP-399B (App.)	240	32 ct	300	M122–EI–12 3"
TP-2263A (App.)	230	32	5 7 5	VBA-EI-16 3" & M149 Terminal Box
TP-2580	415	32	7 50	VBA-EI-16 4" & M149 Terminal Boxes
TP-2985	240	32	1,050	BUT–1 2" Shrouds and Panel
TP-4356	240	32	1,500	BUT 1 3" Shrouds and Panel
TP-208A	240	110	65	WC-EIS-8 1¼" Sec. 2 Pin Socket
TP-1633A	240	110	150	VBA-EI-12 1½" Sec. 2 Pin Socket
TP-1798A	240	110	300	VBA-EI-12 3" Sec. 2 Pin Socket
TP-4358	415	110	550	VBA-EI-12 3" Sec. 2 Pin Socket
TP-3345	240	110	1,000	BUT–1 2" Shrouds and Panel
TP-3591	415	110	1,000	BUT-1 2" Shrouds and Panel
TP-2264	240	115	550	VBA-EI-16 3" Sec. 2 Pin Socket
TP-2496	240	115	750	VBA-EI-16 4" Sec. 2 Pin Socket
TP-3138	230, 240	115	1,000	BUT–1 2" Shrouds and Panel
TP-3828	240	110, 115, 120	1,500	BUT–1 3" Shrouds and Panel
TP-3395	240	115	2,000	BUT–5 2½" Angle Frame and Panel
TP-3794	240	110	7,500	BUT-5 7½" Angle Frame and Panel

ISOLATION TRANSFORMERS

These types are fitted with Electrostatic shields

NOTE: WHEN ORDERING PLEASE SPECIFY TERMINATIONS REQUIRED.

POWER TRANSFORMERS Auxiliary Control Types for 50-100 c/s operation



- 1. These transformers are selected from our files and are representative of types generally supplied.
- 2. Should a transformer with different voltages or currents be necessary, please check the details on Page 2 for SPECIAL ORDERS, and include this information with your order.
- Orders should include the application as some extra-low-voltage transformers are subject to the Approval
 of Electricity Supply Authorities. Australian Standard Specification C.126/58 defines these transformers
 as follows:

"This specification prescribes safety requirements for fixed and portable single-phase transformer units rated at not more than 1 kVA, suitable for connection on the input side to low or medium voltage circuits, and intended for operating appliances or equipment rated at 32 volts or less.

The specification does not apply to the following types of transformer:

- (i) Battery charging transformers.
- (ii) Instrument transformers.
- (iii) Transformers for use in mines.
- (iv) Railway signalling transformers.
- (v) Transformers for use in electronic equipment and the like.
- (vi) Transformers which are incorporated in equipment in such a way that all parts of the secondary circuit are either insulated for 250 volts or protected from inadvertent contact.
- (vii) Constant current transformers."
- 4. Transformers listed below can only be used for applications covered by (i) to (vii) above. For usage where approval is necessary refer to Page A6.

Catalogue No.	Primary Voltage	Secondary Voltage	Rating	Mounting Lamination and Stack
TP-3099	240	12	6VA	SC-EI-6 ¾"
TP-2821	240	22	30VA	SC-EI-8 1"
TP-3146	230	30	20VA	SC-EI-7 1"
TP-3588	110	20, 22, 24	200VA	VBA-EI-12 2"
TP-3643	230	20, 22, 24	200VA	VBA-EI-12 2"
TP-3863	230, 240	24	300VA	VBA-EI-12 3"
TP-3622	230	20, 22, 24	350VA	VBA-EI-16 2"
TP-3346	240	24	500VA	VBA-EI-16 3"
TP-2656	220, 240, 260	62	90VA	VBA-EI-12 1"
TP-3862	230, 240	110	50VA	OC-EIS-8 1¼"
TP-4353	240	1V, 2V, 4V, 4V, 10V, 10V (Six separate windings with marked polarity.)	All 1.8 Amp.	OC-EIS-8 1¼"



POWER TRANSFORMERS

Special Purpose Types

- 1. These transformers are selected from our files and are representative of types generally supplied.
- 2. Should a transformer with different voltages or currents be necessary, please check the details on Page 2 for Special Orders, and include this information with your order.

FURNACE IGNITION TRANSFORMERS

TP-3073B

240/5,000-5,000V 20 mA

Specially designed for Spark Ignition

Case Size 5" x 84" x 5"H

TP-4354

240/12V 1.2A, 3V 21A

Specially designed for Hot Wire Ignition

EI-12 1" Open Clamp Mounting

BATTERY CHARGER TRANSFORMERS

Using Bridge Type Selenium Rectifiers

TP-2069A

240/6V 6A or 12V 3A DC

OC-EIS-8 11"

TP-3100

240/6 or 12V 10A DC

VBA-EI-12 2"

SATURABLE REACTORS

- 1. These units are specials and made to order only. The two types listed are representative of types supplied and are designed for the control of 240v 50 c/s by 130v 100 mA D.C. The designed range of control is from 76v-228v.
- 2. Should you require reactors with different ratings or control, please supply complete information with your enquiry.

TZ694

2 KVA

BUT-1 11/2"

TZ695

200 VA

BUT-5 1½"

INSTRUMENT TRANSFORMERS



Metering Current Types for 50 c/s operation

- 1. These transformers are double wound and manufactured to Australian Standard Specification C.45 using only the best materials. They are tested and inspected in our own test laboratory to ensure complete reliability.
- 2. While not normal stock items they are representative of the types available, and are listed as standards. However, if a special is unavoidable, refer to Page 2 covering Special Orders and include this information with your order.

Catalogue No.	Ratio in Amperes	Burden	Ratio Accuracy	Class	Mounting Lamination and Stack
					_
TC-164	10/5	15 VA	1%	В	M273–L6 1"
TC-165	15/5	15 VA	1%	В	M273–L6 1"
TC-166	20/5	15 VA	1%	В	M273–L6 1"
TC-167	30/5	15 VA	1%	В	M273-L6 1"
TC-168	50/5	15 VA	1%	В	M273-L6 1"
TC-169	75/5	15 VA	1%	В	M273–L6 1"
TC-170	100/5	15 VA	1%	В	M273-L6 1"
TC-130	300/5	15 VA	1%	BM	M273–L6 1‡"
TC-171	50/5	15 VA	0.5%	A	M273-L6 14"
TC-172	100/5	15 VA	0.5%	A	M273-L6 1¼"
					¥

Auto Transformers for Multi Range Meters (Designed for inclusion in the meter case)

TC-2	2.5, 5, 10, 25, 50, 100, 250, 500, MA 1, 2.5, 5, 10A/1.11 mA Using 0-1 MA Meter 1,000 oh	1,000 ohms		fier	L4 ½"
TC-15 TC-16	1, 2.5, 5, 10, 25, 50, 100A/1A 50, 100, 250, 500, mA, 1, 2.5/1A	1 VA 1 VA	1% 1%	B B	S/C-EI-6 4" S/C-EI-6 4"



INSTRUMENT TRANSFORMERS

- 1. These transformers are double wound and manufactured to Australian Standard Specification C.45 using only the best materials. They are tested and inspected in our own test laboratory to ensure complete reliability.
- 2. For the listed protection transformers, an overcurrent factor of 50 for 0.5 seconds has been selected. With 60 Volts applied to the secondary and the primary open-circuited, the exciting current does not exceed 5 Amps. This condition corresponds to 12 times the rated secondary current.
- 3. While not normal stock items they are representative of the types available, and are listed as standards. However, if a special is unavoidable, refer to Page 2 covering Special Orders and include this information with your order.

Protection Current Transformers

5/5A 0/5A	15 VA 15 VA	1%	C	440	OC-EI-12 1¼"
)/5A	15 VA	1.00			
	10 /11	1%	C	440	OC-EI-12 $1\frac{1}{2}$ "
)/5A	15 VA	1%	C	440	OC–EI–12 1½"
)/5A	15 VA	1%	C	440	OC–EI–12 1½"
	A 18 12				
	2	14		,, ,,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Potential Transformers

TC-181 TC-125	400/110V 110/240V	15 VA 10 VA	1% 1%	B B	VBA-EI-12 1½" VBA-EI-12 1¼"
	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				

AUDIO TRANSFORMERS



- 1. Frequency characteristics: Every unit is guaranteed to have a frequency variation not exceeding ± 1 db from 30 to 10,000 cycles when used under correct conditions. To keep within the guaranteed variation at high frequencies, it is essential to reduce external secondary capacities to a minimum. Actual production units usually give performances far better than this. The transformers are designed for use with secondary loaded, and the frequency characteristic is, therefore, a function of power, not of voltage transfer, obtained by careful design without making use of winding resonances. For the best high-frequency response, it is desirable to keep the capacity across the secondary of high impedance input transformers to a minimum, and for this reason pentodes are preferable to triodes because of the large difference in input capacity.
- 2. Shielding: (a) Electro-magnetic: All types listed employ an astatic hum balancing structure with primary and secondary coils each in two separate sections. Improvement of this type over ordinary shell cores is of the order of 40 to 50 db depending on the uniformity of the interfering field. An additional advantage of this construction is the great improvement in symmetry and balance of coil sections. Outer cases of mild steel or high conductivity non-ferrous metal also give additional shielding. For particularly low-level operation, where freedom from hum pick-up is absolutely essential, special types are offered which, in addition to the above incorporate triple shields of high permeability nickel iron alloy. The additional improvement is approximately 40 db.
 - (b) Electro-static: Transformers are guarded against this type of external interference by the use of an efficient outer case. The high conductivity, non-ferrous case is best for this purpose.
 - (c) Longitudinal currents: The transfer of longitudinal currents from primary to secondary is attentuated to a considerable degree by the provision of high-conductivity shields between windings, These shields also improve the balance to ground of the windings.
- 3. Cases: The first case listed is standard and should another type be necessary, please specify by number. Where the M66 case is standard the transformers can be supplied in the special PMG relay set mounting case M455.
- 4. Multi shielded transformers are designated by "MS".
- 5. † indicates that these transformers have, at 1Kc, better than 80 db of balance between the two halves of the primary.
- 6. Numbers underlined indicate standard transformers normally carried in stock.

Mixing (Line to Line) Transformers

For Line, Microphone or Pickup Matching Balanced or Unbalanced

Catalogue		Impedance in Ohms		Turns	Max.	Frequency Variation	Unbal.
No.	Case Type	Primary	Secondary	Ratio	Level db m	db /Cycles	DCmA
TA-636	M66, M91, M8	50	200	1–2	+18	±0.5/30-40Kc	0
TA-406A	M66, M91, M8	50	600	1-3.46	± 18	$\pm 0.5/30 - 40 \text{Kc}$	0
TA-101	M66, M91, M8	200	200	1–1	+18	$\pm 0.5/30 - 40 \text{Kc}$	0
TA-168A	M66, M91, M8	200	600	1-1.73	+18	$\pm 0.5/30 - 40 \text{Kc}$	0
TA-37A	M66, M91, M8	600	600	1–1	+18	$\pm 0.5/30 - 40 \text{Kc}$	0
TA-1774†	M66, M91, M8	150	600	1–1	+18	$\pm 1/30 - 15$ Kc	0
TA-1693†	M66, M91, M8	600	600	1–1	+18	$\pm 1/30 - 15$ Kc	0
TA-793	M17	600	600	1–1	+36	$\pm 1/20 - 15 \text{Kc}$	0
TA-1094A	M17	600	1,200	1–1.41	+36	$\pm 1/20$ –15 Kc	0
		м	ulti Shielde	d Types			
MS-944	M66, M143	50	200	1–2	+10	$\pm 0.5/30 - 40 \text{Kc}$	0
MS-866	M66, M143	50	600	1-3.46	+10	$\pm 0.5/30 - 40 \text{Kc}$	0
MS-945	M66, M143	200	200	1–1	+10	$\pm 0.5/30 - 40 \text{Kc}$	0
MS-946	M66, M143	200	600	1-1.73	+10	$\pm 0.5/30 - 40 \text{Kc}$	0
MS-896	M66, M143	600	600	1–1	+10	$\pm 0.5/30-40$ Kc	0

Input (Bridging) Transformers

From 50-600 ohm Lines to Single or Push-Pull Grids

TA-17 TA-731A	M66, M91, M8 M66, M143	10,000 12,500		1–3.16 1–2.83	+18 +10	$\pm 0.5/30 - 12$ Kc $\pm 1/20 - 20$ Kc	0
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AUDIO TRANSFORMERS

High Quality Low Level Types

Input (Line to Grid) Transformers

Line, Microphone or Pickup to Single or Push-Pull Grids

Catalogue	Cons There	Impedan	ce in Ohms	Turns	Max. Level dbm	Frequency Variation db /Cycles	Unbal. DCmA
No.	Case Type	Primary	Secondary	Ratio			
TA-61	M66, M91, M8	50	100,000	1-44.7	+18	±0.5/30–12Kc	0
$\overline{\text{TA}}$	M66, M91, M8	200	100,000	1-22.4	+18	$\pm 0.5/30 - 12$ Kc	0
TA-82	M66, M91, M8	600	100,000	1-12.9	+18	$\pm 0.5/30 - 12$ Kc	0
$\overline{TA-1076}$	M66, M91, M8	600	50,000	1-9.2	+18	$\pm 1.0/20 - 50 \text{Kc}$	0
	NOTE: On TA-1	076 extern	al Secondary	y capacity mus	st not exce	eed 30 pf.	
		M	Iulti Shielde	d Types			
MS-860	M66, M143	50	100,000	1-44.7	+10	$\pm 1.0/30 - 10 \text{Kc}$	0
MS-837	M66, M143	200	100,000	1–22.4	+10	$\pm 1.0/30 - 10 \mathrm{Kc}$	0
MS-878	M66, M143	600	100,000	1-12.9	+10	$\pm 1.0/30 - 10 \text{Kc}$	0
$\overline{\text{MS-977}}$	M91	50	60,000	1-34.8	+18	±1.0/30-15Kc	0
	NOTE:	MS-977 is	used with	Secondary un	terminated		
			_	1			
		Inters	tage Ira	anstormer:	5		
	Single or			ansformer: Plates to Pus		ds	
TA-3	Single or M66, M91, M8					±1.0/30–10Kc	0
	M66, M91, M8	Push-Pull 40,000	160,000 ohm	Plates to Pus	h-Pull Gri Whole Sec. 120V P	±1.0/30–10Kc	
	M66, M91, M8	Push-Pull 40,000	10,000 ohm 160,000	Plates to Pus	Whole Sec. 120V P	±1.0/30–10Kc	
1 t	M66, M91, M8	Push-Pull 40,000	10,000 ohm 160,000	Plates to Pus 1–2 ne) Trans	Whole Sec. 120V P	±1.0/30–10Kc	
TA-835	M66, M91, M8 Out	Push-Pull 40,000 out (Pla Single 7,00	10,000 ohm 160,000 te to Li	Plates to Pus 1–2 ne) Trans m Plates to Li	whole Sec. 120V P	±1.0/30–10Kc	
TA-835 TA-833	M66, M91, M8 Outp M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000	10,000 ohm 160,000 te to Li 00-10,000 oh 50	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1	Whole Sec. 120V P formers ne +24	±1.0/30–10Kc ±1.0/30–12Kc	6.5
TA-835	M66, M91, M8 M66, M91, M8 M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000 20,000 20,000	10,000 ohm 160,000 te to Li 00-10,000 oh 50 200 600	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1 10-1 5.8-1	whole Sec. 120V P formers ne +24 +24	±1.0/30–10Kc ±1.0/30–12Kc ±1.0/30–12Kc	6.5 6.5
TA-835 TA-833 TA-733B	M66, M91, M8 M66, M91, M8 M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000 20,000 20,000 sh-Pull 7,0	10,000 ohm 160,000 te to Liu 00-10,000 oh 50 200 600 00-10,000 oh	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1 10-1 5.8-1 m Plates to I	Whole Sec. 120V P formers ne +24 +24	±1.0/30-10Kc ±1.0/30-12Kc ±1.0/30-12Kc ±1.0/30-12Kc	6.5 6.5 6.5
TA-835 TA-833	M66, M91, M8 M66, M91, M8 M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000 20,000 20,000	10,000 ohm 160,000 te to Li 00-10,000 oh 50 200 600	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1 10-1 5.8-1 m Plates to I Ratio	whole Sec. 120V P formers ne +24 +24	±1.0/30–10Kc ±1.0/30–12Kc ±1.0/30–12Kc	6.5 6.5
TA-835 TA-833 TA-733B TA-931	M66, M91, M8 M66, M91, M8 M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000 20,000 20,000 sh-Pull 7,0	10,000 ohm 160,000 te to Liu 00-10,000 oh 50 200 600 00-10,000 oh	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1 10-1 5.8-1 m Plates to I	Whole Sec. 120V P formers ne +24 +24	±1.0/30-10Kc ±1.0/30-12Kc ±1.0/30-12Kc ±1.0/30-12Kc	6.5 6.5 6.5
TA-835 TA-833 TA-733B	M66, M91, M8 M66, M91, M8 M66, M91, M8 M66, M91, M8	Push-Pull 40,000 out (Pla Single 7,00 20,000 20,000 20,000 sh-Pull 7,00 20,000	10,000 ohm 160,000 te to Li 00-10,000 oh 50 200 600 00-10,000 oh 600	Plates to Pus 1-2 ne) Trans m Plates to Li 20-1 10-1 5.8-1 m Plates to I Ratio Corrected	whole Sec. 120V P formers ne +24 +24 -24 ine +24	±1.0/30-10Kc ±1.0/30-12Kc ±1.0/30-12Kc ±1.0/30-12Kc ±1.0/20-15Kc	6.5 6.5 6.5

NOTE:

1. The above transformers are designed for use with the secondary winding terminated unless otherwise stated.

For use unterminated the low frequency variation would increase by approximately 1 to 2 db.

2. Both primary and secondary windings are in two sections. Impedances shown are for the series connection in which a centre tap is available. If coils are connected in parallel, impedances are equal to 25% of those shown, and no centre tap is available.

3. Most of the above transformers are usable in circuits with impedances differing ± 25% of the values shown, without exceeding the guaranteed response. (Both primary and secondary impedances would be altered in the same ratio).

4. If either the primary or secondary is terminated in the rated impedance, the impedance measured on the other side will be higher than the value shown, due to the dc resistance of the transformer windings. This increase is negligible in all types with the exception of output transformers and line transformers, type

5. dbm equals decibels referred to 1 milli-watt.

6. If transformers specified with an unbalanced dc of zero, in actual use, have unbalanced dc present, lowfrequency response will drop. On removal of the unbalance the response will revert to normal.

Type TA793 and TA1094A transformers have extremely accurate balance of coil sections and are suitable for phantom working. The transformers will also handle 17 cycles ringing current in telephone circuits. An electrostatic shield between windings is not provided in these types.

SPECIAL PURPOSE AUDIO AND CARRIER FREQUENCY TRANSFORMERS



- 1. These transformers are selected from the wide range of special purpose types available.
- 2. Types differing from the following are included in our range, and enquiries for special types will receive our full co-operation.
- 3. A full statement of requirements must be included when seeking transformers of these or similar characteristics.
- 4. Numbers underlined indicate standard transformers normally carried in stock.

Catalogue	Case	Applic at ion	Impeda	nce Ratio	Frequency Response	Level
No.	Case	Application	Primary	Secondary	± 1 db	dbm
TA-770	M8-M66	Line to grid	600 bal.	200,000 ct	$50\mathrm{c/s} ext{-}8\mathrm{Kc}$	+10
TA-605	M8, M66	Line matching balance of secondary better than 60 db	600 bal.	1,200 bal.	20c/s-40Kc	+18
TA-763	M8, M66	Carrier line matching	600/150	600/150	$50\mathrm{c/s}150\mathrm{Kc}$	+18
TA-796A	M8, M66	Carrier line to grid	600 bal.	60,000	$300 \mathrm{c/s} - 30 \mathrm{Kc}$	+18
TA-797	M8, M66	Carrier plate to line (no D.C.)	6,000	600 bal.	1Kc-30Kc	+18
TA-909	M8, M66	Carrier bridging (300 ohms)	30,000 bal.	30,000	30c/s-50Kc	+18
TA-1103C	M8	Carrier line to grid	600 bal.	20,000	3Kc-150Kc	+18
TA-1104B	M8	Carrier plate to line	6,000	600 bal.	3Kc-150Kc	+27
TA-1105A	M8	Carrier line matching Note: Bal. of windings better than 60 db up to 200Kc and better than 40 db to 1 MC	600/150	600/150	3Ke-500Ke	+18
TA-1147	M8, M51	Carrier line matching auto Note: When supplied in M51 case includes 4uF condensers for D.C. isolation	600	130/150	100c/s-45Kc	+18
TA-913B	M17, M51	Wide band line matching auto	600	115/120	20c/s-300Kc	
TA-914B	M17, M51	Wide band line matching auto	600	125/130	20c/s– $300Kc$	
TA-915B	M17, M51	Wide band line matching auto	600	135/140	20c/s– $300Kc$	-
TA-916B	M17, M51	Wide band line matching auto	600	145/150	20c/s– $300Kc$	
TA-917B	M17, M51	Wide band line matching auto	600	155/160	20/cs-300Kc	2 .
	-					



TELEPHONE ISOLATION TRANSFORMERS

One method of protecting a telephone from high voltages appearing on the line is the use of an Isolation Transformer.

The two types listed are representative of the units we manufacture and are for use in portable equipment or in permanent locations.

Special construction and resin potting are combined to give an adequate margin of safety and also to give complete dependability under the severest climatic conditions.

TA-1588 (Resin Cast)

Dimensions Approxima

Approximately 4" x $2\frac{1}{2}$ " x 4"H

Ratio 200 ohm ct line/600 ct equipment

Insertion loss Not greater than 1.2 db 400-4,000 c/s

Balance Line winding greater than 60 db

Test Voltage 15 KV RMS line to equipment

This transformer has electrostatic shields and is a statically wound to reduce the possibility of cross talk to a minimum.

It is used for voice frequencies and VF signalling.

TA-1704 (Resin Cast)

Dimensions

Approximately 5" x 2\frac{1}{4}" x 3\frac{1}{4}"H

Ratio

600 ohm ct line/600 ohm ct equipment

Insertion loss

1 db at 1,000 c/s and not more than 2.8 db

at 3 Kc

Test Voltage

20Kv RMS line to equipment

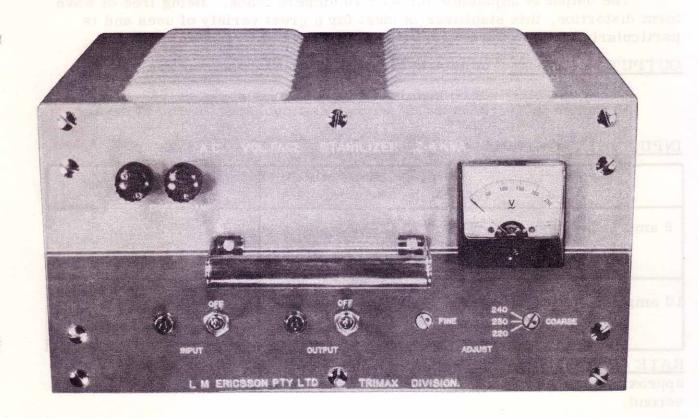
This transformer has been designed to handle 17 c/s ringing current and is astatically wound with electrostatic shields.

Neutralising Transformers

Another recent development is a neutralising transformer which is used to protect one or more exchange lines from high voltages developed during an earth fault at a power station. This method preserves the D.C. continuity in the lines without any serious effect on the transmission quantities. Because of the application of these transformers they are not listed but full information is available on request.

VOLTAGE STABILIZER





L M ERICSSON PTY. LTD. TRIMAX DIVISION

Cnr. CHARLES & WILLIAM STS.
COBURG, N.13
VICTORIA

437 19 1 3 A 1 W

TRIMAX S.C. LINE VOLTAGE STABILIZER-TYPE S116.

This unit is a motor operated, servo-control system giving continuous control action.

The output is adjustable for 9 or 10 ampere loads. Being free of wave form distortion, this stabilizer is ideal for a great variety of uses and is particularly suitable for several types of industrial X-ray equipment.

OUTPUT VOLTAGE Adjustable from 215 - 245 volts.

Maximum deviation from r.m.s. voltage setting: Less than $\pm 0.1\%$. Maximum drift from r.m.s. voltage setting: About 0.1%/50 days.

INPUT VOLTAGE

¥	Voltage range which can be accommodated	Output Voltage Setting
9 amp connection	182-241 190-250 198-262	220 230 240
10 amp connection	185-239 193-248 202-259	220 230 240

RATE OF RESPONSE Minimum response time for small deviations is approximately 0.25 seconds. Rate of response for large deviations 18 volts/second.

AMBIENT TEMPERATURE Maximum output is available up to ambient temperatures of 50°C

DIMENSIONS Base $13\frac{1}{2}$ inches by 11 inches. Height 8 inches.

WEIGHT Less than 50 lbs.

AMPLIFIER TYPE A54B





GENERAL:

The "Trimax" Amplifier Type A54B is a high quality amplifier designed to drive a wide range monitor loudspeaker, or to act as a distribution amplifier for a large number of lines. Two output impedances are available — 12 ohm or 3 ohm. The input is suitable for bridging a terminated 600 ohm line. The type A54B differs from the old type A54, in the use of silicon diodes in place of the thermionic rectifier, to reduce heat and improve reliability.

PHYSICAL DESCRIPTION:

The unit is designed for standard rack mounting, and occupies three rack units $(5\frac{1}{4}")$. Input, output, and power connections are by means of plugs and sockets.

SPECIFICATION

Gain	42 db continuously variable by means of input potentiometer.
Frequency Response .	\pm .5 db from 20 cycles to 20 Kc. \pm 1 db from 15 cycles to 30 Kc.
Stability	The frequency response does not vary by more than 1.5 db outside the limits stated above when the output termination is varied from open circuit to 600 ohms resistance, or 50 ohms in parallel with 0.2 mfd., and the amplifier is free from oscillations under these conditions.
Source Impedance	300 ohms.
Input Impedance	Greater than 25,000 ohms.
Load Impedance	12 ohms or 3 ohms, changeable by output plug wiring.
Output Impedance	Less than 1.5 ohms and .4 ohms respectively.
Noise	Equivalent noise input to the amplifier is less than -80 dbm with the gain control in its maximum position.
Power Output	Nominally 12 watts at less than .25% distortion at 1 Kc. A power output of approximately 20 watts is obtainable for 1% distortion.
Power Input	200-250 volts, 40-100 cycles, selected by fuse position. Primary current approximately .5 amp.
Cathode Metering	Metering jacks are provided for each tube giving approximately ½ scale reading on a 1 mA 1,000 ohms per volt meter.
Output Tubes Balance	A potentiometer is provided for balancing the D.C. current of the output tubes.



EXTENDED RANGE VOLUME INDICATOR



Rattery Operated

These units are for standard 19" rack mounting and occupy 54" of panel space. The G4 mains operated unit is completely self contained as illustrated and the G2 requires only the D.C. power given in the specification.

There are many applications where widely varying dynamic levels are required to be measured on programme lines. The "Trimax" Extended Range Volume indicators, employing a high stability feedback amplifier in conjunction with a VU meter, have been specially designed for this purpose. Control of the Amplifier gain is by two stepped attenuators giving coarse and fine adjustment. At zero position on these attenuators the meter shows a deflection of zero VU when a voltage of 0.7746 RMS is impressed on a 600 ohm line.

SPECIFICATION

UZ	battery Operated					
	Power Requirement	• •	• •	• •	• •	130 V. 5mA D.C. 24 V. 0.3A D.C.
G4	Mains Operated					
	Power Requirement					200-250 V. 50 c/s Mains.
	Indicator Range		٠.		٠.	-40 dbm to $+33$ dbm.
	Level Control					In 2 db steps.
	Frequency Range					\pm 0.5 db 20 c/s -60 Kc.
	Attenuator Accuracy					\pm 0.1 db at 1 Kc.
	Source Impedance	•:•:		• •		300 ohms (bridging 600 ohms line).
	Input Impedance		• •			30,000 ohms.
	Level Indication					4" Square meter.

AGE REGULATORS



GENERAL:

These "Trimax" regulators are ideal for use with electronic equipment and apparatus operated from 50 c/s 230-240V A.C. mains. The effect of varying supply voltage is virtually eliminated and although the D.C. output of rectifiers is reduced because of the harmonic content and higher source impedance, it remains stable. The D.C. variation of up to 10% is seldom important when weighed against the advantages of a stable supply.

> Range of Control. . For an input variation from 190 - 260V 50 c/s

the output remains \pm 1%.

The output is nominally between 230 and 240V R.M.S. Output Voltage . .

Specially selected units are available to

specific voltages within this range.

Frequency . Because of the tuned saturable reactor circuit

used, the regulator is sensitive to frequency.

TYPES S38 AND S40

Power Output: 60VA max.

Connections: S38: Input 3-pin plug.

Output 3-pin socket.

Input and output

conduit entries.

Case: Sheet metal case

 $10\frac{1}{2}$ in. x $4\frac{1}{2}$ in. x $4\frac{1}{2}$ in. H. with mounting flange at each end. Special dimples are formed on the base for

normal bench use.

Weight:

13 lbs.

TYPE S82

Power Output: 250VA max.

Connections: Input 3-pin plug.

Output 3-pin socket.

Other methods can be

provided.

Case: Sheet metal case

19 in. $x 5\frac{1}{4}$ in. $x 6\frac{1}{5}$ in. H. with mounting

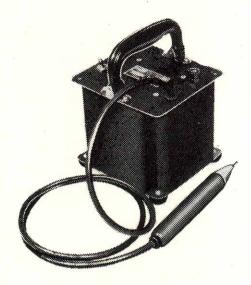
flange at each end. The unit is suitable for standard 19 in. rack mounting or normal

bench use.

Weight: 30 lbs.



INDUSTRIAL FLASH TESTERS



GENERAL

These A.C. testers have been designed to cover the normal production line testing of electrical appliances and components. Being portable they can be used in any suitable location where 240V 50 c/s is available.

Any insulation breakdown in the unit under test is indicated by the glow from a neon tube which is mounted in the tip of the probe. Faults are therefore shown at the test point which ensures fast and reliable testing. Since the short circuit current is limited to less than 6 mA the unit is non lethal and accidental applications to equipment are not likely to cause damage.

The following units have been selected as standards and cover test voltages up to 3,000V. Other voltages can be supplied to order.

Type	Case Dimensions	Output Voltage
S47	$5\frac{1}{2}$ in. x 5 in. x $4\frac{1}{2}$ in. H.	1,000 V RMS
S57	$5\frac{1}{2}$ in. x 5 in. x $4\frac{1}{2}$ in. H.	1,000/1,250V
S70	$5\frac{1}{2}$ in. x 5 in. x $4\frac{1}{2}$ in. H.	1,500 or 2,000V RMS selected by switch
S56	16 in, $\times 8\frac{1}{2}$ in, $\times 11\frac{1}{2}$ in, H.	500-2,500 in 500 Volt Steps. This unit also includes a meter for accurately setting the voltage.
S60	16 in, $x 8\frac{1}{2}$ in, $x 11\frac{1}{2}$ in, H.	500-3,000V in 500 Volt Steps. Identical to S56 except for higher voltage.

IONISATION TESTERS



THE IDEAL METHOD OF TESTING TELEVISION AND OTHER HIGH VOLTAGE COMPONENTS



Ionisation Testers provide the most convenient way of determining that the life of an electrical component is not shortened by ionisation currents occurring at or below the working voltage. These instruments enable the quality of insulating materials to be determined non-destructively and provide an excellent means of testing components for faulty impregnation and dampness.

SPECIFICATION

Output Voltage 50-1000 volts (on 1kV terminal)

500-10,000 volts (on 10kV terminal)

Current Ranges 0-2 uA, 0-20 uA, 0-200 uA

Resistance Range 100,000 megohms at 10kV and proportionately

at lower voltages

Ionisation Detection By self-contained loudspeaker or by head

phones (with speaker muted)

Amplifier Gain Exceeds 100 db

Amplifier Frequency Range . . Approx. 500 c/s to 7 Kc/s

Power Consumption 50 VA max.

Power Supply 200-250 volts A.C. 40-60 cycles

Weight Approx. 30 lbs.

The "Trimax" Ionisation Tester Type G1B has been designed for use as either a field production or laboratory test instrument, and has been constructed in portable form rather than for mounting in a standard rack. It is non lethal in normal use but large capacities being tested can hold lethal charges. These must be treated with caution.



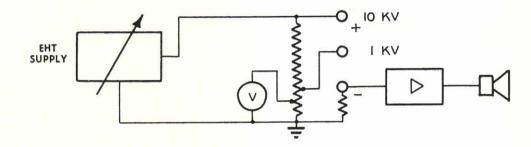
"TRIMAX" G1-B IONISATION TESTER

GENERAL DESCRIPTION AND CIRCUIT PRINCIPLES

Among the many uses of this instrument is the detection of ionisation and the measurement of insulation resistance of components and equipment whether they are connected to earth or isolated. Electric motors or transformers, for instance, can be tested on site. For accurate leakage current measurements a guard terminal is provided to eliminate unwanted currents. This is particularly useful when measuring the insulation resistance between two conductors in a screened cable.

EHT UNIT:

The variable D.C. output is obtained by controlling the screen voltage of an RF oscillator operating at approximately 100 Kc. The output of this oscillator is fed to a special RF transformer, then rectified, filtered and applied to a voltage divider. Ten per cent of the output is connected to the 1000V terminal and the full voltage to the 10,000 volt terminal. Both voltages are direct reading on the meter.



VOLTMETER CIRCUIT:

The vacuum tube Voltmeter circuit uses two triodes with 100% degenerative feedback ensuring a high degree of linearity. The effect of variations in tube characteristics is kept to a minimum and the zero and sensitivity are unaffected by changes in the line voltage. Leakage currents through the sample are determined by measuring, by means of the vacuum tube voltmeter, the voltage drop across selected accurately calibrated series resistors.

AUDIO AMPLIFIER:

This is a three stage high gain amplifier using three pentode stages. The input valve is a special low noise type and the restricted frequency range of 500 cycles to 7 Kc reduces the hum frequency components by as much as 40 db. The hissing or rushing noise which shows the onset of ionisation is easily detected, but for noisy locations headphones can be used. The impedance of the headphones is not critical and when they are plugged in, the speaker is muted.

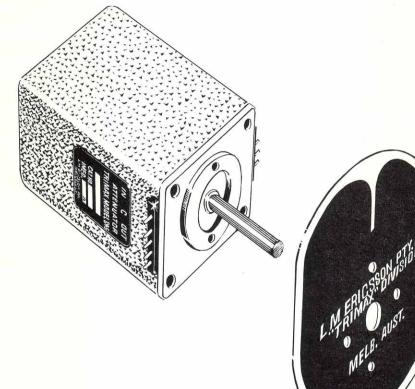
POWER SUPPLY:

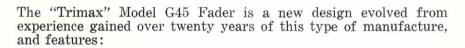
Supply voltages from 200-250 Volts A.C. 40-60 cycles can be used and the correct transformer tap is selected by adjusting the tap changing fuse holder which projects into the storage compartment.

The storage compartment is built into the bottom of the case and holds the input lead and the instruction booklet.

ATTENUATORS AND FADERS







- Solid non-staining silver alloy contacts.
- Floating rotor with three contact pressure points.
- Optimum, permanently maintained contact pressure.
- Rigid four pillar construction.
- Porous bronze main bearing.
- Stainless steel spindle.
- High quality phenolic resin stud plates with acetal resin rotor bosses.
- Diamond lapped contact surfaces.
- Positive knob stop in addition to individual rotor stop.
- High stability resistors.

It can be supplied in balanced or unbalanced forms of Potentiometer and Ladder, or as Bridged-T.



ATTENUATORS AND FADERS

ELECTRICAL SPECIFICATION:

Attenuation Range: 31 positions. The first 27 steps are 1.66 db each giving a total of 45 db. The last three steps taper to infinity.

Attenuation Setting: Indicated by dial, calibrated in 5 db increments (every 3 steps) with intermediate divisions.

Accuracy of Calibration: \pm 0.5 db in any 5 db section. Within 1 db of nominal in any position. Frequency Characteristics: Dependant on attenuator form and impedance, e.g., within 0.5 db from D.C. to 100 Kc. for a 600 ohm ladder in any position.

Impedance: Our standard designs cover the impedances listed below and other values are subject to special order.

Input and Output Impedance Tolerance: Within 10% of nominal except on last three steps.

Off-normal Contacts: These are changeover contacts, i.e., S.P.D.T. operating on the last 2 steps of the control and can be fitted to any type.

If required add letter "X" to Catalogue No.

Insertion Loss: Ladder types 6 db. Potentiometers and bridged "T" types 0.db.

PHYSICAL SPECIFICATION:

Cover size: 23/32" square plus terminal pin projections.

Dial diameter: 23".

Escutcheon: Oval 2½" x 3".

Overall depth behind panel: Single unit $2\frac{1}{16}$ "; Double unit $3\frac{3}{16}$ ".

Mounting: $2 \times \frac{3}{2}$ holes $1\frac{1}{2}$ centre distance with $\frac{1}{2}$ dia. centre hole.

INSTALLATION:

- 1. Remove knob and dial assembly, and escutcheon plate.
- 2. Attach to panel with the two holding screws which also hold the escutcheon plate.
- 3. Rotate the spindle by fingers either clockwise or anti-clockwise until the rotor stops engage.
- 4. Fit knob and dial assembly to spindle with approximately $\frac{1}{32}$ clearance between dial skirt and escutcheon and rotate in same direction as in 3 until the knob firmly engages the knob stop. Tighten knob grub screws.
 - Note: (a) The plastic covered holding screw which also functions as the fixed part of the knob stop is normally positioned on the left-hand side of the spindle.
 - (b) The fader may be mounted with the terminal lugs in either a horizontal or vertical plane by correctly positioning the two holding screw holes. Faders are normally assembled for vertical plane mounting, and, if the horizontal plane is preferred, it is necessary only to loosen the dial skirt plate retainer screws on the knob, rotate the dial to the correct position, and re-tighten the screws.

MAINTENANCE:

- 1. Sufficient lubrication is applied to the spindle bearings during manufacture to function indefinitely, but if it appears desirable to re-lubricate, apply one small drop to each bearing, applied preferably by a piece of ½6" dia. wire, which has been dipped in a light machine oil.
- 2. Contacts: These may be "dry" or lubricated. If the preference is for lubrication, use only pure lanoline or "Electrolube". If electrical noise develops, which is unlikely, clean contact surfaces with a small brush dipped in Chlorothene NU, or other high quality solvent. Abrasive cleaning should not be attempted as this would destroy the high surface finish resulting from diamond lapping.

STANDARD TYPES

Potentiometers	Unbalanced Ladder	Balanced Ladder	Bridged "T"
A7P 10K ohms A6P 100K ohms A4P 500K ohms	*A1L 600 ohms A2L 200 ohms A3L 50 ohms	*A1M 600 ohms A2M 200 ohms	A2T 600 ohms A3T 200 ohms

^{*} Stock types.

ELECTRICAL CONNECTOR



Essential requirements in connectors for use in electronic circuits are perfect contact, full shielding, reliability, and speedy usage. These are fully met by "Trimax" electrical connectors.

Materials used in their manufacture are the best obtainable and comply with all the relevant British Standard Specifications. Careful inspection at every stage of production ensures rejection of any faulty parts.

- All contact surfaces are silver plated, and pins are end drilled for ease of connection to cable wires.
- · Average voltage drop across a single contact with a current flow of 15 amperes does not exceed 6 millivolts.
- Shells and bodies are die cast in zinc base allov.
- Contact insulation is moulded bakelite.
- Springs are made in spring temper Phosphor Bronze.
- Easy release latch lock fittings are incorporated to prevent accidental parting of connectors.
- All castings are Cadmium plated.
- All cord grip fittings will take a cable with maximum diameter of ½ in. A 2 in. length of rubber tube with inside diameter of 9/32 in. is supplied for use use with cables of smaller diameter.
- Contact insulation is checked at 1,500 volts R M S.
- Wall Mounting Plates are finished in florentine bronze.

FEMALE SOCKET AND MALE CORD GRIP PLUG



Cat. No.	Contacts	Cat. No.
S3F	3	P3MS
S4F	4	P4MS
S6F	6	P6MS



MALE SOCKET AND FEMALE CORD GRIP PLUG



Cat. No.	Contacts	Cat. No.
S3M	3	P3FS
S4M	4	P4FS
S6M	6	P6FS



90° MALE CORD GRIP PLUG SOCKET MOUNTING PLATES

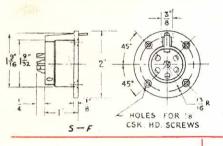


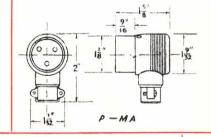
Cat. No. P3MA P4MA P6MA

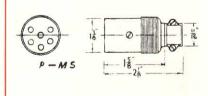
S3F1	One socket on plate
S4F1	One socket on plate
S6F1	One socket on plate
S3M1	One socket on plate
S4M1	One socket on plate
S6M1	One socket on plate

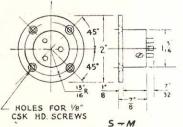
4½ in. x 2¾ in.

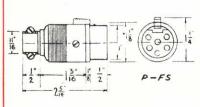
	4± in	. x 63 in.		
S3F3	Three	sockets	on	plate
S4F3	Three	sockets	on	plate
S6F3	Three	sockets	on	plate
S3M3	Three	sockets	on	plate
		sockets		
S6M3	Three	sockets	on	plate

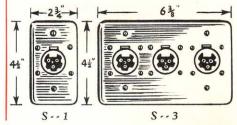














MISCELLANEOUS COMPONENTS

PILOT LAMP HOLDERS



"M 156 R"

With transparent or translucent plastic lens in Red, Green, White, Amber or Clear. For MES or MBC globes.

"M 156 T"

With transparent or translucent plastic lens in Red, Green, White, Amber or Clear. For Side Contact Telephone Lamp No. 2.

Both lamp holders are designed for lamps with a maximum dissipation of 2 watts.

INSTRUMENT TERMINALS AND PANEL

A nickel plated brass terminal with knurled top, and end drilled $^5/_{22}$ in. diameter to take a standard "banana" plug. Shank length 3_4 in. M57/2 — Shank length 1^3_4 in. "M 57"

Identical to the M57 but with an insulated top. Available in standard colours of Red and Black. Shank length $\frac{3}{4}$ in. M176/2 — Shank length $1\frac{3}{4}$ in. "M 176"

Terminal panel suitable for mounting these terminals at $\frac{3}{4}$ in. centres on panels of a minimum thickness of .040 in. "M 62"



TWO PIN PLUG



"M 682" An instrument or equipment plug with standard 3 in. spacing between pins. The pins are each drilled to take "banana" plugs or another M682 either end in or crossways. Captive knurled nuts are available for loose lead connections.

"M 1058" Similar to M682 but with insulated top terminals.

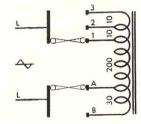
MISCELLANEOUS COMPONENTS



FUSE HOLDER - "M 10"



The Trimax Tap-changing fuse holder is suitable for fuses up to 5 amp. capacity, and because of the alternative fuse positions, is a convenient means of tap-changing. All contact surfaces are silver plated, and the springs do not carry current. When the top cap is removed for adjustment or replacement of fuses, the line connections are broken, thus eliminating danger of shock.

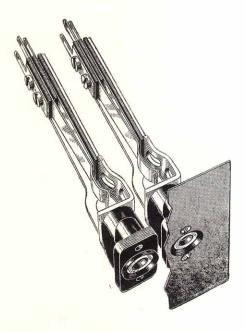


VERNIER DRIVE-"M 48"

A vernier drive with a ratio of approximately 10-1, of the friction type, using hardened steel balls and a drive spindle of silver steel. The driving spindle diameter is $\frac{1}{4}$ in., and the unit is for fitting to a $\frac{3}{8}$ in. shaft. Its overall length is $2\frac{3}{4}$ in., and overall diameter 1 in.



JACK MOUNTING BLOCK-"M 11"



A handy insulating block for mounting of telephone jacks with an outside barrel diameter of .450 in. and a length of .580 in. Using these blocks it is possible to mount a single row of jacks at § in. centres. The block is provided with holes of suitable diameter to take number 4 self-tapping screws.



MISCELLANEOUS COMPONENTS

MICROPHONE STANDS

ROUND BASE TABLE STAND, FIXED OR ADJUSTABLE TYPES

Base Diameter 6 in.

HEIGHT: Fixed Type 14 in.

HEIGHT: Adjustable Type 14 in. - 21 in.



ROUND BASE FLOOR STAND

Base Diameter 12 in.

HEIGHT: Adjustable 3 ft. 6 in. - 6 ft. 6 in.

WEIGHT OF BASE: 13 lbs.



HEIGHT: Adjustable 4ft. 6 in. - 7 ft. or

3 ft. 6 in. - 6 ft. 6 in. As Ordered.

WEIGHT OF BASE: 22 lbs.





SHEET METAL WORK

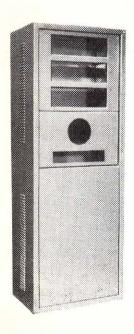


In the early stages of "Trimax" development it was decided to make the organisation as self contained as possible. To assist in this, a comparatively elaborate sheet metal section was established to manufacture the many types of covers, cases, chassis and cabinets used with our products.

The excellent workmanship and finish, as well as competitive pricing, has led to an expanding market in Industry and with Government Departments. To keep pace with this expansion, new machines have been installed, and company policy is to replace these machines with improved types as they become available. The working area now exceeds 10,000 sq. ft.

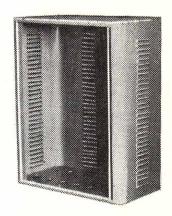
Facilities are available for fabrications in all standard rolled or extruded sections as well as panels, cabinets and cubicles up to 8' by 10 gauge steel, or brass and aluminium up to $\frac{1}{4}$ ".

A large degreasing bath has been installed to insure completely clean surfaces for the application of primers and the finished product is normally stoved in a temperature controlled oven. Spray finishes in all standard materials are applied in a closed spray room which has a filtered air supply.



This special rack cabinet is typical of types used in Public Address and Communication Equipment. Similar cabinets can be made to special order and our staff of highly skilled personnel are always ready to assist you.

RACK CABINETS for standard 19" panels are another standard line, and can be made for any panel space, usually in multiples of 13", which is the basic unit for this type.





SHEET METAL WORK



AMPLIFIER CHASSIS:

These are standard chassis, bases and covers for Public Address equipment and amplifiers, and are normally stock items in two sizes.

M50 Chassis. Has a detachable cover and base. Size of Base: 15 in. $x 8\frac{1}{2}$ in. x 3 in. high. Height of Cover: 51 in.

Overall Height of Base and Cover: 81 in. M356 Chassis. Has a detachable cover and base.

Size of Base: 11 in. $x 8\frac{1}{2}$ in. $x 2\frac{1}{2}$ in. high.

Height of Cover: $5\frac{1}{2}$ in.

Overall Height of Base and Cover: 8 in.

TERMINAL BOXES:

Many types of heavy gauge terminal boxes are made and supplied to specification. The one illustrated is of 12 gauge steel finished in stoving enamel. The construction is virtually watertight being drip and splash proof.



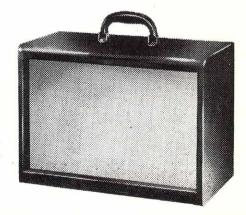


MU-METAL SHIELDS:

The Mu-Metal shield shown is one of many shields manufactured for Cathode Ray tubes. It is annealed in a Trimax designed and built controlled atmosphere furnace to obtain the highest performance figures. Government Departments and Industry are major users of these shields.



All types of portable cases are made. The one shown being approximately 16" x $8\frac{1}{2}$ " x $11\frac{1}{2}$ " high. This unit can be supplied with a blank chassis and panel so that special equipment can be mounted, or the case only is available. Other special cases can be supplied to order and your enquiries are welcome.



EQUIPMENT TROLLEY







L M ERICSSON PTY. LTD. TRIMAX DIVISION

Cnr. CHARLES & WILLIAM STS.
COBURG, N.13
VICTORIA

GENERAL:

This trolley is particularly suitable as a means of mounting heavy laboratory test equipment.

The shelves can be fixed in a horizontal position or at an angle ideal for cathode-ray oscilloscopes, they can also be reversed to become trays with reasonably high sides and they are adjustable to a number of different heights in any of the above forms of mounting.

Provision is made for fitting three mains sockets in parallel, which means that three mains-operated instruments can be supplied with power, when on the trolley, by the use of one extension lead.

CASTORS:

Rubber tyred castors are fitted to give silent, shock-proof and easy mobility.

FINISH:

The stock trolleys are grey hammertone but other colours can be obtained by special order.

DESPATCH & PACKING:

In order to keep the freight to a minimum and for ease of handling and storage, the trolleys are despatched in kit form complete with nuts, bolts and castors for assembly on arrival.

The electrical fittings can be supplied, as an extra, to special order.

Date 1st May, 1965 POWER TRANSFORMERS - WHOLESALE PRICES (Note: T.O.V. - Total Order Value, is the total of all items on one order.)

TYPE	T.O.V. £20 & over	T.O.V. under £20	TYPE	T.O.V. T.O.V. £20 & over under £20
TP-16A	£3.10. 0	£3.14. 9	TP-2821	£1. 4. 6 £1. 6. 3
TP-17A	3.18. 6	4. 3. 9	TP-2827	9.12. 6 10. 5. 3
TP-18A	4. 7. 6	4.13. 3	TP-2985	19. 5. 0 20.10. 9
TP-69B	5. 7. 6	5.14. 9	TP-3073B	15.10. 0 16.10. 9
TP-185A	2.12. 6	2.16. 0	TP-3078	5.17. 6 6. 5. 3
TP-208A	3. 0. 0	3. 4. 0	TP-3099	17. 618. 9
TP-399B-M122	10. 5. 0	10.18. 9	TP-3100	3.15. 0 4. 0. 0
TP-399B-VBA	4.17. 6	5. 4. 0	TP-3138	18.17. 6 20. 2. 9
TP-400A-M122	8. 5. 0	8.16. 0	TP-3146	1. 2. 6 1. 4. 0
TP-400A-VBA	2.17. 6	3. 1. 3	TP-3345	18.15. 0 20. 0. 0
TP-1454A	3.12. 6	3.17. 3	TP-3346	10. 0. 0 10.13. 3
TP-1633A	4. 5. 0	4.10. 9	TP-3395	28.10. 0
TP-1724	3.15. 0	4. 0. 0	TP-3518	12.12. 6 13. 9. 3
TP-1780	3. 2. 6	3. 6. 9	TP-3569A	4.15. 0 5. 1. 3
TP-1798A	5.17. 6	6. 5. 3	TP-3588	3.15. 0 4. 0. 0
TP-1803	11.10. 0	12. 5. 3	TP-3591	18.15. 0 20. 0. 0
TP-2069A	2. 2. 6	2. 5. 3	TP-3622	8. 5. 0 8.16. 0
TP-2077	5.12. 6	6. 0. 0	TP-3643	3.15. 0 4. 0. 0
TP-2171B	2.10. 0	2.13. 3	TP-3794	72.10. 0
TP-2259	5. 5. 0	5.12. 0	TP-3828	21.17. 6
TP-2263A	10.15. 0	11. 9. 3	TP-3862	2. 0. 0 2. 2. 9
TP-2264	10. 5. 0	10.18. 9	TP-3863	4.17. 6 5. 4. 0
TP-2420	2.10. 0	2.13. 3	TP-3980	1.17. 6 - 2. 0. 0
TP-2496	12. 5. 0	13. 1. 3	TP-3981	2. 7. 6 2.10. 9
TP-2499	9.15. 0	10. 8. 0	TP-3982	3. 8. 6 - 3.13. 0
TP-2500	5. 2. 6	5. 9. 3	TP-4300	1. 1. 0 1. 2. 6
TP-2501	9. 5. 0	9.17. 3	TP-4301	1. 7. 6 1. 9. 3
TP-2502	1. 3. 6	1. 5. 0	TP-4302	1.14. 6 1.16. 9
TP-2580	12.15. 0	13.12. 0	TP-4303	1.12. 6 1.14. 9
TP-2656	2.17. 6	3. 1. 3	TP-4304	1. 12. 6 1.14. 9

POWER TRANSFORMERS - WHOLESALE PRICES Date 1st May, 1965.

Excluding Sales Tax (Note: T.O.V. - Total Order Value, is the total of all items on one order.)

(Note: T	O.V Tota	l Order Value,	is the total o	f all items on o	one order.)	-
TYPE	T.O.V.	T.O.V. under £20	TYPE	T.O.V. £20 & over	T.O.V.	
						
TP-4305	£2. 2. 6	£2. 5. 3	TP-4335	£9. 5. 0	£9.17. 3	
TP-4306	2. 2. 6	2. 5. 3	TP-4336	19.10. 0	20.16. 0	
TP-4307	2. 3. 6	2. 6. 6	TP-4337	3. 2. 6	3. 6. 9	
TP-4308	2. 3. 6	2. 6. 6	TP-4338	4. 1. 6	4. 7. 0	
TP-4309	2.11. 6	2.15. 0	TP-4339	17. 6	18. 9	
TP-4310	2.12. 6	2.16. 0	TP-4340	1. 1. 6	1. 3. 0	
TP-4311	2.13. 6	2.17. 0	TP-4341	1. 1. 6	1. 3. 0	
TP-4312	2.12. 0	2.15. 6	TP-4342	1. 4. 6	1. 6. 3	
TP-4313	3. 2. 6	3. 6. 9	TP-4343	1. 4. 6	1. 6. 3	14
TP-4314	3. 3. 6	3. 7 . 9	TP-4344	1. 9. 6	1.11. 6	
TP-4315	3. 12.6	3.17. 3	TP-4345	1.17. 6	2. 0. 0	
TP-4316	3.12. 6	3.17. 3	TP-4346	2. 0. 0	2. 2. 9	
TP-4317	3. 2. 6	3. 6. 9	TP-4347	1.17. 6	2. 0. 0	
TP-4318	3. 8. 6	3.13. 0	TP-4348	1.18. 6	2. 1. 0	
TP-4319	3. 8. 0	3.12. 6	TP-4349	2.17. 6	3. 1. 3	
TP-4320	3.12. 6	3.17. 3	TP-4350	2.17. 6	3. 1. 3	
TP-4321	3.12. 0	3.16. 9	TP-4351	3. 7. 6	3.12. 0	
TP-4322	4.12. 6	4.18. 9	TP-4352	7.10. 0	8. 0. 0	
TP-4323	5.12. 6	6.0.0	TP-4353	2.12. 6	2.16. 0	
TP-4324	4.12. 6	4.18. 9	TP-4354	2.17. 6	3. 1. 3	
TP-4325	5. 2. 6	5. 9. 3	TP-4355	1.17. 6	2. 0. 0	
TP-4326	5.12. 6	6. 0. 0	TP-4356	21.15. 0		
TP-4327	5.12. 6	6. 0. 0	TP-4358	10. 5. 0	10.18. 9	
TP-4328	5.17. 6	6. 5. 3	TP-4407		3. 1. 3	
TP-4329	5.12. 6	6. 0. 0	TP-5060	10-15-0 3-15-6		
TP-4330	6. 5. 0	6.13. 3		1-10-0		- 1
TP-4331	8. 2. 6	8.13. 3	TP- 4623	5-17-6		
TP-4332	10. 2. 6	10.16. 0				
TP-4333	8. 5. 0	8.16. 0				
TP-4334	8. 5. 0	8.16. 0				
						1

FILTER CHOKES - WHOLESALE PRICES

OLESALE PRICES Date 1st May, 1965
Excluding Sales Tax

(Note: T.O.V. - Total Order Value, is the total of all items on one order.)

(Note	e: T.O.V 7	Fotal Order Val	ue, is the to	tal of all items	on one order.)	
TYPE	T.O.V. £20 & over	T.O.V. under £20	TYPE	T.O.V. £20 & over	T.O.V. under £20	
 TZ-1	£3. 1. 6	£3. 5. 6	TZ-842	£13. 6	£14. 6	
TZ-3	1.12. 6	1.14. 9	TZ-843	12. 6	- 13. 3	
TZ-5	13. 0	14. 0	TZ-844	10. 6	11. 3	
TZ-7	2.15. 0	2.18. 9				
TZ-11	14. 6	15. 6				
TZ-28	2.12. 6	2.16. 0				
TZ-47	2.10. 0	2.13. 3				
TZ-56	19. 6	1. 0. 9				
TZ-57	1.12. 6	1.14. 9				
TZ-63	3.17. 6	4. 2. 9				
TZ-84	2.17. 6	3. 1. 3				
TZ-277	15. 6	16. 6				
TZ-344	1.15. 0	1.17. 3				
TZ-394	7.10. 0	8. 0. 0				
TZ-460	14. 6	15. 6				
TZ-461	15. 6	16. 6				
TZ-462	1. 1. 6	1. 3. 0				
TZ-463	1. 5. 0	1. 6. 9				
TZ-464	1.14. 6	1.16. 9				
TZ-465	1.17. 6	2. 0. 0				
TZ-466	2.10. 0	2.13. 3	550			
TZ-467	1.18. 6	2. 1. 0				
TZ-469	3. 2. 6	3. 6. 9				
TZ-550	10. 5. 0	10.18. 9				
TZ-610	3.12. 6	3.17. 3				
TZ-673	15. 6	16. 6				
TZ-694		N DECKER				
TZ-695	PRICES O	N REQUEST				
TZ-840	17. 6	18. 9				
TZ-841	14. 6	15. 6				

INSTRUMENT TRANSFORMERS - WHOLESALE PRICES Date 1st May, 1965 Excluding Sales Tax.

(Note: T.O.V. - Total Order Value, is the total of all items on one order.)

ТҮРЕ	T.O.V. £20 & over	T.O.V. under £20
TC-2	£3.15. 0	£4. 0. 0
TC-15	3. 5. 0	3. 9. 3
TC-16	3. 5. 0	3. 9. 3
TC-125	6. 10. 0	6.18. 9
TC-130	10. 2. 6	10.16. 0
TC-132	6.10. 0	6.18. 9
TC-152	7.10. 0	8. 0. 0
TC-153	7.10. 0	8. 0. 0
TC-154	7.10. 0	8. 0. 0
TC-164	8. 2. 6	8.13. 3
TC-165	8. 2. 6	8.13. 3
TC-166	8. 2. 6	8.13. 3
TC-167	8. 2. 6	8.13. 3
TC-168	8. 2. 6	8.13. 3
TC-169	8. 2. 6	8.13. 3
TC-170	8. 2. 6	8.13. 3
TC-171	9. 2. 6	9.14. 9
TC-172	9. 2. 6	9.14. 9
TC-181	7.10. 0	8. 0. 0

AUDIO TRANSFORMERS - WHOLESALE PRICES

Prefix TA and MS

(Excluding Sales Tax)

Date 1st May, 1965

T.O.V. - Total Order Value, is the total of all items on one order.) (Note: T.O.V. T.O.V. T.O.V. T.O.V. under £20 £20 & over £20 & over under £20 TYPE TYPE £8. 5. 0 £8.16. 0 TA-3 £3,15, 0 £4. 0. 0 TA-914B-M51 8.13. 3 2. 3.15. 0 4. 0. TA-915B-M17 8. 6 TA-17 8.16. 0 5. 3.12. 3.17. 3 TA-915B-M51 8. 0 TA-37A 8.13. 3 3.15. 0 4. 0. TA-916B-M17 8. 2. 6 TA-47 8.16. 0 8. 5. 3.15. 0 4. 0. TA-916B-M51 0 TA-61 8. 2. 8.13. 3 3.15. 4. 0. TA-917B-M17 6 TA-82 8.16. 0 8. 5. 0 TA-101 3.12. 3.17. 3 TA-917B-M51 3.10. 3.14. 9 3.12. 3.17. 3 TA-931 TA-168A 5. 2. 4.16. 6 TA-406A 3.12. 3.17. 3 MS-944 4.16. 5. 2. 6 4. 0. MS-945 3.15. TA-605 5. 2. 4.16. 6 TA-636 3.12. 3.17. MS-946 3.10. 3.14. 9 TA-947 3.10. 0 3.14. TA-710A TA-948 3.10. 3.14. 9 TA-731A 3.15. 0 4. 0. 5. 2. 5. 9. 3 3.10. 0 3.14. 9 MS-977 6 TA-733B 4. 8. 4. 2. 0 3.15. 0 4. 0. TA-1076 6 TA-763 4. 5. 4.10. 9 3.15. 0 4. 0. TA-1094A 0 TA-770 2. 4. 8. 4.10. TA-1103C 4. 4. 5. 0 TA-793 TA-1104B 4. 2. 4. 8. 4. 2. 4. 8. 6 TA-796A 2. 4. 8. 4. 2. 4. 8. TA-1105A 4. TA-797 6 5.10. 5.17. 3 3.10. 3.14. TA-1147-M8 0 TA-833 3.14. 9 TA-1147-M51 6.10. 6.18. 9 3.10. 0 TA-835 PRICE TA-1588 ON REQUEST 5. 5. 0 MS-837 4.18. 6 5. 5. TA-1693 3.12. 6 3.17. 3 4.18. 6 MS-860 PRICE ON TA-1704 REQUEST 2. 4.16. 0 5. 6 MS-866 3.12. 3.17. 3 5. TA-1774 4.18. 6 5. 0 MS-878 4-12-6 TA-1240 2. MS-896 4.16. 0 5. 6 2-12-6 TA-587 4. 8. 4. 2. 0 TA-909 6 TA- 2032 4-17-6 2. 6 8.13. 3 TA-913B-M17 8. TO-673 2-12-6 8.16. TA-913B-M51 8. 5. TA-2246 9-10-0 8.13. 3 TA-914B-M17 8. 2. 3-3-0 TA-1823

MISCELLANEOUS COMPONENTS - WHOLESALE PRICES Date 1st May, 1965 Excluding Sales Tax

(Note: T.O.V Total Order Value, is the total of all items on one order.

(Note: T.O.	V Total Order V	Value, is the to	otal of all items on one or	der.)
	T.O.V.	T.O.V.	T.O.V.	T.O.V.
TYPE	£20 & over	under £20	TYPE £20 & over	under £20
P3MS	£11. 3	£12. 0	M62 £ 10	£ 11
P4MS	11. 9	12. 6	M176 4. 9	5. 0
P6MS	12. 9	13. 6	M682	
P3MA	14. 6	15. 6	M1058 Price on App	lication
P4MA	15. 0	16. 0	M1015. 0	16. 0
P6MA	16. 0	17. 0	M48 Price on App	olication
P3FS	19. 3	1. 0. 6	M11 6	
P4FS	1. 0. 6		MILG KNOBS FLANGE	7-9
P6FS	1. 3. 0	1. 4. 6	Pams SHEUS	5-0
S3F	16/618. 3	19. 6	Pams SHEUS AIL - FADER Manhore	3-15-0
S4F	19. 6	1. 0. 9		
S6F	1. 2. 0	1. 3. 6		
S3M	9. 0	 9. 6		
S4M	9. 6	10. 3		
S6M	10. 6	11. 3		
S3F1	24-1.6.6	1. 8. 3		
S4F1	1. 7. 9	1. 9. 6		
S6F1	1.10. 3	1.12. 3		
S3M1	16. 9	17. 9		
S4M1	17. 3	18. 6		
S6M1	18. 3	19. 6		
S3F3	3.11. 3	3.16. 0		
S4F3	3.15. 0	4. 0. 0		ri e
S6F3	4. 2. 6	4. 8. 0		
S3M3	1.19, 9	2. 2. 6		
S4M3	2. 1. 3	2. 4. 0		
S6M3	2. 4. 3	2. 7. 3		
M156R	5. 6	5. 9		
M156T	 5 . 0	5. 3		
M57	3. 6	3. 9		

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	TYPE	TRADE	RETAIL	TYPE TRADE	RETAIL
	TP-16A	£4.13. 3	£5.19. 0	TP-2821 £1.12. 9	£2. 1. 9
	TP-17A	5. 4. 9	6.13. 6	TP-2827 12.16. 9	16. 7. 3
	TP-18A	5.16. 9	7. 8. 9	TP-2985 25.13. 3	32.14. 6
	TP-69B	7. 3. 3	9. 2. 9	TP-3073B 20.13. 3	26. 7. 0
	TP-185A	3.10. 0	4. 9. 3	TP-3078 7.16. 9	9.19. 9
	TP-208A	4. 0. 0	5. 2. 0	TP-3099 1. 3. 3	1. 9. 9
	TP-399B-M122	13.13. 3	17. 8. 6	TP-3100 5. 0. 0	6. 7. 6
	TP-399B-VBA	6.10. 0	8. 5. 9	TP-3138 25. 3. 3	32. 1. 9
	TP-400A-M122	11. 0. 0	14. 0. 6	TP-3146 1.10. 0	1.18. 3
	TP-400A-VBA	3.16. 9	4.17. 9	TP-3345 25. 0. 0	31.17. 6
	TP-1454A	4.16. 9	6. 3. 3	TP-3346 13. 6. 9	17. 0. 0
	TP-1633A	5.13. 3	7. 4. 6	TP-3395 38. 0. 0	48. 9. 0
	TP-1724	5. 0. 0	6. 7. 6	TP-3518 16.16. 9	21. 9. 3
	TP-1780	4. 3. 3	5. 6. 3	TP-3569A 6. 6. 9	8. 1. 6
	TP-1798A	7.16. 9	9.19. 9	TP-3588 5. 0. 0	6. 7. 6
	TP-1803	15. 6. 9	19.11. 0	TP-3591 25. 0. 0	31.17. 6
	TP2069A	2.16. 9	3.12. 3	TP-3622 11. 0. 0	14. 0. 6
	TP-2077	7.10. 0	9.11. 3	TP-3643 5. 0. 0	6. 7. 6
	TP-2171B	3. 6. 9	4. 5. 0	TP-3794 96.13. 3	123. 5. 0
	TP-2259	7. 0. 0	8.18. 6	TP-3828 29. 3. 3	37. 3. 9
	TP-2263A	14. 6. 9	18. 5. 6	TP-3862 2.13. 3	3. 8. 0
	TP-2264	13.13. 3	17. 8. 6	TP-3863 6.10. 0	8. 5. 9
	TP-2420	3. 6. 9	4. 5. 0	TP-3980 2.10. 0	3. 3. 9
	TP-2496	16. 6. 9	20.16. 6	TP-3981 3. 3. 3	4. 0. 9
	TP-2499	13. 0. 0	16.11. 6	TP-3982 4.11. 3	5.16. 6
	TP-2500	6.16. 9	8.14. 3	TP-4300 1. 8. 0	1.15. 9
	TP-2501	12. 6. 9	15.14. 6	TP-4301 1.16. 9	2. 6. 9
	TP-2502	1.11. 3	2. 0. 0	TP-4302 2. 6. 0	2.18. 9
	TP-2580	17. 0. 0	21.13. 6	TP-4303 2. 3. 3	2.15. 3
ies	TP-2656	3.16. 9	4.17. 9	TP-4304 2. 3. 3	2.15. 3
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TYPE	TRADE	RETAIL	TYPE	TRADE	RETAIL
TP-4305	£2.16. 9	£3.12. 3	TP-4335	£12. 6. 9	£15.14. 6
TP-4306	2.16. 9	3.12. 3	TP-4336	26. 0. 0	33. 3. 0
TP-4307	2.18. 0	3.14. 0	TP-4337	4. 3. 3	5. 6. 3
TP-4308	2.18. 0	3.14. 0	TP-4338	5. 8. 9	6.18. 6
TP-4309	3. 8. 9	4. 7. 6	TP-4339	1. 3. 3	1. 9. 9
TP-4310	3.10. 0	4. 9. 3	TP-4340	1. 8. 9	1.16. 6
TP-4311	3.11.3	4.11. 0	TP-4341	1. 8. 9	1.16. 6
TP-4312	3. 9. 3	4. 8. 6	TP-4342	1.12. 9	2. 1. 9
TP-4313	4. 3. 3	5. 6, 3	TP-4343	1.12. 9	2. 1. 9
TP-4314	4. 4. 9	5. 8. 0	TP-4344	1.19. 3	2.10. 3
TP-4315	4.16. 9	6. 3. 3	TP-4345	2.10. 0	3. 3. 9
TP-4316	4.16. 9	6. 3. 3	TP-4346	2.13. 3	3. 8. 0
TP-4317	4. 3. 3	5. 6. 3	TP-4347	2.10. 0	3. 3. 9
TP-4318	4.11. 3	5.16. 6	TP-4348	2.11. 3	3. 5. 6
TP-4319	4.10. 9	5.15. 6	TP-4349	3.16. 9	4.17. 9
TP-4320	4.16. 9	6. 3. 3	TP-4350	3.16. 9	4.17. 9
TP-4321	4.16. 0	6. 2. 6	TP-4351	4.10. 0	5.14. 9
TP-4322	6. 3. 3	7.17. 3	TP-4352	10. 0. 0	12.15. 0
TP-4323	7.10. 0	9.11. 3	TP-4353	3.10. 0	4. 9. 3
TP-4324	6. 3. 3	7.17. 3	TP-4354	3.16. 9	4.17. 9
TP-4325	6.16. 9	8.14. 3	TP-4355	2.10. 0	3. 3. 9
TP-4326	7.10. 0	9.11. 3	TP-4356	29. 0. 0	36.19. 6
TP-4327	7.10. 0	9.11. 3	TP-4358	13.13. 3	17. 8. 6
TP-4328	7.16. 9	9.19. 9	TP-4407	3.16. 9	4.17. 9
TP-4329	7.10. 0	9.11. 3			
TP-4330	8. 6. 9	10.12. 6			
TP-4331	10.16. 9	13.16. 3	A to provi		
TP-4332	13.10. 0	17. 4. 3			
TP-4333	11. 0. 0	14. 0. 6			
TP-4334	11. 0. 0	14. 0. 6			

The second second	Garlin Artis		
TYPE	TRADE	RETAIL	TYPE TRADE RETAIL
TZ-1	£4. 2. 0	£5. 4. 6	TZ-842 £18. 0 £1. 3. 0
TZ-3	2. 3. 3	2.15. 3	TZ-84316. 9 1. 1. 3
TZ-5	17. 3	1. 2. 0	TZ-84414. 017. 9
TZ-7	3.13. 3	4.13. 6	
TZ-11	19. 3	1. 4. 9	
TZ-28	3.10. 0	4. 9. 3	
TZ-47	3. 6. 9	4. 5. 0	
TZ-56	1. 6. 0	1.13. 3	
TZ-57	2. 3. 3	2.15. 3	
TZ-63	5. 3. 3	6.11. 9	
TZ-84	3.16. 9	4.17. 9	
TZ-277	1. 0. 9	1. 6. 3	
TZ-344	2. 6. 9	2.19. 6	
TZ-394	10. 0. 0	12.15. 0	
TZ-460	19. 3	1. 4. 9	
TZ-461	1. 0. 9	1. 6. 3	
TZ-462	1. 8. 9	1.16. 6	
TZ-463	1.13. 3	2. 2. 6	
TZ-464	2. 6. 0	2.18. 9	
TZ-465	2.10. 0	3. 3. 9	
TZ-466	3. 6. 9	4. 5. 0	
TZ-467	2.11. 3	3. 5. 6	
TZ-469	4. 3. 3	5. 6. 3	
TZ-550	13.13. 3	17. 8. 6	
TZ-610	4.16. 9	6. 3. 3	
TZ-673	1. 0. 9	1. 6. 3	
TZ-694 }	DDICES ON	DEOHEGE	
TZ-695 J	PRICES ON	TEACEST	
TZ-840	1. 3. 3	1. 9. 9	
TZ-841	19. 3	1. 4. 9	

Excluding Sales Tax

TYPE	TRADE	RETAIL	
Bu.\$ 12	e all an see at	26 7	6
TC-2	£5. 0. 0	£6. 7.	
TC-15	4. 6. 9	5.10.	6
TC-16	4. 6. 9	5.10.	6
TC-125	8.13. 3	11. 1.	0
TC-130	13.10. 0	17. 4.	3
TC-132	8.13. 3	11. 1.	
TC-152	10. 0. 0	12.15.	0
TC-153	10. 0. 0	12.15.	0
TC-154	10. 0. 0	12.15.	0
TC-164	10.16. 9	13.16.	
TC-165	10.16. 9	13.16.	3
TC-166	10.16. 9	13.16.	3
TC-167	10.16. 9	13.16.	
TC-168	10.16. 9	13.16.	
TC-169	10.16. 9	13.16.	
TC-170	10.16. 9	13.16.	3
TC-171	12. 3. 3	15.10.	
TC-172	12. 3. 3	15.10.	
TC-181	10. 0. 0	12.15.	

TYPE	TRADE	RETAIL	TYPE	TRADE RETAIL
TA-3	£5. 0. 0	£6. 7. 6	TA-914B-M51	£11. 0. 0 £14. 0. 6
TA-17	5. 0. 0	6. 7. 6	TA-915B-M17	10.16. 9 13.16. 3
TA-37A	4.16. 9	6. 3. 3	TA-915B-M51	11. 0. 0 14. 0. 6
TA-47	5. 0. 0	6. 7. 6	TA-916B-M17	10.16. 9 13.16. 3
TA-61	5. 0. 0	6. 7. 6	TA-916B-M51	11. 0. 0 14. 0. 6
TA-82	5. 0. 0	6. 7. 6	TA-917B-M17	10.16. 9 13.16. 3
TA-101	4.16. 9	6. 3. 3	TA-917B-M51	11. 0. 0 14. 0. 6
TA-168A	4.16. 9	6. 3. 3	TA-931	4.13. 3 5.19. 0
TA-406A	4.16. 9	6. 3. 3	MS-944	6. 8. 0 8. 3. 3
TA-605	5. 0. 0	6. 7. 6	MS-945	6. 8. 0 8. 3. 3
TA-636	4.16. 9	6. 3. 3	MS-946	6. 8. 0 8. 3. 3
TA-710A	4.13. 3	5.19. 0	TA-947	4.13. 3 5.19. 0
TA-731A	5. 0. 0	6. 7. 6	TA-948	4.13. 3 5.19. 0
TA-733B	4.13. 3	5.19. 0	MS-977	6.16. 9 8.14. 3
TA-763	5. 0. 0	6. 7. 6	TA-1076	5.10. 0 7. 0. 3
TA-770	5. 0. 0	6. 7. 6	TA-1094A	5.13. 3 7. 4. 6
TA-793	5.13. 3	7. 4. 6	TA-1103C	5.10. 0 7. 0. 3
TA-796A	5.10. 0	7. 0. 3	TA-1104B	5.10. 0 7. 0. 3
TA-797	5.10. 0	7. 0. 3	TA-1105A	5.10. 0 7. 0. 3
TA-833	4.13. 3	5.19. 0	TA-1147-M8	7. 6. 9 9. 7. 0
TA-835	4.13. 3	5.19. 0	TA-1147-M51	8.13. 3 11. 1. 0
MS-837	6.11. 3	8. 7. 6	TA-1588	PRICE ON REQUEST
MS-860	6.11. 3	8. 7. 6	TA-1693	4.16. 9 6. 3. 3
MS-866	6. 8. 0	8. 3. 3	TA-1704	PRICE ON REQUEST
MS-878	6.11. 3	8. 7. 6	TA-1774	4.16. 9 6. 3. 3
MS-896	6. 8. 0	8. 3. 3		
TA-909	5.10. 0	7. 0. 3		
TA-913B-M17	10.16. 9	13.16. 3		
TA-913B-M51	11. 0. 0	14. 0. 6		
TA-914B-M17	10.16. 9	13.16. 3		

TYPE	TRADE	RETAIL	TYPE TRADE RETAIL
P3MS	£15. 0	£19. 3	M62 g 1. 0 g 1. 6
P4MS	15. 9	1. 0. 0	M176 6. 3 8. 0
P6MS	17. 0	1. 1. 9	M682 Prices on Application
P3MA	19. 3	1. 4. 9	M1058
P4MA	1. 0. 0	1. 5. 6	M10 1. 0. 0 1. 5. 6
P6MA	1. 1. 3	1. 7. 3	M48 Price on Application
P3FS	1. 5. 9	1.12. 9	M11 8 10
P4FS	1. 7. 3	1.14. 9	
P6FS	1.10. 9	1.19. 0	
S3F	1. 4. 3	1.11. 0	
S4F	1. 6. 0	1.13. 3	
S6F	1. 9. 3	1.17. 9	
S3M	12. 0	15. 3	
S4M	12. 9	16. 3	
S6M	14. 0	17. 9	
S3F1	1.15. 3	2. 5. 0	
S4F1	1.17. 0	2. 7. 3	
S6F1	2. 0. 3	2.11. 6	
S3M1	1. 2. 3	1. 8. 6	
S4M1	1. 3. 0	1. 9. 3	
S6M1	1. 4. 3	1.11. 0	
S3F3	4.15. 0	6. 1. 3	
S4F3	5. 0. 0	6. 7. 6	
S6F3	5.10. 0	7. 0. 3	
S3M3	2.13. 0	3. 7. 6	
S4M3	2.15. 0	3.10. 3	
S6M3	2.19. 0	3.15. 3	
M156R	7. 3	9. 3	
M156T	6. 9	8. 6	
M57	4. 9	6. 0	

Excluding Sales Tax.

Wholesalers Discount 20%.

SHEETMETAL:	
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M50 (Chassis	and	Cover				•		•	•	•	٠	•	•	•	•	€3.12.	6.
M356	11	11	"			•		•	•	•	•	•	٠	•	•	•	£3.8.	6.
M924	Equipm	ent	Trolley	7	۰			•	•			•		•	•		£17.10.	0.
M924A	"		11	with	p	OV	rer	. 8	300	cke	ets	3.	•	•	•	•	£20. O.	0.
	r sheet			icts	su	bj	ec	t	to) (quo	ota	ati	ior	1 8	ga	ainst	

MICROPHONE STANDS:

Table	Type	-	Fixed	•	•	•	•	•	٠	•	٠	•	٠	٠	•	€17.	3.
11	11	-	Adjustable	•	•	•	•	•	•	•	•	•	•	٠	•	£3.15.	0.

" - Heavy Tripod Base £6.12. 6.

AMPLIFIERS AND EQUIPMENT:

Voltage	Regulator	-	S 38		•			•		•		•	•	.£16.10. O.
11	11													. £16.10. 0.
11	115	_	S82			•	•		١.		•	•	•	. £35.10. 0.
Voltage	Stabilise	r	- S116	•	•	٠	•	•	•	٠	•	•	٠	£175. 0. 0.
Ionisat	ion Tester	,	- G1B	•		•			•			•	•	.£109. 7. 6.

Other equipment products - prices on request.

AUDIO TRANSFORMERS
Prefix TA and MS
Issued 11th. October, 1971

TRADE and RECOMMENDED RETAIL PRICES Excluding Sales Tax

18th. October, 1971 Supersedes Price List 1st. March, 1970

TYPE	TRADE	RECOMMENDED RETAIL	TYPE	TRADE	RECOMMENDED RETAIL
TA-3	\$14.15	\$17.70	TA-916B-M17	\$28.75	\$35.95
TA-17	14.15	17.70	TA-916B-M1044	32.40	40.50
TA-37A	13.30	16.60	TA-917B-M17	28.75	35.95
TA-47	14.15	17.70	TA-917B-M1044	32.40	40.50
TA-61	14.15	17.70	TA-931	12.60	15.75
TA-82	14.15	17.70	MS-944	17.85	22.30
TA-101	13.30	16.60	MS-945	17.85	22.30
TA-168A	13.30	16.60	MS-946	17.85	22.30
TA-406A	13.30	16.60	TA-947	13.85	17.30
TA-605	14.15	17.70	TA-948	13.85	17.30
TA-636	13.30	16.60	MS-977	19.35	24.20
TA-710A	12.60	15.75	TA-1076	15.35	19.20
TA-731A	13.85	17.30	2.TA-1094A	14.55	18.20
TA-733B	12.60	15.75	TA-1103C	15.35	19.20
TA-763	13.75	17.20	TA-1104B	14.95	18.70
TA-770	14.15	17.70	TA-1105A	16.60	20.75
1.TA-793	14.55	18.20	TA-1147-M8	21.80	27.25
TA-796A	15.35	19.20	TA-1147-M1044	25.00	31.25
TA-797	15.35	19.20	TA-1693	14.55	18.20
TA-833	12.60	15.75	TA-1774	14.55	18.20
TA-835	12.60	15.75	1.TA-793 supersed	ded by TA225	2
MS-837	18.65	23.30	2.TA-1094A supers		
MS-860	18.65	23.30			
MS-866	17.85	22.30	TELEPHONE ISOLA	ATING TRANSFO	ORMERS:
MS-878	18.65	23.30	TA-1588	37.15	46.40
MS-896	17.85	22.30	TA-1704	45.20	56.50
TA-909	15.35	19.20	TA-1887	53.25	66.55
TA-913B-M17	28.75	35.95	TA-2129	38.75	48.45
TA-913B-M1044	32.40	40.50	TA-2333	38.75	48.45
TA-914B-M17	28.75	35.95	TA-2234	37.15	46.40
TA-914B-M1044	32.40	40.50	TA-2235	37.15	46.40
TA-915B-M17	28.75	35.95	TA-2305	93.60	117.00
TA-915B-M1044	32.40	40.50	TA-2340	37.15	46.40

TRADE

AUDIO TRANSFORMERS
Issued 11th. October, 1971

and
RECOMMENDED RETAIL PRICES
Excluding Sales Tax

18th. October, 1971 Supersedes Price List 1st. March, 1970

MINIATURE RANGE Stock Types as Listed on Leaflet

Quantity Range	Printed Circuit Mounting Strap Clamp Mounting	M508 Case
1-5	\$4.25	\$6.75
6-10	\$3.75	\$6.25
11-20	\$3.20	\$5.70
21-50	\$2.70	\$5.20
51-100	\$2.10	\$4.65
100 Plus	\$2.05	\$4.55
500 Plus	Prices on Application	