

TRANSPOWER

E N G I N E E R I N G



Transformer Manufacturers

All manufactured in the UK

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Transpower Engineering are a trading division of Cee Norm UK Ltd **CEE**NORM

A Complete range of transformers to your requirements

- Both three and single phase from 6VA up to 100KVA
- Isolating or double wound transformers
- Auto transformers
- D.C. output transformers
- Fusing to your application as required



Cases

- Supplier and stockist of Ceenorm (UK) plugs and sockets
- Single and three phase cases up to IP65 (see IP chart)
- Wall and floor mounting type or free standing type



Portable Tool transformers

- 750VA – 5KVA tool transformer unit completely encapsulated in an epoxy resin
- Protected by an overload switch
- BS4343 panel sockets fitted as standard



Site Master

- 5KVA single phase, 240/110V., centre tap to earth, 3 x 16 AMP & 1 x 32 AMP sockets
- 10KVA single phase, 240/110V., centre tap to earth, 4 x 16 AMP & 2 x 32 AMP sockets
- 10KVA three phase, 415/110V., centre tap to earth, 4 x 16 AMP & 2 x 32 AMP sockets
- Double pole miniature circuit breaker fitted to customer requirements



110 Volt Continuous rated transformers for site lighting and power tools

- Transformers in steel casing with 16 AMP or 32 AMP sockets,
- 240/110 volts
- 500VA to 6KVA



Site Lighting

- Halogen bulbs
- Halogen heads with lead
- Minipod with head & lead
- Tripod with double head & lead
- Festoon strings
- Festoon site kit
- Scaffold clamps for



Electrical Outlet Units (EOUs)

- 4 x 16 AMP sockets with lead
- 6 x 32 AMP sockets with or without miniature circuit breakerheads



Wall/Floor Mounting Cases

Single phase

Combined wall and floor mounting, fabricated from mild steel. Finished in grey, hammer, epoxy powder. 2 x 20mm. Conduit entries.

Part No.	Width	Depth	Height
0	127	114	114
1	127	114	178
2	152.5	152.5	203
3	180.5	178	228.5
4	254	178	254
5	279.5	241.5	330
6	305	305	432

Dimensions in millimetres (mm)

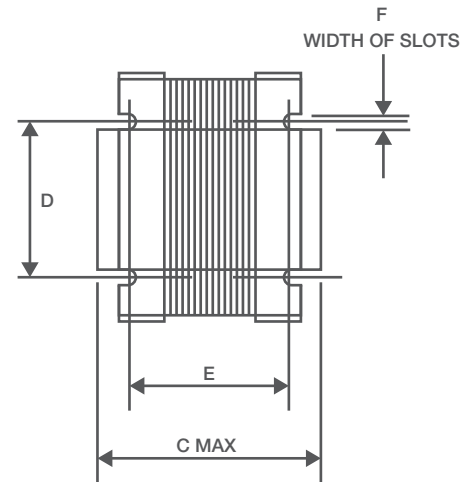
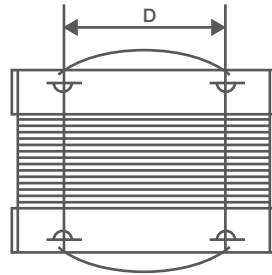
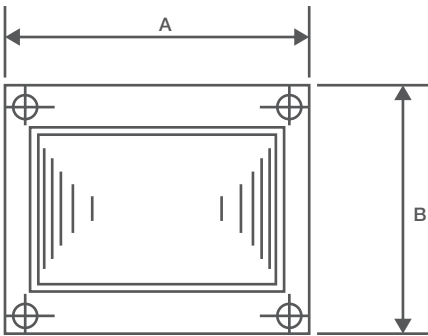
Three phase

A range of floor mounting cases in 2mm. CR4, mild steel. Finished in grey, hammer, epoxy powder. 2 x 20mm. Conduit entries.

Part No.	Width	Depth	Height
31	330	165	305
32	330	254	305
33	406	254	406
34	406	330	406
35	457	330	508
36	457	406	508
37	609	406	609

Dimensions in millimetres (mm)

Universal Fixing Transformers 50V – 6KVA



N.B. If terminal blocks required, A or B measurement will be increased by 25mm max.

These transformers can be mounted in either **A** or **B** dimensions and can have a variety of termination styles:-

- Flying Leads
- Terminal Blocks
- Solder Tags
- Studs

They can have fuses mounted on the terminal board and if assembled in an enclosure, we can fit **Minature circuit breakers, Earth leakage circuit breakers** and **Sockets to BS4343**.

N.B. Enclosure types may vary with additions to standard transformers such as fuses, etc.

VA	A	B	C	D	E	F	Kg	Enc typ
50	81	69	62	54	45	4	0.9	zero
60	100	85	64	64	42	4	1.4	zero
75	100	85	70	64	48	4	1.8	zero
100	100	85	73	64	55	4	2.0	zero
125	100	85	83	64	61	4	2.3	zero
150	100	85	89	64	68	4	2.5	zero
200	120	100	89	64	55	6	3.5	1
250	120	100	104	64	68	6	4.0	1
300	139	116	100	89	60	6	5.6	2
400	139	116	113	89	72	6	6.2	2
500	139	116	125	89	84	6	7.3	2
600	169	169	122	89	80	7	8.0	3
750	169	169	134	89	93	7	10.7	3
800	169	169	147	89	105	7	12.5	3
1000	169	169	159	89	117	7	14.3	3
1250	169	169	159	89	117	7	14.3	3
1500	216	184	159	114	105	10	19.8	4
2000	216	184	165	114	112	10	23.6	4
2500	235	197	178	114	118	10	27.4	5
3000	286	248	190	165	122	13	36.7	6
4000	286	248	203	165	135	13	52.6	6
5000	286	248	229	165	160	13	68.4	6
6000	286	248	241	165	172	13	84.2	6

Dimensions in millimetres (mm)

Application Notes

The following notes are intended to clarify certain points which cause confusion - our aim is to supply the product best suited for your purpose at the most economic price.

Transformer size

The size of the transformer is decided by the product of the output voltage and the output current at full load, i.e. VA = Secondary Volts x Secondary Amps. This is true for single or closely tapped primaries, i.e. 0 - 220 - 240 - 250V, however if a wide range of input volts are required, i.e. 0 - 120 - 240V, this will increase the VA rating by 15% as some of the winding space will not always be used but must be there. This can be overcome by arranging the primaries in series or parallel, i.e. 0 - 120V 0 - 120V. Connect in parallel for 120V operation and in series for 240V operation.

Regulation

When ordering transformers, it is usual to quote the on load RMS voltage. The off load voltage will be higher than this and is a function of the design and size of the transformer. A 3 VA has a typical regulation of 20%, whilst 3KVA would have an approximate regulation of 2%. This is expressed as :-

$$\frac{\text{Off load voltage} - \text{Full load voltage}}{\text{Off load volts}} \times 100\%$$

We quote approximate regulation figures and it must be remembered that the output voltage will be higher if the transformer is not fully loaded. If the regulation is unacceptable, a larger frame size must be chosen.

Autowound Transformers

Transformers are normally double wound. That is, there is no physical connection between primary and secondary as they are two insulated coils, hence the expression - isolating transformer. However if only small variations of voltage either up or down are required, i.e. European motors wound to run on 220V are required to operate on 240V, an auto transformer is very cost effective, although it does not give isolation.

To establish the actual size of the auto transformer, apply the following:-

$$\frac{(\text{Highest voltage} - \text{Lowest voltage}) \times \text{KVA}}{\text{Highest voltage}} = \text{auto VA size}$$

$$\text{i.e. } \frac{(240 - 220) \times (240\text{V} \times 10\text{A})}{240} = \frac{2.4 \text{ KVA}}{12} = 0.2 \text{ KVA} = 200 \text{ VA}$$

So instead of paying for a 2.4KVA double wound transformer, a 200 VA would serve the same purpose.

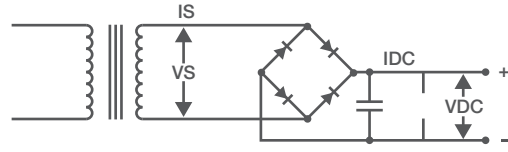
Earth Screen

All our double wound transformers have either a solid copper foil screen between primary and secondary or primary and secondary are wound on separate bobbins. If a screen is imperative, it must be specified. The screen is bonded to the frame of the transformer unless specified otherwise.

Transformers for use in rectifier circuits

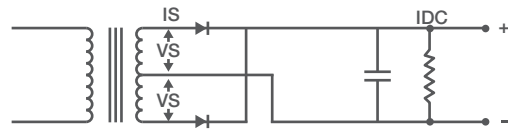
Whenever a transformer is used to supply any load other than a purely resistive one, it is necessary to de-rate its RMS current rating to prevent overload. Two commonly used circuits are shown below. They are intended as a guide only and assume no circuit losses.

Bridge Rectifier - capacitive filter



$$\begin{aligned} \text{VDC} &= 1.4 \times \text{VS} \\ \text{IDC} &= 0.62 \times \text{IS} \end{aligned}$$

Full wave capacity filter



$$\begin{aligned} \text{VDC} &= 0.7 \times 2 \times \text{VS} \\ \text{IDC} &= 1 \times \text{IS} \end{aligned}$$

Transformers for use in regular circuits

In deciding the RMS voltage of the transformers used in a series regulator circuit incorporating semi-conductors, consider the OFF load transformer voltage which the capacitor will cause to change to the peak, not the RMS voltage. This will be further raised by the regulation of the transformer in the off load situation and if in excess of the semi-conductor voltage rating it will destroy it or cause excessive heat dissipation. The table below is given as a guide.

Required regulated volts DC	Recommended transformer output volts
5	9.5
6	9.5
9	12.0
12	15.0
15	17.5

Transformers for use with contactors and relays

When transformers are required to work with contactor coils, the short duration pull-in load followed by a low hold load, means a smaller transformer can be used. The graph below shows a 110V nominal output giving the voltage drop at various loads.

Transformer installation

Transformers should be mounted to allow a reasonable air space around the sides. Special care should be taken to protect the transformers with fuses or over-load cut outs. The primary fuse needs to be rated to cope with switch-on surges. Sometimes, this could be twice the normal primary current. Fuses are inexpensive and our guarantee does not cover transformer burn-outs due to failure of other components.

Our philosophy is one of continuous improvement and therefore the right to alter or amend any product without prior notice is reserved