



# electro-wind limited

Manufacturers of Transformers, Reactors, Power Supplies  
and Site Electrical Equipment

# Welcome To Electro-Wind

For over 35 years our engineers have been designing and manufacturing single and three phase transformer products for customers in the UK , Europe and Worldwide, having a well established reputation as one of the UK's leading specialists we have fulfilled many contracts for companies such as Alstom, Tata, Corus, Mitsubishi, Siemens and Toyota.

Established in 1979, Electro-Wind is an independent, second-generation family owned and operated company which offers a strong commitment and continuous passion for what we do.

Our expertise and capabilities in the coil winding industry enables us to manufacture any bespoke transformer from 10VA up to 2MVA, in addition to AC reactors, DC rectifiers and chokes, with a comprehensive range of associated products including site electrical accessories on offer for your convenience.

A rapid response repair service is available, from new enclosures to complete rewinds; we can offer a 24 hour service when needed. Full technical support is available to enable you to offer your customer the best service possible.

All Electro-Wind's transformers are manufactured to IEC61558 and IEC60076 and we are ISO9001 accredited, full certification for testing and conformity is available upon request.

We pursue everything we do with enthusiasm and we commit to deliver the highest quality solution and remain steadfast in our pursuit of great results. We thrive on challenges and constantly strive to surpass our customers' expectations.

We believe that the strength and enthusiasm of our determined team drives our organisation to greater success and pride ourselves on the exceptional service and products no matter how big the project or how small the request we aim for excellence in our response.



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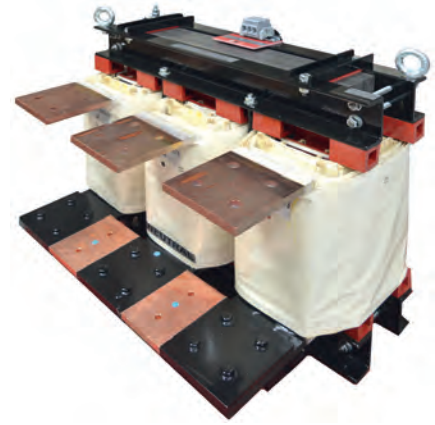
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At Electro-Wind, we pride ourselves on exceeding customer expectations, delivering on time and within budget.



Electro-Wind Ltd

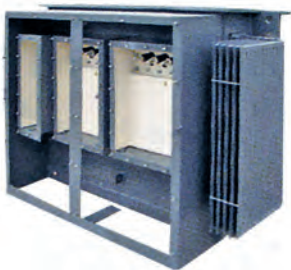
t.01782 776321

[www.electro-wind.co.uk](http://www.electro-wind.co.uk)

# Power and Distribution



25kVA ONAN  
6600V - 400V



3300V to 400V  
pad mounted  
ONAN 50  
to 175kVA

In addition to the standard transformer enclosures that we offer, we also design and commission the fabrication of special cases to meet your requirements.

## Industrial Transformers, Chokes, AC Reactors

- Electro-Wind's experienced engineers can design and manufacture any bespoke transformer from 10VA up to 2MVA.
- 50VA to 10kVA available directly from stock.
- Open type or enclosed, air cooled or oil cooled built to order as per customer' specification.
- Voltages up-to 15kV.

## Isolation Transformers

**Our single-and three-phase isolation transformers are double wound, intermittent or continuous duty cycles, complete with earth screen between the primary and secondary windings.**

These types of transformers can be specified to step up or down the voltage. Different types of termination can be incorporated into the design, including screw, din rail mounted, stud type terminals, flying leads, copper flags and shrouds.

Transformers can be enclosed from our range of standard enclosures. We also offer a bespoke enclosure service where any size, shape, IP rating, or materials (mild steel, stainless steel, aluminium, GRP plastic, etc.) can be supplied.

## Auto Transformers

Designed for use in commercial, rail, offshore and military applications, we design specifically to meet clients' needs.

We offer many options and styles, including a variety of terminations, open type or with an enclosure, wall or floor mounted to various IP ratings, and with additional components and circuitry. We will work to any specification, meet project budgets and offer short lead times. We also provide Korndorffer method auto transformers for motor starting applications.



10,000V to 415V  
Dry Type  
500KVA



## Reactors and Chokes

We supply a large range of input and output line reactors for harmonic attenuation in AC power systems, along with DC chokes for smoothing AC ripple in DC circuits.



## Hexaphase Transformers (5-Limb)

Five-limb transformer cores offer low impedance to the flow of unbalanced load between the line and neutral (zero-sequence component of current).

Better heat dissipation can be achieved as there is greater surface contact with ambient air or transformer oil/coolant. All hexaphase transformers are designed and built by our engineers to any specific application.



## K-Factor Transformers

K-Factor transformers are designed to reduce the heating effects of harmonic currents created by loads.

The K-Factor rating is an index of a transformer's ability to withstand harmonic content while operating within the temperature limits of its insulating system.

We can calculate K-Factor ratings of any magnitude when harmonic values are given, which enables us to design and build a K-Factor transformer specific to clients' requirements.



## Dry Type Transformers IP65

68kVA 1ph

415V to 17V @ 400A IP65

Bespoke colours to meet client's requirements

Where special requirements are requested, we follow customers' details, working with them to achieve their unique specifications.





## Air Cooled Transformers

A versatile range of transformers, up to a maximum of 600V and ratings up to 60kVA 1 phase & 100kVA 3 phase, can be provided for projects in the USA, Canada and other parts of the world that require UL approvals.

## UL Range

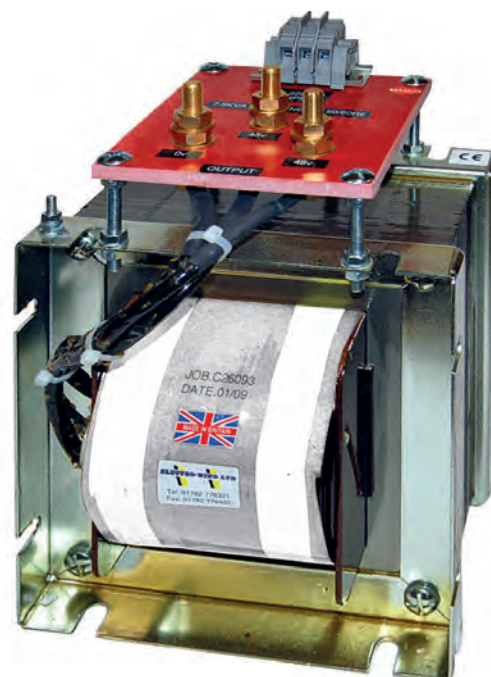


### Electro-Wind Transformers UL Recognition for USA & Canada

Product Category	XQNX2
Product Category	TBC
File Number	E3529819
Insulation System	OBJY2. Class 180 (H) DV-180-1
Maximum Impedance	5% (Transformers rate 2kVA and above)
Maximum Voltage	600V RMS
Product Range	Single Phase: 100VA to 60kVA
(equivalent size)	Three Phase: 300VA to 100kVA
Catalogue Number	Transformers: TBC
(model number)	



Electro-Wind offers express delivery for emergency situations.



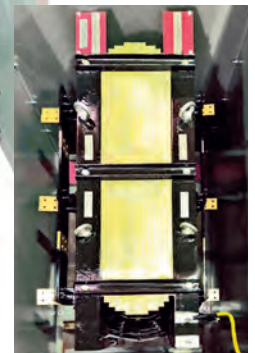
# 3 Phase Transformers



Our three-phase transformers are designed and manufactured to IEC60076 and IEC61558.

These are double wound isolation transformers for continuous duty, complete with earth screen between the primary and secondary windings. These types of transformers can be manufactured to meet specific standards.

- Primary Voltage To customer's specification or 15KV
- Secondary Voltage To customer's specification or 15kV  
Ratings up to and including 2MVA  
Dry type and oil cooled options are available
- Frequency 50/60Hz or customer requirements
- Insulation Class B, F, H or C
- Insulation Resistance > 5 Meg  $\Omega$
- Dielectric Strength
  - Primary to Secondary > 38kV
  - Primary to Earth > 38kV
  - Secondary to Earth > 38kV
- Ambient Temperature 30°C or to meet customer requirements
- Duty Continuous duty at the rated kVA
- Core High grade electrical steel, securely clamped and tied
- Windings Grade 2 Polyester covered copper round wire or Nomex covered copper strip
- Cooling Open transformers - AN enclosed ANAN fan cooling can also be provided on special units
- Terminals Din Rail mounted, stud or copper bus bar according to the current level
- Earthing Earth Screen between Primary and Secondary Windings with cable brought out and bonded to the core and all steel metalwork
- Enclosures Sheet steel enclosures can be provided, standard and bespoke available
- Protection Fuses or circuit breakers can be fitted.



## 3 Phase Transformer in Stainless Steel Enclosure IP55

Input	480V $\pm$ 10%
Output	300V
Rating	145KVA
Frequency	50/60Hz
Class	H
Vector Group	Dyn11

Electro-Wind's engineers can help you find the right solution for you at the most cost effective price and with our own workshop, lead times are at a minimum.



# DC Rectifier Units



## Rectifier Power Transformers

We manufacture air and oiled cooled transformer rectifier units that transform and convert an AC current derived from a single or three phase mains supply to a higher or lower DC Voltage.

This also provides a power supply solution for equipment designed to operate from a DC Power Supply.

Examples are from a few volts at 7000A to inject a current into a railway conduction rail system for testing purposes, up to 5kV at a few amps for running and testing high voltage motors.

We also provide power supply units for the logistics industry and power supply solutions for the motor home and caravan sectors.



Our DC rectifiers are specifically developed to provide a power supply solution for a wide and varied range of applications, such as:

**Industrial automation**  
**Rail**  
**Marine**

**Automotive**  
**Military**

## Trailer Transformer / Tail Lift Transformer

Electro-Wind specialises in DC rectifiers specifically for use in the logistics industry.



Our power supply units provide the required DC supply to enable the use of moving deck and tail lifts when unaccompanied by a shunter or tractor unit. This saves fuel and is kinder to the environment.

The units are supplied to your individual requirements with control gear where needed.

Mobile options are available on lockable castor wheels or you can choose from fixed installation units which can be wall or floor mounted.

We have fulfilled many contracts for companies such as:



MARKS & SPENCER

Argos

T.J. MORRIS LTD

WHSmith next



# Machine Tool Transformers



Electro-Wind is one of the UK's leading manufacturers of machine tool transformers, our continued support and extensive knowledge within the industry has put us at the forefront of our customers minds.

Experience with design and manufacture puts us as a key supplier to many machine tool companies.

Our focus and drive is to get the best product at the most competitive price to ensure longevity of our transformers.



## Mains Distribution Units

Electro-Wind Ltd supplies Mains Distribution units for temporary and permanent installation.

The units are designed to meet the needs of indoor and outdoor events, for education, military, construction, rail, nuclear and other industrial applications.

Easily accessible power switches allow for instant power isolation/ connection to multiple pieces of equipment. To reduce the risk of overload and of essential units being unplugged, all mains voltage sockets and inlets are housed behind pad-lockable doors.

We supply as standard the following:

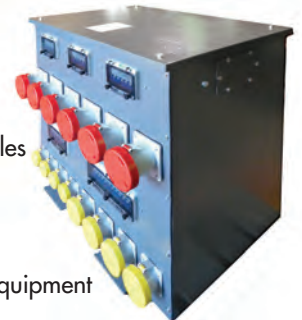
- Single door distribution units up to 125A with a range of incoming and outgoing configurations
- Double door distribution units up to 250A with a range of configurations
- Double sided units up to 1200A

Our standard distribution products will meet most specific requirements of our customers, or can be designed and customised to any specification to suit a variety of applications.



## Temporary Distribution Solutions

- Enclosed Isolators
- Combined CT Chamber and RCDs
- Site Intake Assemblies
- Auto Mains Failure Assemblies
- Custom range of Reflex Plug-In Assemblies
- 110V Distribution and Accessories
- Custom range of Power and Lighting Assemblies for Tunnels
- High Current Sockets and Associated Equipment
- Custom Range of PFC Assemblies



## Permanent Distribution Solutions

- MCB Boards (IP55 and IP66) up to 250A
- Single Point Assemblies
- Power Clusters
- Automatic Transfer Switch Assemblies up to 400A
- Ground Mounted Assemblies
- CT Chambers
- Pillars—supplied either fully equipped with control and switch gear or empty for on-site installation



Custom built assemblies can be manufactured up to 3200A rating and these can incorporate Form 4 segregation and crash frames to provide additional mechanical protection.



# Railway Signalling Transformers



## Class 1 Transformers 400/650V

Electro-Wind design and manufacture a range of outdoor suitably rated weather proof enclosures from IP44 right through to IP65 to suit client needs and conform to Railway Specifications.

Our continuous development with major railway customers has given Electro-Wind the knowledge and challenges ahead within the signalling world.



### CLASS 1 - IP55

- Signalling Transformer for outdoor Use
- 1PH & 3PH 400/650V  $\pm 2.5/5/7.5\%$  via switch
- Rating 5KVA up to 300KVA
- Inrush - 5 times
- All built to Network Rail Standards BR924A and NR/L2/SIG30007



## Class I Transformers - PSP and FSP Applications

Electro-Wind can design and manufacture these types of transformers in copper or aluminium to meet the needs of customer specification.



### Single Phase Railway Signalling Transformer for indoor use

Product acceptance No: PA05-06988

- Primary 400v 1PH 50/60Hz
- Secondary 650v  $\pm 2.5/5/7.5\%$  taps via off load tapping switch (lockable)
- Rating 5kVA to 200kVA
- Insulation Class H
- Construction Built in accordance with BR924A & NR/L2/SIG30007



### Three Phase Railway Signalling Transformer

- Primary 400v 3PH 50/60Hz
- Secondary 650V  $\pm 2.5/5/7.5\%$  taps via off load tapping switch (lockable)
- Rating 5kVA to 300kVA
- Insulation Class H
- Construction Built in accordance with BR924A & NR/L2/SIG30007

### History of previous projects

**Feltham Resignalling Phase 0 – Shepperton branch pilot scheme: Jan 2019.**

Phase 0 which is due to commission in January 2019. However, a number of other transformers will be required in the project's later phases. This constitutes a total of 5 phases.



## Rail Side Service Pillar

Input Volts (On Load) Transformer	240V 1PH
Output Transformer	110V 1PH (55.0.55) CTE
Ingress Protection BS EN60529	IP00
Frequency – Hz.	50/60
Type	Dry
Ambient Temperature Degrees C	25°
Duty Cycle	Continuous
Earth Screen	Included
Dielectric Class	3kV
Insulation Class (Temp. rise)	F

Item Data	Option A
Quantity	9
Rating	2kVA (continuous)
Enclosed	Steel Enclosure Floor mount Tower unit (Marine Blue RAL5002) Special IP67
Height (mm) Approx. H	900
Length (mm) Approx. L	305
Depth (mm) Approx. W	230
Weight (kg) Approx.	32.14

### Part B – Fittings

Input Device	Hard Wire, Cable Entry via Base	2 x 35mm 4C Armoured (Client To Fit)	Provision to Accept
Isolation Switch	1 x 63A 4P Mains Isolation Switch		
Output 1 (Non Isolated)	1 x 32A 400V 5P IP67 Socket		
Outlet 1 Protection	1 x 32A TP Type "C" MCB & 1 x 40A 30MA 4P RCD for 32A 400V S/O		
Transformer Input Protection	1 x 16A DP Type "D" MCB		
Output (Isolated)	1 x 16A 110V 2P+E IP67 Socket		
Output Protection	1 x 16A DP Type "C" MCB & 1 x 25A DP 30mA RCD for 16A 110V S/O		
Fittings	All MCB &, RCD under IP65 quick release Covers		
Standard	BS EN 61558		



All our quality standards and procedures are monitored independently to BS EN 9001, and are subject to regular external and internal audits.



# Transformers for Electric Vehicle Charging Points

## Electric vehicle charging installations

Electro-Wind specialise in Isolation Transformers for Electric vehicle charging installations used in domestic and commercial applications.

Historically, domestic EV charging points relied on the system earthing supplied by the main electricity supply to the building, the new legislation requires a PME earthing facility not to be used for the protective conductor, unless certain methods are employed.

The isolating transformers for domestic installations are supplied in a suitable enclosure that can be fitted to an internal wall of a garage or externally, if required, to supply an EV charge point.

The new legislation change is not retrospective and only applies to new installations from the 1st January 2019.



Electro-Wind Ltd can meet your needs for all EV charge point power ratings, for domestic and ultra-fast chargers.



Electro-Wind Ltd supplies Mains Distribution units for temporary and permanent installation.

Electro-Wind offers a cost-effective solution to your isolation transformer needs whether it's a new, single or three-phase supply or an upgrade to a previous EV point installation.

## New stringent rules have been introduced for ELECTRIC VEHICLE CHARGING INSTALLATIONS.

The IET Wiring Regulations 18th Edition, Requirements for Electrical installations BS7671:2018 was released on 1st July 2018 and becomes mandatory from the 1st January 2019.

Section 722 covers the particular requirements when installing points for EV charging.



Our isolation transformers are built to comply with BSEN61558-2-4 and have been installed to supply power to EV chargers at



# Control Panel Transformers



## Isolating Control Panel Transformers

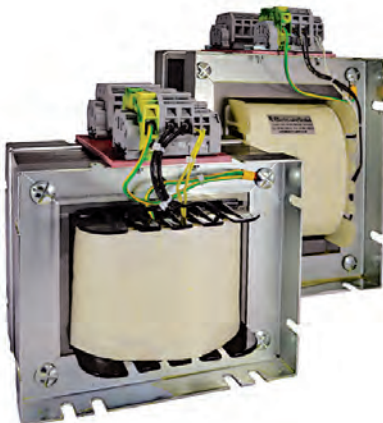
Our isolating Control Panel Transformers comply with the highest standard and are manufactured to the requirements of BSEN61558.

The double wound isolating transformer design with shrouded terminals and easy fix frames meets and exceeds the most stringent safety requirements; UL and CSA equivalents are also available.

- IP20 terminal cover for safety
- Din rail mounted versions available connections
- All insulating material to the highest standard
- Easy fix frame up to 750VA
- Supplied with protective earth connections

We carry a large stock of single phase control panel transformers. However, with the full support of our workshop and rapid response times, we can manufacture any 3 phase or bespoke transformer to meet your specific requirements.

All standard range or bespoke transformer can be enclosed. A large selection of enclosed control transformers are held in stock.



Stocked items are as follows:

Input Voltage 1ph	Output Voltage	VA rating	Product code
380/400/440V	110V	50 to 15000VA	EA50 to EA15000 CT Option
400V	110V	50 to 15000VA	EB50 to EB15000 CT Option
230V	110V	50 to 15000VA	EC50 to EC15000 CT Option
230V	24V	50 to 3000VA	ED50 to ED3000 CT Option
400V	24V	50 to 3000VA	EE50 to EE3000 CT Option
400V	230V	50 to 15000VA	EH50 to EH15000 CT Option
400V	55/0/55 or 110VCT	5000VA	B5000CT
400V	55/0/55 or 110VCT	10000VA	B10000CT
230V	55/0/55 or 110CT	5000VA	C5000CT
230V	55/0/55 or 110VCT	10000VA	C10000C

All available with or without centre tapped output from stock just add CT to the product code.

# General Purpose Transformers

## Floor or Wall Mounted Transformers

All units can be supplied in steel or fibreglass enclosures portable or fixed, with or without MCBs, RCDs sockets etc we can supply bespoke to your requirements.

- 230V to 110V Tool transformers
- Intermittent rating 20% Duty cycle
- Range 750VA and 5kVA
- Housed in robust GRP cases providing security and durability
- Manufactured in accordance with BSEN61558 CE & RoHS Compliant

VA	Details	Rating	Product Code
1.5kVA	Metal Enclosed IP22 2 skts & thermal trip	Intermittent	WM15002TR
1.5kVA	Metal Enclosed IP22 c/w thermal trip	Intermittent	WM1500TR
3.3kVA	Metal Enclosed IP22 c/w 2 skts & thermal trip	Intermittent	WM33002TR
3.3kVA	Metal Enclosed IP22 c/w thermal trip	Intermittent	WM3300TR
5kVA	Metal Enclosed IP22 4 skts & thermal trip	Intermittent	WM50004TR
5kVA	Metal Enclosed IP22 complete with thermal trip	Intermittent	WM5000TR



## Heavy Duty 110V Portable Site Transformers

- Designed for carrying full & continuous load
- Suitable for Lighting and heavier loads such as heaters
- Manufactured in accordance with BSEN61558 CE & RoHS Compliant

	Product Code
3kVA 230V to 110V Transformer Centre Tap Earthed Continuous Isolation Transformer Metal Enclosure IP21 c/w 1x32A skt handle 2M lead & UK 13A plug 13A overload manual reset trip	M30TCV
3kVA 230V to 110V Transformer Centre Tap Earthed Continuous Isolation Transformer Metal Enclosure IP21 c/w 1x32A 1x16A skt handle 2M lead & UK 13A plug 13A overload manual reset trip	M30TCV32/16



## Weatherproof Lighting Transformers

### Safety Isolating Transformers - Outdoor Use

- Input Volts 230V
- Output Volts 12V, 24V or 48V
- Available up to 2000VA
- Manufactured to the general requirements of BS5353
- IP55 or IP65
- Housed in wall or pole mounted enclosure
- Over temperature cut-out for added safety
- Tappings available to compensate for Volts Drop



All general purpose transformers are available from stock, including bespoke ratings and enclosures.

# Power Tool Transformers

Electro-Wind carries a large choice of Power Tool Transformers in stock. However, any rating to suit your needs can be made and continuous options are available.



## Continuous or Intermittent Ratings

- Step up option
- Metal or GRP case
- Optional IP ratings
- Socket Arrangements
- Contact sales for specific requirement

VA	Details	Rating	Product Code
750VA	110V 1 x 16A socket c/w 13A plug	Intermittent	P7/1
1kVA	110V 1 x 16A socket c/w 13A plug	Intermittent	P10/1
1kVA	110V 2 x 16A sockets c/w 13A plug	Intermittent	P10/2
1.5kVA	110V 1 x 16A socket c/w 13A plug	Intermittent	P15/1
1.5kVA	110V 2 x 16A sockets c/w 13A plug	Intermittent	P15/2
2.25kVA	110V 2 x 16A sockets c/w 13A plug	Intermittent	P20/2
3.3kVA	110V 1 x 16A socket c/w 13A plug	Intermittent	P30/1
3.3kVA	110V 2 x 16A sockets c/w 13A plug	Intermittent	P30/2
3.3kVA	110V 2 x 16A sockets c/w 16A plug	Intermittent	P3016/2
3.5kVA	110V 2 x 16A sockets c/w 13A plug	Intermittent	P35/2
5kVA	110V 2 x 16A + 1 x 32A Sockets	Intermittent	P50/3



## Portable Step Up Power Tool Transformers

- Converts 110V to 230V to operate 230V tools on a building site
- Housed in robust GRP cases providing security and durability
- All available from stock
- We can custom build to your specifications
- Manufactured in accordance with BSEN61558 CE & RoHS Compliant
- Intermittent rated

			Product Code
1.5KVA 110V to 240V transformer	1 x 16A skt, plug,	2m lead & manual reset overload trip	P24015/16A
3KVA 110V to 240V transformer	2 X 13A skts plug,	2m lead & manual reset overload trip	P24030/13
3KVA 110V to 240V transformer	2 X 16A skts plug,	2m lead & manual reset overload trip	P24030/16



Our in-house engineers will work to our clients' budgets, and with the use of our own workshop, we have superior flexibility allowing us short lead times.



# Site Transformers - Single and Three Phase



- 110V Site Transformers
- Single and Three Phase
- Available in both 230V and 400Volt inputs
- Range 5kVA to 10kVA any rating can be made bespoke for you
- Manufactured in accordance with BSEN61558 CE & RoHS Compliant

## 5KVA 1ph Continuous

<b>VA Product Rating</b>	<b>5kVA Continuous</b>	<b>Product Code</b>	<b>P50/TC</b>
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- Single Phase Site Transformer
- Mains supply 230Volt to 3 x 110Volt.
- 2 x 16Amp + 1 x 32Amp Sockets
- Tough GRP case with carry handles
- Input lead 2.5mm 3 core blue arctic cable no plug
- Resettable Thermal Trip on Primary
- 45kgs



## 5KVA 1ph Continuous

<b>VA Product Rating</b>	<b>5kVA Continuous</b>	<b>Product Code</b>	<b>M505C</b>
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- Single Phase Site Transformer
- Mains Supply, 230Volt - 110Volt CTE
- Primary MCB 20Amp DP type D
- 4 x 16Amp sockets, 1 x 32Amp sockets IP44
- Protected by 2 x 20Amp DP MCB, 1 x 32Amp DP MCB
- MCB Cover and Carry Handles
- Heavy duty sheet steel enclosure to IP23
- 46kgs



## 10KVA 1ph Continuous

<b>VA Product Rating</b>	<b>10kVA Continuous</b>	<b>Product Code</b>	<b>M100C</b>
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- Single Phase Site Transformer
- Mains Supply, 230Volt to 110Volt CTE
- Primary MCB 40Amp DP type D
- 4 x 16A 110V Panel sockets, 2 x 32A 110V Panel sockets Protected by 2 x 20Amp DP MCB and 2 x 32Amp DP MCB
- MCB Cover and Carry Handles
- Heavy duty sheet steel enclosure to IP23
- 72kgs



## 10KVA 3ph Continuous

<b>VA Product Rating</b>	<b>10kVA Continuous</b>	<b>Product Code</b>	<b>M3100C</b>
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- 3 Phase Site Transformer
- 400Volt-110Volt CTE
- Primary MCB 16amp T/P MCB
- 6xSKTS 5x MCB, 4 x 16amp sockets
- Protected by 2 x 20 Amp DP MCB and 2 x 32Amp sockets
- DP MCB
- MCB Cover and Carry Handles
- Heavy duty sheet steel enclosure to IP23
- 83kgs





# Extension Leads and Splitter Boxes



Full range of extension leads to suit all requirements.  
Bespoke items manufactured in house.



230V 13amp 14M 3 core extension lead 1.5mm blue cable	<b>E113240</b>
230V 16amp 14M 3 core extension lead 1.5mm blue cable	<b>E116240</b>
230V 32amp 14M 3 core extension lead 4.0mm blue cable	<b>E432230</b>
230V 16amp plug to 13amp 1 gang 230v socket fly lead	<b>FL1613</b>
110V 16amp 14M 3 core extension lead 1.5mm yellow cable	<b>E116110</b>
110V 16 amp 14M 3 core extension lead 2.5mm yellow cable	<b>E216110</b>
110V 32 amp 25M 3 core extension lead 4.0mm yellow cable	<b>E43211025</b>
110V 32amp 14M 3 core extension lead 4.0mm yellow cable	<b>E432110</b>
415V 3 phase extension leads	<b>SPECIAL</b>

**Bespoke lengths made to order**

## Cable Reels

PLASTIC CABLE REEL 110V 25M c/w 2 x 16A Sockets	<b>CRP25110</b>
PLASTIC CABLE REEL 110V 50M c/w 2 X 16A Sockets	<b>CRP50110</b>
PLASTIC CABLE REEL 230V 25M c/w 2 X 13A Sockets	<b>CRP25230</b>
PLASTIC CABLE REEL 230V 50M c/w 4 X 13A Sockets	<b>CRP50230</b>

## Splitter Boxes

110V 32A 2 Way GRP Junction box c/w 3M cable & plug	<b>2W32AJBC</b>
110V 16A 4 Way Metal Junction box c/w 5M cable & plug	<b>4WJBC</b>
110V 16A 4 Way GRP Junction box c/w 5M cable and plug	<b>4WJBC/P</b>
110V 16A 6 Way Metal Junction box c/w 5M 4.0mm cable & 32A Plug	<b>6WJBC</b>
230V 16A 4 Way Junction box c/w 5M 2.5mm cable & 16A plug	<b>4WJBC230</b>

Robust steel, GRP case or moulded case. We can manufacture any purpose built unit to your specification.

## Trailing Sockets

3 Way Adaptor 110V 16amp	<b>WAD16-110</b>
2 Way Adaptor 110V 16amp	<b>YAD16-110</b>
3 Way Adaptor 110V 16amp	<b>AD1103</b>

## Cable (100 metre)

1.5mm <sup>2</sup> 3 core 230V Blue Arctic Grade	<b>1.53CB</b>
1.5mm <sup>2</sup> 3 core 110V Yellow Arctic Grade	<b>1.53CYE</b>
2.5mm <sup>2</sup> 3 core 230V Blue Arctic Grade	<b>2.53CB</b>
2.5mm <sup>2</sup> 3 core 110V Yellow Arctic Grade	<b>2.53CYE</b>
4.0mm <sup>2</sup> 3 core 110V Yellow Arctic Grade	<b>4.03CYE</b>

## Plugs, Sockets and Adaptors

- IP44 or IP67 degree of protection
- 690 Volt, 415 Volt, 230 Volt, 110 Volt, 50 Volt, 24 Volt
- 13 Amp (230 Volt) 16 Amp, 32 Amp, 63 Amp
- Body made from insulating, thermoplastic, self-extinguishing material
- Spring lid on female couplers & panel sockets
- Manufactured to BSEN 60309

# LED Site Lighting

## TASKLIGHTLED110SKT

110V 20W LED tasklight IP44  
1 x 16A skt 3M lead and 16A plug



## HLIGHT20LED

110V 20W LED Portable Light,  
3M lead and 16A plug



## HLRLED10MAG

230V 10W LED Rechargeable  
Portable Work Light,  
c/w magnetic feet  
mains and car charger included



## HLRLED20

230V 20W LED Rechargeable,  
Portablework Light  
c/w mains and car charger



## TRID20LED

110V Folding Tripod Light,  
2 x 20W LED heads  
3M lead and 16A plug



## TRID30LEDSKT

110V Folding Tripod Light  
Heavy Duty 2 X 30W LED Heads  
2 x 16A skts, 3M Lead and 16A plug



## TRIS20LED

110V Folding Tripod Light,  
1 x 20W LED head  
3M lead and 16A plug



## TRILED4R

230V 36W Rechargeable LED 4ft  
Uplight  
UK Mains Battery Light up to 16 hours  
working time



## TRIFL4SKTLED

110V 36W LED 4ft Uplight Folding Leg Tripod,  
1 x 16A skt 3M lead & 16A plug



## TRIFL5LED

110V 44W LED 5ft Plasterers Folding  
Leg Tripod Mounted Light  
2 x 16A skts, 5M lead and 16A plug



## TRIFL2LED

110V 30W LED 2ft Plasterers Folding Leg  
Tripod Mounted Light,  
2 x 16A skts, 5M lead and 16A plug



## LF2LED30WP and LF5LED44WP

110V 2ft 30W or 5ft 44W LED Light Fitting  
IP65 Anti-Corrosive Magnets optional.  
Can be linked  
Comes with cable input and plug and  
cable output and coupler  
Can be wired to your needs



## LF2LED30 and LF5LED44

110V 2ft 30W or 5ft 44W LED Light Fitting  
IP65 Anti-corrosive magnets optional.  
Can be linked



## FL2AFRAMELED

110V 30W LED A Frame,  
2 x 16A skts 5M lead and 16A plug



## SITEKITLED

110V 22M LED Festoon Kit  
10 x 8W LED Lamps, Guards  
and 16A plug



# Site Lighting

## Replacement Bulbs and Lamps

Compact fluorescent lamp 110v 13W ES  
 Compact fluorescent lamp 110v 18W ES  
 Compact fluorescent lamp 110v 24W ES  
 2FT Fluorescent Tube 18 WATT  
 Low energy 35w lamp  
 Tungsten Halogen Lamp 300W 110V  
 Tungsten Halogen Lamp 500W 110V  
 Tungsten Halogen Lamp 500W 240V

**CFL11013**  
**CFL11018**  
**CFL11024**  
**FL2/TUBE**  
**LEL35W**  
**TH3/110**  
**TH5/110**  
**TH5/240**

### TASKLIGHT110V

**110V 38W 2D fluorescent IP44**

*can be handheld, floor standing or wall mounted  
 c/w with 3M lead and 16A plug*

**Low Energy**



### FL2AFRAME

**110V 500W 2 x 18W 2FT Fluorescent A frame**

*c/w 2 x 16A skts 5M lead and 16A plug*



### TRIFL2/SKT

**110V 2 x 18W Folding Leg Tripod**

**Mounted Fluorescent**

*c/w 2 x 16 Skt tube 5M lead and 16A plug*



### TRI/LE

**110V 500W Folding Leg Telescopic Tripod Light  
 with Single Halogen Head**

*c/w metal guard 5M lead and 16A plug*



### SITEKIT/ES

**110V 22M Festoon Lighting**

*c/w 10 x 60W ES lamps, Guards and  
 16A plug.*

*Also available with 13W Low Energy Lamps*



### WG/LAMP110

**110V ES gripper hand lamp**

*c/w Wire Guard 5M lead & 16A plug*



### H/LIGHT

**110V 500W Halogen Portable Light**

*comes with Metal Guard, 3M lead and  
 16A plug*



### TRIFL4/SKT

**110V 36W 4ft Folding Leg Fluorescent Tripod**

*c/w 1 x 16A skt 3M lead and 16A plug*

**Low Energy**



### TRIFL5/SKT

**110V 1 x 58W 5ft Folding Leg Tripod**

**Mounted Fluorescent**

*c/w 2 x 16A skts 5M lead and 16A plug*



### TRI/TE

**110V Folding Leg Telescopic Tripod**

**Light with Twin 500W Halogen Heads**

*c/w Metal Guard, 5M lead and 16A plug*



### F/KIT100MES

**110V 100M Festoon Lighting**

*c/w 33 x 60W ES Lamps,  
 Guards and 16A plug.*

*Also Available with 13W*

**Low Energy Lamps.**

*50M Festoon available on request*



All Electro-Wind's standard transformers are manufactured to IEC61558 and IEC60076.



# Transformer Repairs



## Extensive repair and test facilities with full technical support

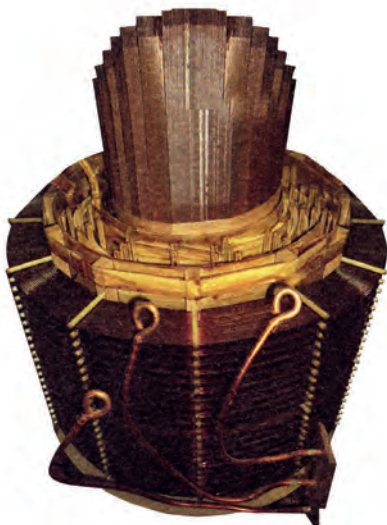
With over 30 years' experience in transformer repair and manufacture, Electro-Wind has the skills, facility and expertise to carry out any transformer repair ranging from less than 10VA to 2MVA.

We repair the full range of transformers from control transformers to large 3 phase distribution transformers, offering a 24 hour service when required.

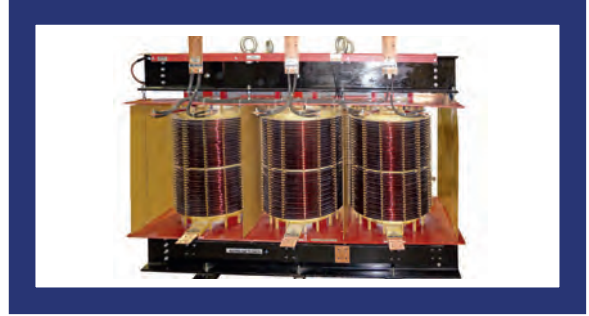
Our vast experience in manufacturing single phase and three phase transformers allows us to offer a repair service for transformers, along with reactors and chokes. We maintain good stock levels of all standard laminations, frames, wire and bobbins. This enables us to offer quick lead times in breakdown repair situations. All specialised parts can be procured from our extensive supplier network.

All transformers are fully tested at rated voltage and load testing/heat runs can be performed where requested. Full test certificates are available.

Enclosure repairs and replacement options are provided as part of our repair service.



# Case Studies



## Aircraft Research Association Ltd. 12 pulse Hexaphase transformer & IBR Upgrade to drive system on Transonic Wind Tunnel.

Part A – Specification	Data
Input volts (on-load)	11000V 3ph (3 wire) @ 86A
Output volts A (on-load)	2 x 500V 3ph (3 wire) @ 941A
Ingress Protection BS EN60529	IP00
Frequency – Hz.	50 / 60 Hz
Type	Dry
Vector Group	Dd0yn11
Screen between HV/LV windings	Yes
Ambient Temperature Degrees C	30°C
Impedance Voltage (%)	7%
Primary Tapings	± 2.5 & 5%
Duty Cycle	Continuous
Commutating Impedance (%)	7.3% (balanced to 10% between windings)
Total loss @ nominal voltage/ freq.	TBA
Dielectric Class	28 kV
Insulation Class (Temp. rise)	H
Winding Conductor Material	TBA

Item Data	Option A
Quantity	1
Rating	1630 kVA
Enclosed (Medium grey)	IP22
Height (mm) Approx. H	2000
Length (mm) Approx. L	2000
Depth (mm) Approx. W	3000
Weight (kg) Approx.	5000

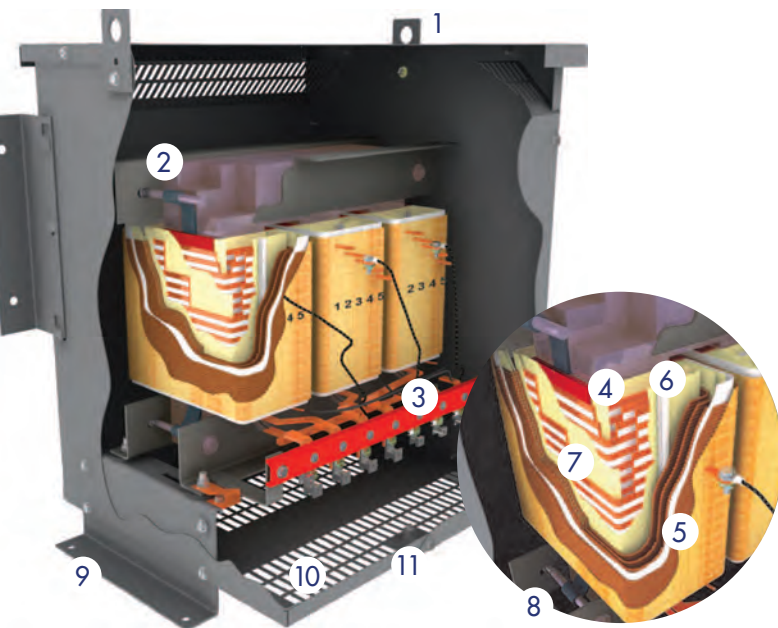
Part B – Fittings	
Connection	Bushings / Cu bus bar flags.
Protection	Not requested
Notes	For use with regenerative 12 pulse thyristor drive to start and run a DC motor Not oversized for input harmonics or any other factor not shown on the quote
Standard	BSEN 60076

Part A – Specification	Data
volts (on-load)	520VDC
Input	1150A DC (from 6 pulse)
Output	2300A DC (12 pulse)
Ingress Protection BS EN60529	IP00
Frequency – Hz.	300 Hz
Type	An (dry)
Phases	6 / 12
Ambient Temperature Degrees C	30°C (peaks of 40°C)
Winding voltage at 300Hz	588V Pk to Pk Trapezoidal Wave
Maximum DC imbalance current	230A DC
Tapings (MV)	None Requested
Duty Cycle	Continuous
Noise Emission dB(A) (Lpa)	N/A
Dielectric Class	3kV
BIL/Separate Source Withstand	N/A
Insulation Class (Temp. rise)	H
Winding Conductor Material	TBA

Item Data	Option A
Quantity	1
Inductance (L)	2.0 mH maintained for 10% of ADC
Rating	2300ADC
Enclosed (Medium grey)	Open
Height (mm) Approx. A	700
Length (mm) Approx. B	600
Depth (mm) Approx. C	500
Weight (kg) Approx.	350

Part B – Fittings	
Connection	Copper busbar flags (to be confirmed)
Protection	Not requested
Overload	Not oversized as values NOT advised
Standard	BS 60076

At Electro-Wind, we pride ourselves on exceeding Customer expectations, delivering on time and within budget.



## Illustrative components in a typical transformer

- |   |   |    |   |
|---|---|----|---|
| 1 | Lifting eyes                              | 7  | High temperature insulation + optional electrostatic screen |
| 2 | Core steel stack various grades available | 8  | Core bolts  |
| 3 | Terminal connection point AL/Cu           | 9  | Floor mounting fixing bracket                               |
| 4 | Low voltage winding                       | 10 | Concealed ventilation inlet                                 |
| 5 | High voltage winding                      | 11 | Ground/earthing lug   |
| 6 | Ducts for air cooling                     |    |   |

## Transformer Terms and Definitions

**Ambient Temperature:** The temperature of the atmosphere surrounding a transformer installation.

**Autotransformer:** A transformer which has only one winding per phase, part of which is common to both the primary and secondary circuits.

**Control Transformer:** Often referred to as an Industrial Control Transformer. A transformer which is designed for good voltage regulation characteristics when large inrush currents are drawn (5 to 15 times normal) and low power factor loads are connected.

**Delta:** A standard three-phase connection in which each phase winding is connected in series to form a closed loop.

**Dielectric Test:** A series of tests conducted at voltages that are much higher than the nameplate rating, to determine the effectiveness of the insulating materials and electrical clearances.

**Electrostatic Shield:** A grounded conductive sheet (usually copper) placed between primary and secondary windings, which prevents electrical interference and provides additional protection.

**Excitation Current (No-Load Current):** The current which flows in any winding used to excite the transformer when all other windings are open-circuited.

**Frequency:** On AC circuits, designates number of times that polarity alternates from positive to negative. Eg. 60 Hz (cycles per second).

**Hertz (Hz):** A term for AC frequency in cycles per second. Transformers rated for 60 hertz service should not be applied to 50 hertz, as overheating will occur. Certain transformers are rated 50/60 hertz and therefore suitable for either frequency.

**Hi Pot:** A standard dielectric test to check insulating materials and clearances between windings and ground.

**Impulse Tests:** The test employed to determine Basic Insulation Level (BIL). Impedance: The vector sum of resistance and reactance which limits the current flow in an AC circuit. Impedance is identified as a percentage and used to determine the interrupting capacity of circuit breakers that protect the primary circuit.

**Induced Potential Test:** A standard dielectric test which verifies the integrity of insulating materials and electrical clearances between turns and layers of a transformer winding.

**Isolating Transformer:** A transformer which insulates the primary circuit from secondary circuit.

**kVA:** Kilo Volt Ampere rating designates the power output which a transformer can deliver at rated voltage and frequency without exceeding a specified temperature rise.

**Load Losses:** The losses in a transformer incident to load carrying. Load losses include "I<sup>2</sup>R loss" in the windings due to load current, stray loss due to stray fluxes in the windings, core clamps, general construction, and finally to circulating currents in parallel windings.

**No-Load Losses:** The losses incurred when a transformer is excited without a load connected to the secondary. These include core loss, dielectric loss, and exciting current I<sup>2</sup>R loss.

**Polarity:** A designation of the relative instantaneous direction of the current in a secondary lead as compared with a primary lead.

**Power Factor:** The relationship of watts to volt amps in a circuit.

**Ratio:** A reference to either the primary to secondary windings turns-ratio or to the voltage ratio of the transformer.

**Reactor:** A device for introducing inductive reactance into a circuit.

**Rectifier Transformer:** A transformer designed to supply AC input to a rectifier to obtain the desired DC output and have the ability to withstand the heating effects caused by rectifier commutation or ripple.

**Scott Connection:** A transformer connection usually used to obtain a two-phase output from secondary of a transformer with a three-phase input to the primary, or vice versa.

**Step-Down Transformer:** One in which the high voltage winding is connected to the input or power source and the low voltage winding to the output or load.

**Step-Up Transformer:** A transformer in which the low voltage winding is connected to the power source or input and the high voltage winding is connected to the output load.

**Tap:** A connection provided in a transformer winding used to change the normal voltage ratio of the transformer. Taps are usually placed on the high voltage winding to correct for high or low voltage conditions found on the low voltage output side. Taps are expressed as either full capacity above normal (FCAN) or full capacity below normal (FCBN).

**T-Connection:** A Scott-connected three phase transformer utilising two primary and two secondary coils called the main and teaser coils.

**Temperature Rise:** The temperature increase over ambient due to load. This is measured as either average rise by resistance or as hot-spot.

**Thermals:** Over-temperature protection devices.

**Volt-Amperes:** An expression of the power output rating of a transformer. The current flowing in a circuit multiplied by the voltage of that circuit.

**Wye (Y) Connection:** A three-phase connection in which similar ends of each phase winding are connected together at a common point which forms the electrical neutral and is often grounded.



Electro-Wind's 25000 sq ft manufacturing facility is well equipped for volume production and engineering fabrication for all bespoke builds and projects.

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Electro-Wind's engineers can help you find the right solution at the most cost effective price.  
With our own workshop, lead times are kept to a minimum.



The background features a collage of industrial and maritime scenes. At the top, there's a view of an industrial facility with a large metal structure and a tall tower. Below that, a large white ship is docked at a pier. To the right, a modern city skyline with several skyscrapers is visible. A large, dark green diagonal shape overlaps the center of the image, serving as a background for the company name and website.

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